



**VIGNAN'S** INSTITUTE OF INFORMATION TECHNOLOGY  
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# VIIT(A) Publications (2017-2021)

*Source: Scopus database*



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## *Index*

<b>Year</b>	<b>Number of publications</b>
2017	42
2018	61
2019	134
2020	130
2021	180
<b>Total</b>	<b>547</b>



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## Research Publications- 2017

*Source: Scopus database*



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### *Index*

<b>Document Type</b>	<b>Number of papers</b>
Articles	37
Reviews	01
Conference papers	04
<b>Total publication in 2017</b>	<b>42</b>



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Articles

## Documents

- 1) Srikanth, K.<sup>a</sup>, Nagesh Kumar, G.V.<sup>b</sup>

**Novel fuzzy preview controller for rotary inverted pendulum under time delays**  
(2017) *International Journal of Fuzzy Logic and Intelligent Systems*, 17 (4), pp. 257-263.

DOI: 10.5391/IJFIS.2017.17.4.257

<sup>a</sup> Department of Electrical and Electronic Engineering, Gayatri Vidya Parishad College of Engineering (Autonomous), Visakhapatnam, India

<sup>b</sup> Department of Electrical and Electronic Engineering, Vignan's Institute of Information Technology, Visakhapatnam, India

**Abstract**

A novel fuzzy preview controller based on look up tables is proposed for control design of a rotary inverted pendulum represented with integrated time delay in system matrices. The proposed control achieved control of all system states with predefined standard requirements. The advantage of preview control helps in conservation of energy as the control input acts upon after a lookup making the system robust even under the impact of custom designed system time delays that were incorporated into the system. The proposed method shows the influence of time delay can be countered effectively by integrating the delay into the system matrix and then using the novel fuzzy granular preview control. © 2017. The Korean Institute of Intelligent Systems.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 2) Ananth, D.V.N.<sup>a</sup>, Nagesh Kumar, G.V.<sup>b</sup>

**Mitigation of voltage dip and power system oscillations damping using dual STATCOM for grid connected DFIG**  
(2017) *Ain Shams Engineering Journal*, 8 (4), pp. 581-592.

DOI: 10.1016/j.asej.2015.12.002

<sup>a</sup> DADI Institute of Engg. & Technology, Anakapalli, Visakhapatnam, Andhra Pradesh, India

<sup>b</sup> Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh, India

**Abstract**

During grid fault, transmission lines reach its thermal limit and lose its capability to transfer. If this fault current enters generator terminals, it will lead to dip in stator voltage and consequently produces torque and real power oscillations. This further affects in the form of internal heat in rotor windings and finally damages the generator. A new control strategy is proposed to limit fault current using dual STATCOM, which will damp power oscillations and mitigate the voltage dip due to a severe symmetrical fault. It is achieved by diverting the fault current to the capacitor using the dual-STATCOM controller. It is best suitable to maintain power system stability with uninterrupted power supply, effective power transfer capability and rapid reactive power support and to damp inter-area oscillations. The effectiveness of SG and DFIG due to the transmission line short circuit symmetrical fault was studied. © 2015 Ain Shams University

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 3) Roy, S.<sup>a</sup>, Bhattacharyya, D.<sup>b</sup>, Bandyopadhyay, S.K.<sup>c</sup>, Kim, T.-H.<sup>d</sup>

**An Iterative Implementation of Level Set for Precise Segmentation of Brain Tissues and Abnormality Detection from MR Images**

(2017) *IETE Journal of Research*, 63 (6), pp. 769-783.

**DOI:** 10.1080/03772063.2017.1331757

<sup>a</sup> Department of Computer Science and Engineering, U.V. Patel College of Engineering, Ganpat University, Mehsana, India

<sup>b</sup> Department of Computer Science and Engineering, Vignan's Institute of Information Technology, Visakhapatnam, India

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<sup>d</sup> Department of Convergence Security, Sungshin Women's University, Seoul, South Korea

#### Abstract

In this paper, an iterative implement of level set methodology has been proposed for the precise segmentation of normal and abnormal tissues in magnetic resonance imaging (MRI) brain images. In this segmentation, the normal tissues such as WM (white matter), GM (grey matter), and CSF (cerebrospinal fluid) with other regions of human head such as skull, marrow, and muscles skin are segmented and abnormal tissues such as haemorrhage, oedema, and tumour can be segmented if any. The segmentation is done by using iterative three region level set method based on the condition sharp peak greater than three. The iterative segmented component generates a hierarchical structure for correct segmentation. The performance of the segmentation method is estimated by different metrics such as accuracy, similarity index, and relative error. The performance of segmentation method is examined using a defined set of MRI brain. © 2017 IETE.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 4) Bali, S.K.<sup>a</sup>, Munagala, S.<sup>b</sup>, Gundavarapu, V.N.K.<sup>c</sup>

#### Intelligent control of generators in the presence of thyristor controlled series compensator using flower pollination algorithm

(2017) *Journal of Advanced Research in Dynamical and Control Systems*, 9 (1), pp. 201-220.

<sup>a</sup> Department of EEE, GITAM University, Visakhapatnam, India

<sup>b</sup> Department of EEE, JNT University, Hyderabad, Telangana, India

<sup>c</sup> Department of EEE, Vignan's Institute of Information Technology, India

#### Abstract

Stable operation is the most significant aspects of the modern power systems. Proper utilization of the available resources is also necessary. A merged index based strategy for the optimal placement of Thyristor Controlled Series Compensator (TCSC) and optimal tuning of generators using Flower Pollination Algorithm has been proposed in this paper. The TCSC has been placed on the basis of an index which is a blend of Line Utilization Factor (LUF) and Fast Voltage Stability Index (FVSI). A multi objective function has been chosen for tuning the generators. The multi-objective function involves voltage deviation, active power generation cost and transmission line loss. The proposed method is tested on an IEEE 30 bus system for normal loading and for severe system conditions due to line outage. © 2017, Institute of Advanced Scientific Research, Inc. All rights reserved.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 5) Dhanalakshmi, B.<sup>a</sup>, Kollu, P.<sup>b,c</sup>, Sekhar, B.C.<sup>d</sup>, Parvatheeswara Rao, B.<sup>e</sup>, Rao, P.S.V.S.<sup>e</sup>

#### Enhanced magnetic and magnetoelectric properties of Mn doped multiferroic ceramics

(2017) *Ceramics International*, 43 (12), pp. 9272-9275.

**DOI:** 10.1016/j.ceramint.2017.04.085

<sup>a</sup> Vignan's Institute of Information Technology, Visakhapatnam, 530049, India

<sup>b</sup> CASEST, School of Physics, University of Hyderabad, Hyderabad, 500046, India

<sup>c</sup> Newton Alumnus Researcher - The Royal Society London, Thin Film Magnetism group, Cavendish Laboratory, Department of Physics, University of Cambridge, Cambridge, CB3 0HE, United Kingdom

<sup>d</sup> Vignan's Institute of Engineering for Women, Visakhapatnam, 530046, India

<sup>e</sup> Department of Physics, Andhra University, Visakhapatnam, 530003, India

**Abstract**

Single phase multiferroics of BiFeO<sub>3</sub> (BFO) and Mn doped Bi<sub>0.95</sub>Mn<sub>0.05</sub>FeO<sub>3</sub> (BMFO), and composite multiferroic systems of BiFeO<sub>3</sub>-Ni<sub>0.5</sub>Zn<sub>0.5</sub>Fe<sub>2</sub>O<sub>4</sub> (BFO-NZFO) and Mn doped Bi<sub>0.95</sub>Mn<sub>0.05</sub>FeO<sub>3</sub>-Ni<sub>0.5</sub>Zn<sub>0.5</sub>Fe<sub>2</sub>O<sub>4</sub> (BMFO-NZFO) have been prepared by using sol-gel autocombustion and solid state methods. Rietveld analysis on the BFO and BMFO samples reveals rhombohedrally distorted single phase R3c perovskite structures while that of the multi-phase composites exhibit both spinel (for the NZFO) and perovskite phases. Scanning electron micrographs of the samples show uniformly dispersed fine grained microstructures with indications of decreased grain size for the Mn doped samples. Polarization-electric field hysteresis (P-E) loops on the samples exhibit spontaneous ferroelectric polarizations with specific enhancements in the remnant polarization by the Mn doping either in the single phase BMFO or in the multi-phase BMFO-NZFO composite. Room temperature magnetic hysteresis (M-H) loop measurements on the samples indicate that the doping of Mn in bismuth sites in the BFO has produced a considerable improvement in the magnetization, and the Mn doped BMFO-NZFO composite has shown further improvement in its value compared to that of the undoped BFO-NZFO composite. Thus, it can be inferred from the above that the Mn doping in single phase/composite BiFeO<sub>3</sub> based multiferroic ceramics is capable of enhancing both the ferroelectric and ferromagnetic properties and thereby the magnetoelectric (M-E) coupling as evident from the obtained M-E curves. © 2017 Elsevier Ltd and Techna Group S.r.l.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

6) Mishra, A.<sup>a</sup>, Nagesh Kumar, G.V.<sup>b</sup>

**Severity based contingency management approach: An Indian scenario**

(2017) *Journal of Engineering Science and Technology*, 12 (7), pp. 1833-1844.

<sup>a</sup> Department of Electrical and Electronics Engineering, Vignan's Institute of Engineering for Women, Visakhapatnam, Andhra Pradesh 530046, India

<sup>b</sup> Department of Electrical and Electronics Engineering, Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh 530046, India

**Abstract**

In today's electronic world, secured operation of the electric power system is one of the foremost requirements. Contingency analysis and management thus becomes the basic requirement of system analysis. In this paper, the contingency study has been done on a heavily loaded practical power system in an Indian scenario. A Composite Severity Index (CSI) has been proposed for the determination of critical line. The contingency analysis has been done using Rapid Contingency Ranking Technique (RCRT). By this method the number of lines on which the contingency analysis is to be performed is greatly reduced. Thereafter, an Interline Power Flow Controller (IPFC) has been placed in the system on the basis of CSI for improvement of the system situation post-contingency. An IPFC has been found to be very effective in the improvement of system condition of the heavily loaded Indian system. © School of Engineering, Taylor's University.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

7) Naidu, Y.S.<sup>a</sup>, Kumar, G.V.N.<sup>b</sup>

**Minimisation of electric field stress at triple junction of a functionally graded cone type spacer in a gas insulated busduct with metal inserts**

(2017) *High Voltage*, 2 (2), pp. 110-118.

**DOI:** 10.1049/hve.2016.0101

<sup>a</sup> Department of EEE, Vizag Institute of Technology, Visakhapatnam, India

<sup>b</sup> Department of EEE, Vignan's Institute of Information Technology, Visakhapatnam, India

**Abstract**

Insulation integrity of supporting insulator plays a vital role for determining the continuity of service of the gas insulated substation which depends upon the electric field stress distribution on the surface of the spacer. Triple junction formed by the conductor, SF<sub>6</sub> gas and support insulator is another critical area where the field stress is to be maintained at minimum value. Shape control is a technique employed for obtaining uniform field stress along the surface of the spacer but this technique may sometimes leads to very uneven shapes. In this study, a functional graded material is designed for the standard cone type spacer to obtain uniform field stress along the surface of spacer to overcome the above problem. The



grading of spacer is done with different permittivities. Electric field is computed for three cases namely grading to high, grading to low and U Shape. The metal inserts were tuned and stress is obtained in account of lower fields at the triple point junction and an improved uniform field distribution along the surface is obtained. © 2017 The Institution of Engineering and Technology. All rights reserved.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 8) Adi Maheswara Reddy, G.<sup>a</sup>, Venkatarao, K.<sup>b</sup>, Murthy, J.V.R.<sup>c</sup>

**A hybrid mitigation technique for cache assisted side channel attack in cloud computing**

(2017) *Journal of Theoretical and Applied Information Technology*, 95 (6), pp. 1236-1242.

<sup>a</sup> Department of CSE, JNTUK, Kakinada, AP, India

<sup>b</sup> Department of CSE, Vignan Institute of Information Technology Visakhapatnam AP, India

<sup>c</sup> Department of CSE, JNTUK College of Engineering, Kakinada, AP, India

**Abstract**

Cloud computing has attained extensive approval for administrations in addition to individuals by presentation computation, storage and software aided amenities. Since, the Cloud services become further prevalent, approaches in the current past has revealed liabilities exclusive to such systems. Different from mainstream computing, the framework assisting Cloud permits communally suspecting individuals to instantaneously access an essential cache consequently encouraging a threat of data leakage through virtual machines through side channels. Therefore, numerous mitigation techniques has been developed by scholars for various side channel attacks. In this paper, author chiefly focuses on cache aided side channel attacks and a novel hybrid mitigation approach is suggested that amalgamated both the sequential mitigation approach and parallel mitigation approach. This technique is mainly employed when the cache is accessed through single core and through multiple core. The experimental results for the proposed approach is carried out using SPEC 2006 specifications and has been shown that the efficiency and usefulness of the cache memory is more in the proposed approach compared to the existing sequential and parallel schemes. © 2005 – ongoing JATIT & LLS.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 9) Ganesan, S.<sup>a</sup>, Padmanabhan, S.<sup>a</sup>, Vihaari, V.<sup>b</sup>, Krishna Kumar, S.<sup>b</sup>, Yamini, P.<sup>c</sup>

**Influence of MGO on emissions of DI engine using blends of biodiesel**

(2017) *ARPJ Journal of Engineering and Applied Sciences*, 12 (6), pp. 1792-1795.

<sup>a</sup> Faculty of Mechanical Engineering, Sathyabama University, Chennai, India

<sup>b</sup> Department of Mechanical Engineering, Sathyabama University, Chennai, India

<sup>c</sup> Department of Mechanical Engineering, Vignan's Institute of Information Technology, Visakhapatnam, India

**Abstract**

With the technological development, the research over alternate fuels is increasing day by day in order to help the upcoming generation with a bright and greener future. In order to preserve the existing petroleum resources for future generation, it is necessary to soon switch to any alternate source which is easily available, renewable as well as environment friendly. In this paper I would like to highlight upon the usage of Diesel, Castor Oil and Nano Particles for a compression ignition engine and study the emission characteristics of this fuel at different mixing ratios and analyze the different levels of residue particles. © 2006-2017 Asian Research Publishing Network (ARPJ). All rights reserved.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 10) Roy, S.<sup>a</sup>, Bhattacharyya, D.<sup>a b</sup>, Bandyopadhyay, S.K.<sup>a c</sup>, Kim, T.-H.<sup>d</sup>

**An effective method for computerized prediction and segmentation of multiple sclerosis lesions in brain MRI**

(2017) *Computer Methods and Programs in Biomedicine*, 140, pp. 307-320.

**DOI:** 10.1016/j.cmpb.2017.01.003

<sup>a</sup> Department of Computer Science and Engineering, Institute of Computer Technology (UVPCE), Ganpat University, Sola, Ahmadabad, Gujarat 380060, India

<sup>b</sup> Department of Computer Science and Engineering, Vignan's Institute of Information Technology, Visakhapatnam, AP 530049, India

<sup>c</sup> Department of Computer Science and Engineering, Calcutta University Technology Campus, JD-2, Sector-III, Salt Lake, Kolkata, 98, India

<sup>d</sup> Department of Convergence Security, Sungshin Women's University, 249-1, Dongseon-dong 3-ga, Seoul, 136-742, South Korea

### Abstract

**Background and objectives** Multiple sclerosis is one of the major diseases and the progressive MS lesion formation often leads to cognitive decline and physical disability. A quick and perfect method for estimating the number and size of MS lesions in the brain is very important in estimating the progress of the disease and effectiveness of treatments. But, the accurate identification, characterization and quantification of MS lesions in brain magnetic resonance imaging (MRI) is extremely difficult due to the frequent change in location, size, morphology variation, intensity similarity with normal brain tissues, and inter-subject anatomical variation of brain images. **Methods** This paper presents a method where adaptive background generation and binarization using global threshold are the key steps for MS lesions detection and segmentation. After performing three phase level set, we add third phase segmented region with contour of brain to connect the normal tissues near the boundary. Then remove all lesions except maximum connected area and corpus callosum of the brain to generate adaptive background. The binarization method is used to select threshold based on entropy and standard deviation preceded by non-gamut image enhancement. The background image is then subtracted from binarized image to find out segmented MS lesions. **Results** The step of subtraction of background from binarized image does not generate spurious lesions. Binarization steps correctly identify the MS lesions and reduce over or under segmentation. The average Kappa index is 94.88%, Jacard index is 90.43%, correct detection ration is 92.60284%, false detection ratio is 2.55% and relative area error is 5.97% for proposed method. Existing recent methods does not have such accuracy and low value of error rate both mathematically as well as visually due to many spurious lesions generation and over segmentation problems. **Conclusions** Proposed method accurately identifies the size and number of lesions as well as location of lesions detection as a radiologist performs. The adaptability of the proposed method creates a number of potential opportunities for use in clinical practice for the detection of MS lesions in MRI. Proposed method gives an improved accuracy and low error compare to existing recent methods. © 2017 Elsevier Ireland Ltd

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

11) Kumar, B.S.<sup>a</sup>, Suryakalavathi, M.<sup>a</sup>, Kumar, G.V.N.<sup>b</sup>

**A combinatory index based optimal reallocation of generators in the presence of SVC using krill herd algorithm** (2017) *Open Engineering*, 7 (1), pp. 213-220.

**DOI:** 10.1515/eng-2017-0027

<sup>a</sup> Dept. of EEE, JNT University, Hyderabad, India

<sup>b</sup> Dept. of EEE, Vignan's Institute of Information Technology, Visakhapatnam, India

### Abstract

In the new competitive electric world, it is compulsory for the electrical industry to make effective utilization of the available resources. Optimal tuning of generators and implementation of FACTS devices has been found to be very effective in this regard. In this paper, a combination strategy of optimal tuning of generators using Krill herd (KH) algorithm in the presence of Static VAR Compensator (SVC) has been proposed. A combinatory index (CI), which is a combination of  $V_i/V_o$  index and L-index, has been formulated and verified for obtaining the optimal location of SVC. A multi objective function has been formulated for tuning the generators. The results obtained after performing Optimal Power Flow on an IEEE 30 bus system for normal loading and for severe system conditions due to line outage in the presence of SVC using KH has been verified with that of GA, to prove the effectiveness of the chosen methodology. © 2017 Bali Sravana Kumar et al.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

12)

Reddy, M.K.<sup>a</sup>, Srinivasa Rao, P.<sup>b</sup>, Laxmi Lydia, E.<sup>c</sup>

**PSO techniques in hadoop cluster and scheduling using k-centroids clustering**

(2017) *Journal of Advanced Research in Dynamical and Control Systems*, 9 (5), pp. 40-47.

<sup>a</sup> Indo US Collaboration for Engineering Education (IUCEE), Hyderabad, India

<sup>b</sup> Department of Computer Science and Systems Engineering, A.U College of Engineering, Andhra University Andhra Pradesh, India

<sup>c</sup> Department of Computer Science and Engineering, Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh, India

**Abstract**

Big data stockpiling administration is a standout amongst the most difficult issue for Hadoop cluster conditions, given that colossal measure of data serious purposes ordinarily contain a high measure of learning passage region. In conventional methodology high-effectiveness figuring comprises submitted servers that are utilized to information stockpiling and information duplication. Therefore to determine the issues of Disparateness among the many tasks and resources a "Disparateness-concise Scheduling algorithm" is introduced in a cluster condition. In this work we portray k-centroids clustering in huge data instrument for Hadoop cluster. This procedure is most usually interested with the energy utilization inside the Hadoop cluster, which expands the approach enduring quality. The Hadoop cluster contains K-Centroids clustering algorithm that is mainly used in reducing the cluster length of the resources. Load, energy, and network time is used as a display component, with the guide of incorporating the above mentioned three important parameters, the upgraded wellness capacity is utilized for Particle Swarm Optimization (PSO) to pick the computing load node. The system might experience breakdowns in order to improve the overall tolerance of the system to reduce the occurrence of failure in nodes subsequent improvement is done on scheduling length, scheduling delay, speed up, failure ratio, and energy consumption than the preceding frameworks. © 2017, Institute of Advanced Scientific Research, Inc.. All rights reserved.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

13) Umamaheswari, R.<sup>a</sup>, Sumanth Kumar, C.<sup>b</sup>

**Evaluation of piecewise linear techniques of companding in decreasing papr in ofdm related to sui channels**

(2017) *Journal of Advanced Research in Dynamical and Control Systems*, 9 (3), pp. 228-239.

<sup>a</sup> Department of Electronics and Communication Engineering, Vignan's Institute of Information Technology, Duvvada, Andhra Pradesh 530049, India

<sup>b</sup> Department of Electronics and Communication Engineering, GITAM College, Visakhapatnam, India

**Abstract**

The main demerit of OFDM system is its PAPR values. Of the various methods available Piecewise linear technique has been found to be most appropriate for this purpose. Considering SUI channels and simulation methods conclusive results have been obtained to prove the efficacy of piecewise linear method. This method also optimizes the BER, SNR and enhances PSD and spectral efficiency. © 2018, Institute of Advanced Scientific Research, Inc. All rights reserved.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

14) Sampath Dakshina Murthy, A.<sup>a</sup>, Koteswara Rao, S.<sup>b</sup>, Das, R.P.<sup>a</sup>

**Minimization of degeneracy problem inverse beta coefficient by roughening particle filter**

(2017) *Journal of Advanced Research in Dynamical and Control Systems*, 9 (18 Special Issue), pp. 76-84.

<sup>a</sup> Department of Electronics and Communication Engineering, Vignan's Institute of Information Technology, Visakhapatnam, AP, India

<sup>b</sup> Department of Electronics and Communication Engineering, K.L.University, Guntur, AP, India

**Abstract**

In tracking problem related to sonar and radar, the range of 2000 is acceptable for estimates sampling impoverishment due

to sampling is utilized in achieving desired predisposition. To solve the degeneracy problem coupling by roughening with particle filter can be adopted. Kalman filter is preferred for complying with steps of monitoring the posterior chance as Kalman recursive tips method Gaussian patterns. This paper presents optimum techniques for solving degeneracy problem by roughening of the particle filter. © 2018, Institute of Advanced Scientific Research, Inc. All rights reserved.

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

15) Nagajyothi, A.<sup>a</sup>, Das, R.P.<sup>b</sup>

**Rectangular nanostrip patch antenna for multi directional radiation in tera hertz applications**

(2017) *Journal of Advanced Research in Dynamical and Control Systems*, 9 (Special issue 14), pp. 671-679.

<sup>a</sup> Department of Electronics and Communication Engineering, Vignan Institute of Information Technology, Duvvada, Andhra Pradesh 530049, India

<sup>b</sup> SMIEE, Departments of Electronics and Communication Engineering, Vignan Institute of Information Technology, Duvvada, Andhra Pradesh 530049, India

**Abstract**

Rectangular nanostrip patch antenna with copper material as patch and Rogers RT Duroid as substrate at nano scale has been designed and optimized using Ansoft HFSS software. The aim objective of this work is to design nanostrip patch antenna for terahertz domain as per desired design specifications. The sections considered here are width (W), Length (L) and substrate height (h), Relative permittivity ( $\epsilon_r$ ), radiation parameters and Bandwidth. The substrate chosen in this work is Rogers RT Duroid as it is an exciting alternative for manufacturing of components and modules for high performance communication systems in nano region. Hence Rogers RT Duroid substrate and copper patch is designed at nano scale and is simulated with HFSS. In view of this design selection of length, width of the patch is done and is confined to nano region. Resultant characteristics such as gain, directivity, polarization, return loss, scattering parameters and radiation patterns were analyzed and proved that this antenna is suitable for multi directional radiation in terahertz region. © 2017, Institute of Advanced Scientific Research, Inc. All rights reserved.

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

16) Naga Jyothi, A., Gowthami, A.

**Slotted nanostrip patch antenna in tera hertz regime**

(2017) *Journal of Advanced Research in Dynamical and Control Systems*, 9 (Special issue 14), pp. 517-524.

Department of Electronics and Communication Engineering, Vignan's Institute of Information Technology, Duvvada, Andhra Pradesh 530049, India

**Abstract**

Rogers RT/Duroid 5870(tm) dielectric material whose relative permittivity 2.33 & permeability 1 has been used to design nanostrip antenna at Nanoscale. The essence of this endeavor is to design a slotted nano strip antenna for terahertz frequency. Antenna dimensions such as length (l), width (w), thickness (t) were calculated using transmission line model. Substrate with low dielectric constant is generally preferred for maximum radiation. The slotted nano strip antenna design is simulated for various parameters such as Gain(G), Directivity(D), voltage standing wave ratio(VSWR), s parameter(s<sub>11</sub>) and radiation pattern were analyzed using HFSS13.0. The center frequency to be operated is 500 THZ. It is proved that slotted nanostrip antenna is suitable for terahertz frequency. © 2017, Institute of Advanced Scientific Research, Inc. All rights reserved.

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

17) Sampath Dakshina Murthy, A.<sup>a</sup>, Syamala, T.<sup>a</sup>, Koteswara Rao, S.<sup>b</sup>, Das, R.P.<sup>c</sup>

**Real time differential global positioning system using fuzzy logic extended kalman filter**

(2017) *Journal of Advanced Research in Dynamical and Control Systems*, 9 (Special issue 14), pp. 525-534.

<sup>a</sup> Department of Electronics and Communication Engineering, Vignan's Institute of Information Technology, Visakhapatnam, India

<sup>b</sup> Department of Electronics and Communication Engineering, K.L.University, Guntur, A.P, India

<sup>c</sup> SMIEE, Departments of Electronics and Communication Engineering, Vignan Institute of Information Technology, Duvvada, Andhra Pradesh 530049, India

**Abstract**

A DGPS target tracking solution based on non-dynamical model has been proposed. This is based on nonlinear filter using fuzzy interference system. In comparison with extended Kalman filter the verification based on empirical rules is quite encouraging simulation activates indicates such rules. © 2017, Institute of Advanced Scientific Research, Inc. All rights reserved.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 18) Adinarayana, V.<sup>a</sup> , Murali Krishna, K.<sup>b</sup> , Rajesh Kumar, P.<sup>c</sup>

**A space frequency block coded MIMO OFDM channel estimation under various schemes of modulation with rayleigh, AWGN channel states**

(2017) *Journal of Advanced Research in Dynamical and Control Systems*, 9 (Special issue 14), pp. 535-545.

<sup>a</sup> Department of Electronics and Communication Engineering, Vignan's Institute of Information Technology, India

<sup>b</sup> Dept. of ECE, ANITS Engineering College, Tagarapavalasa, Visakhapatnam, AP, India

<sup>c</sup> Dept. of ECE, A.U College of Engg, Andhra University, Visakhapatnam, AP, India

**Abstract**

For Broad band wireless senerio the importance of SFBC,STBC are need to be examined comparatively for various fading conditions with high data rates. This paper is proposed to Estimate the channel in terms of BER,SER Vs SNR under different Transmit diversity schemes.simulation result shows that SFBC is better than STBC © 2017, Institute of Advanced Scientific Research, Inc. All rights reserved.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 19) Pusarla, N.<sup>a</sup> , Khedkar, M.<sup>a</sup> , Das, R.P.<sup>b</sup> , Tejasri, P.<sup>a</sup>

**Fuzzy logic based smart irrigation system using microcontrollers**

(2017) *Journal of Advanced Research in Dynamical and Control Systems*, 9 (Special issue 14), pp. 707-714.

<sup>a</sup> Department of Electronics and Communication Engineering, Vignan's Institute of Information Technology, Visakhapatnam, A.P, India

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**Abstract**

Now-a-days on average water allocated to irrigation exceeds 69% of water resources. Efficiency of water usage can be increased by Automatic irrigation system by monitoring soil moistures and other crop parameters at optimum level. Fuzzy based smart irrigation system is proposed in this paper in which sensors and controllers are involved. The sensors are installed to monitor the temperature and moisture of the soil, whereas fuzzy rule based microcontroller is used to control the water flow for irrigation. Fuzzy based simulation results show that proposed method gives much better performance in comparison with manual or machine driven irrigation system. © 2017, Institute of Advanced Scientific Research, Inc. All rights reserved.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

20) Thammana, A.<sup>a</sup>, Das, R.P.<sup>b</sup>

**Performance evolution analysis of precoded ofdm with PLC transform over WIMAX channels**

(2017) *Journal of Advanced Research in Dynamical and Control Systems*, 9 (Special issue 14), pp. 546-560.

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**Abstract**

OFDM, Orthogonal Frequency Division Multiplexing is an effective approach for wireless communication applications which require high data rates. OFDM signal has demerit of its large Peak-to-Average Power Ratio (PAPR), this creates large distortion for a nonlinear device. A piecewise linear companding technique has been proposed for minimizing companding distortion. In this paper, a combination of Precoding methods with piecewise linear companding technique is proposed to reduce peak-to-average of OFDM signal. Results show that the proposed technique obtains significant PAPR reduction and maintaining better performance in the Bit Error Rate (BER) and Power Spectral Density (PSD) in comparison to the existing method. © 2017, Institute of Advanced Scientific Research, Inc. All rights reserved.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

21) Pavani, T.

**Synthesis of circular antenna arrays using flower pollination algorithm**

(2017) *Journal of Advanced Research in Dynamical and Control Systems*, 9 (Special issue 14), pp. 767-778.

Department of Electronics and Communication Engineering, Vignan Institute of Information Technology, Duvvada, Andhra Pradesh 530049, India

**Abstract**

Flower Pollination Algorithm (FPA) is employed for the optimization of nonuniform circular antenna arrays. The flower pollination algorithm is based on the characteristics of pollination process of flowers plants. The method of FPA is used to determine parameters of antenna elements that provide the desired radiation pattern. The numerical results show the effectiveness of FPA for the design of antenna. Comparison of results of FPA is made with that obtained using Firefly Algorithm and uniform circular array. A comparative evaluation of FPA and FA in the performance to design circular antenna arrays is presented. © 2017, Institute of Advanced Scientific Research, Inc. All rights reserved.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

22) Asish Vardhan, K.<sup>a</sup>, Thirupathi Rao, N.<sup>b</sup>, Anitha, J.<sup>b</sup>, Bhattacharyya, D.<sup>b</sup>, Kim, T.-H.<sup>c</sup>

**Studies on the performance of image matching techniques for IFD model**

(2017) *International Journal of Grid and Distributed Computing*, 10 (12), pp. 21-30.

**DOI:** 10.14257/ijgdc.2017.10.12.03

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**Abstract**

Advanced pictures are difficult to control and alter since the convenience of capable picture management and changing programming. These days, it is believable to contain or push out very important highlights from a picture without leaving any

conspicuous hints of altering. As computerized cameras and camcorders supplant their simple partners, the requirement for verifying advanced pictures, approving their substance, and distinguishing frauds will just increment. Most existing systems to identify such altering are for the most part at the cost of higher computational multifaceted nature. Specifically, the attention was given on recognition of an uncommon kind of computerized phony – the Copy-Move assault in which a piece of the picture is reordered on another part for the most part to cover undesirable bits of the picture. Consequently, the fundamental objective of Copy-Move Forgery Detection (CMFD) is to distinguish duplicate move phonies territories that are same or to a great degree comparative. In CMFD a productive and strong way to deal with recognizes such particular sort of phonies is actualized. This takes after piece based coordinating strategy to recognize frauds in an advanced picture. In the first place, the first picture is separated into settled size squares, clustering the pieces by crossing point region among squares and removing comparable bunches. This strategy may effectively distinguish the fashioned part notwithstanding when the replicated region is improved/modified to blend it with the foundation and when the manufactured picture is spared in a noteworthy realistic document organize, for example, JPEG or PNG. © 2017 SERSC Australia.

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

- 23) Thammana, A.<sup>a</sup>, Das, R.P.<sup>b</sup>, Sampath Dakshina Murthy, A.<sup>a</sup>, Koteswarao Rao, S.<sup>c</sup>

**A new proposed adaptive modulation technique using FIS for OFDM**  
 (2017) *Journal of Advanced Research in Dynamical and Control Systems*, 9, pp. 756-766.

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**Abstract**

Due to uncertain nature of wireless channels the OFDM system is reduced in case of fixed modulation methods. There is a need for improvement in case of high data rates and perfect, error free data delivery. An adaptive modulation technique is necessary for adapting to the varying nature of the channel based on code rate, BER, fading effects, SNR characteristics and current modulation. Fuzzy Inference system has been used to cover the uncertainties for achieving the goal. © 2017, Institute of Advanced Scientific Research, Inc. All rights reserved.

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

- 24) Sampath Dakshina Murthy, A.<sup>a</sup>, Koteswarao Rao, S.<sup>b</sup>, Das, R.P.<sup>c</sup>, Kishore, K.L.<sup>a</sup>

**Recognition of facial features by principal component analysis using eigenvalues of variants**  
 (2017) *Journal of Advanced Research in Dynamical and Control Systems*, 9 (Special Issue 14), pp. 736-744.

<sup>a</sup> Department of ECE, Vignan's Institute of Information Technology, Visakhapatnam, A.P, India

<sup>b</sup> Department of ECE, KL University, Guntur, Vaddeswaram, Andhra Pradesh 522 502, India

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**Abstract**

Objective: Identification of image for the purpose of face recognition is important from medical and forensic purpose. Methods/Analysis: In this paper a method of face recognition using principal component analysis is proposed. This is a multivariate technique. This provides reduced dimensions. Findings: Data set of M variables is recombined into small number which contains essential information. A set of correlated variables is transformed into new set uncorrelated variables in PCA. Implementation is done over simple image of plants and human faces. Novelty/Improvement: Some of successive sequences are defined with respect to zero, Eigen value of two images is calculated as semi values approximate in wavelet and discrete wavelet transforms. © 2018, Institute of Advanced Scientific Research, Inc. All rights reserved.

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

- 25) Das, R.P.<sup>a</sup>, Roja, G.<sup>b</sup>, Sampath Dakshina Murthy, A.<sup>b</sup>, Koteswarao Rao, S.<sup>c</sup>

**Global positioning system object tracking by applying fuzzy logic non linear techniques**

(2017) *Journal of Advanced Research in Dynamical and Control Systems*, 9, pp. 725-735.

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<sup>c</sup> Department of Electronics and Communication Engineering, K.L.University, Guntur, AP, India

**Abstract**

Object tracking by global positioning system is a very important technique in many defence oriented applications. Non-linear techniques based on fuzzy logic extend the application to even where measurements cannot be carried out precisely. Different types of non linear filters like extended kalman filter, hybrid extended kalman filter, firefly hybrid extended kalman filter have been tried to work out the optimum solution. Error based fuzzy logic has been the basis of tuning the technique. © 2017, Institute of Advanced Scientific Research, Inc. All rights reserved.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 26) Madhusudhana Rao, T.V.<sup>a</sup>, Srinivasa Rao, P.<sup>b</sup>, Srinivas, Y.<sup>c</sup>

**A secure framework for cloud using map reduce**

(2017) *Journal of Advanced Research in Dynamical and Control Systems*, 9, pp. 1850-1861.

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**Abstract**

A new data mining method called temporal pattern identification in cloud is developed using MapReduce: a power full feature of hadoop with temporal features. In the paper a new approach called temporal features based authentication approach has been introduced where a user will be verified by 2 phases. For identifying temporal patterns the data within hadoop cluster can be encrypted by using the features of symmetric encryption technique. The hadoop cluster can be exported to cloud based on user demand such as IAAS, SAAS, and PAAS. This cloud model also enables and adds the networking functionalities and many other resources to cloud computing system to provide the means of dynamically flexible placement of virtual resources that crossing over service provider borders. It also allows different kinds of optimization techniques and functionalities, e.g., reducing network load. This approach brings out to enable many new security challenges over the cloud environment using hadoop distributed file system. A new framework called Hadoop cluster that reduce the job in extracting the information over the data analysis using the three functionalities like Map, Copy and Reduce, which are used to access the cloud with pay-as-you-go model. The article presents a new security architecture, which enables the user of cloud networking to illustrate the security requirements and apply them in the cloud networking infrastructure to identify temporal patters of user who entered into cloud. Experimentation conducted by hiding text, image and both in video file and the performance of the cluster can also be monitored by using ganglia monitoring tool to provide auto-scaling functionality of the cluster. © 2017, Institute of Advanced Scientific Research, Inc. All rights reserved.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 27) Adi Maheswara Reddy, G.<sup>a</sup>, Venkata Rao, K.<sup>b</sup>, Murthy, J.V.R.<sup>c</sup>

**Eviction bit and inclusive cache based replacement policy for side channel attack**

(2017) *International Journal of Applied Engineering Research*, 12 (19), pp. 9038-9045.

<sup>a</sup> Department of Computer Science and Engineering, Jawaharlal Nehru Technological University, Kakinada, Andhra



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### Abstract

Modern Cloud Computing Architecture shares physical resources throughout diverse programs so as to maximize the efficiency based on area, energy, and cost. In the most widely-used environment, where each core has more than single level private caches, and shares an inclusive lower-level cache with all the other cores. Regrettably, sharing causes a hazard to security, though procedures are completely remote on rational level, employing a physical resource among them generally tells that single procedures resource usage outline could be witnessed by outsiders. Cache replacement policies are one of the prevalently employed countermeasures that considerably impact the performance of side channel attacks in cloud computing. In this paper, a new replacement scheme is suggested to safeguard in contrast to these conflict side channel attack known as Eviction bit and Inclusive Cache based Replacement policy. An Eviction Bit is assigned to each cache line that is targeted for replacement and the detection of inclusive cache is done. These two steps added increased the cache replacement policy performance efficiency. The experimental results are performed on 8 different cores where 7 cores are victim and 1 is a spy core that seeks the confidential information of victim. This showed that the proposed approach has better performance efficiency compared to existing SHARP and Hybrid mitigation technique. © Research India Publications.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 28) Anitha, J.<sup>a</sup>, Thirupathi Rao, N.<sup>b</sup>, Bhattacharyya, D.<sup>b</sup>, Kim, T.-H.<sup>c</sup>

### An approach for summarizing hindi text using Restricted Boltzmann machine in deep learning

(2017) *International Journal of Grid and Distributed Computing*, 10 (11), pp. 99-108.

**DOI:** 10.14257/ijgcd.2017.10.11.09

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### Abstract

Text summarization plays a crucial role nowadays due to large data available in day to day life. Reduced documents are useful and essential in the busy schedule of our lives. In this paper documents are summarized by four phases. They are preprocessing, feature vector generation, sentence score generation and summary generation. Sentence score is generated by Restricted Boltzmann machine (RBM) to improvise the result accuracy without losing the important information. Each of the sentence in the document undergoes all the phases and final summary generated is better as comparison among the existing (NN+fuzzy) and proposed method (Fuzzy+DL) with  $\alpha$  value as 0.25 and  $\beta$  as 0.75. According to the analysis for precision rate at CR 30%, the Fuzzy+DL method is higher compared to the NN+fuzzy method (Fuzzy+DL)-0.875 and (NN+fuzzy)-0.256). The results shows the comparison graph for recall rate at 30%, the Fuzzy+DL method is higher compared to the NN+fuzzy method ((Fuzzy+DL)-0.777 and (NN+fuzzy)-0.6667) and the result also depicts the comparison graph for F-measure at CR 30%, the Fuzzy+DL method is higher compared to the NN+fuzzy method ((Fuzzy+DL)-0.8235 and (NN+fuzzy)-0.36363. © 2017 SERSC Australia.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 29) Naga Malleswari, D.<sup>a</sup>, Suresh Babu, S.<sup>b</sup>, Moparthy, N.R.<sup>c</sup>, Mandhala, V.N.<sup>a</sup>, Bhattacharyya, D.<sup>d</sup>

### Hash based indexing in running high dimensional software systems

(2017) *Journal of Advanced Research in Dynamical and Control Systems*, 9 (Special Issue 6), pp. 34-43.

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<sup>b</sup> Department of Information Technology, VFSTR University, Guntur, India

<sup>c</sup> Department of Computer Science and Engineering, Velagapudi Ramakrishna Siddartha Engineering College, Vijayawada, India

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#### Abstract

Handling high dimensional data assists in real time data proceedings for different services in synthetic data sets presentation is an impressive concept in present days. Load maintenance is also an effective way to process high dimensional data with multiple attributes in data sharing to server and client data processing. Traditionally compare different approaches for testing load and data attribute processing. Those techniques analyzed following descriptions to ensure high dimensional data process, 1) Design and implementation of load maintenance 2) Execution of different loads with different attributes 3) Analyzing load test results. To improve software quality with different attributes in high dimensional data, load testing is not a suitable parameter to do large scale system analysis. So in this paper we propose Z-order index data processing with different attributes in real time applications. In this we present to implement Z+ tree data structure implementation for data processing from high data indexing with different attributes. We also measure the parallel data analysis with respect to data representation with service oriented architecture implementation. Our experimental results show effective data performance in multi attribute data processing with multiple systems servicing parallel. © 2017, Institute of Advanced Scientific Research, Inc. All rights reserved.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 30) Laxmi Lydia, E.<sup>a</sup>, Somasundaram, K.<sup>b</sup>, Krishan Mohan, A.<sup>c</sup>

#### Data analytics through Hadoop eco-components

(2017) *Journal of Advanced Research in Dynamical and Control Systems*, 9 (5), pp. 1-7.

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#### Abstract

With the Today's Interpreters world, Hadoop disbursed File approach (HDFS) is totally good identified. It gives method to put up information in conveyed problem and also it has a set of additional devices to get well and prepare. These information arranges appropriate advisor to cut down thought. In this paper, With Pig and Hive, Hadoop dispersed file framework is developed. Expertise performs investigation on big understanding and it is carried with the help of Intensive examination. Apache Pig and Hive are two enterprises that are mounted on high of Hadoop, and bring up more multiplied amount dialect to effect Hadoop's MapReduce library. Here, as a matter of first simplification, this paper proposes the major recommendations for MapReduce, Pig and Hive. And also it does the assessment of efficiency. © 2017, Institute of Advanced Scientific Research, Inc. All rights reserved.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 31) Patel, B.<sup>a</sup>, Roy, S.<sup>a</sup>, Bhattacharyya, D.<sup>b</sup>, Kim, T.-H.<sup>c</sup>

#### Necessity of big data and analytics for good e-governance

(2017) *International Journal of Grid and Distributed Computing*, 10 (8), pp. 11-20.

**DOI:** 10.14257/ijgdc.2017.10.8.02

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#### Abstract

Big Data is the most trending topic in the computer science field. This big data analysis is booming field in present days and used to get the insight in the particular domain. Big data analytics is used to solve many problems and get the predations of many upcoming problems. Big Data refers to the huge dataset which is not managed and handle by old traditional methods. Big Data plays a very important role in effective management of e-governance. In this paper we collect the kishan call center (KCC) data as the data is in semi structured format i.e in JavaScript Object Notation (JSON) format so we used mongoDB to store. For analysis purpose before using the data we had converted it into the structured format. After converting into the structured format we created charts for better understanding. This paper focuses on how the big data and analysis is helpful for good e-governance. This big data is useful to get the insight and predictive analysis that gives good e-governance. © 2017 SERSC Australia.

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

- 32) Rao, N.T.<sup>a</sup>, Srinivas, P.<sup>a</sup>, Rajkumar, C.<sup>a</sup>, Bhattacharyya, D.<sup>a</sup>, Kim, H.-J.<sup>b</sup>

**Studies on performance analysis of cloud computing based data centers with queuing models using MATLAB**  
 (2017) *International Journal of Grid and Distributed Computing*, 10 (6), pp. 55-70.

**DOI:** 10.14257/ijgcd.2017.10.6.05

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#### Abstract

Cloud computing was the technology developed to store the data and support the users with the access to the data stored by charging a minimal amount for the storage of data and for providing necessary steps for storing the data and for providing security to the data that was stored. The content stored in various servers at various locations based on the type and size of the content. The content can be accessed to the users with valid registrations and a set of security verifications entered by the customers. The content that was hosted in the servers can also be used for hosting various applications and various other set of options of systems in various fields. It is one of the most famous and mostly used research areas in the recent years for further development in various set of applications and its usages related to several set of customers in the real time environment. Performance evaluation in cloud computing has been another major thrust area in the recent past, which is of crucial interest for both cloud providers and cloud customers. Only few notable works have been published with regards to performance evaluation in cloud computing. Generally analytical models established for assessing the working and the performance of cloud server farms can be studied under variety of configurations and assumptions are based on queuing theory and its accuracy is verified with numerical calculations and simulations. The problems at hand give rise to the task of evaluating the performance of data center with various queuing models to understand the distribution of the performance parameters with arrival and service rates, traffic intensity, number of servers and the associated probabilities. The goals of this thesis is to provide a framework through programs related to queuing models and evaluate the performance parameters, attempt validation, sensitivity analysis and make comparisons for data centers. Present thesis evaluates the performance parameters of cloud data centers based on queuing theory for both single server and multi-server models. The steady state performance parameter formulations identified are programmed in MATLAB® environment. The models considered for evaluation for single servers include M/M/1, M/G/1, M/D/1. Service rates have a wider range of distributions including exponential, generalize and Erlang type. © 2017 SERSC.

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

- 33) Rao, N.T.<sup>a</sup>, Bhaskar, P.U.<sup>a</sup>, Srinivas, P.<sup>a</sup>, Bhattacharyya, D.<sup>a</sup>, Kim, H.-J.<sup>b</sup>

**An efficient technique to design elasticity and reliable content based publish/subscribe system in cloud**  
 (2017) *International Journal of Grid and Distributed Computing*, 10 (4), pp. 21-32.

**DOI:** 10.14257/ijgcd.2017.10.4.03

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#### Abstract

As the data arriving from the day to day applications was being increasing from the internet, several problems arise to

disseminate the data. The major problem that was being observed recently was to supply the required data to the user who want the exact data from the vast existing data in the internet. The present proposed model was one of the mostly used mechanisms for achieving this task. As the data is huge, the size of the system increases numerously. The cloud computing is the latest technology which was being used to solve such types of problems and provides great opportunities for the users. In this paper, the ESCC Technique which was used to solve such type of problems was discussed in detail. A two layer pub/sub system was developed and analyzed to achieve this task in the environment of cloud computing. © 2017 SERSC.

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

- 34) Amreen<sup>a</sup>, Srinivas, P.<sup>a</sup>, Rao, N.T.<sup>a</sup>, Bhattacharyya, D.<sup>a</sup>, Kim, H.-J.<sup>b</sup>

**Performance evaluation in cloud computing model using queuing models**  
 (2017) *International Journal of Grid and Distributed Computing*, 10 (3), pp. 15-24.

**DOI:** 10.14257/ijgdc.2017.10.3.02

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#### Abstract

Cloud computing is the process of enabling the network access to a set of selected users with good configuration of computing resources on the basis of availability of the network access whenever there is an demand for the services from the cloud. Cloud computing is a regular term and the regular service that was being delivering the required services to the hosts in the internet. Here, the cloud computing mechanism is used for describing both the list of platforms that were available to the users for working and also the several types of applications that can be processed. The present technique was being considered by most of the researchers and the research institutes as the most potential and the most useful area for the research and also for research in academia like universities and major research laboratories. Performance evaluation of several applications the related applications and their sub parts were being considered as one of the useful and mostly used research area in the recent years. This technique and its services were being used mostly for the providers of the cloud and its related areas and the beneficiaries of this technique of area were both the providers of the cloud and the customers related to the cloud. Only few notable works have been published with regards to performance evaluation in cloud computing. In general the analytical models were aimed at designing the models which use the cloud and its services through which the performance of the model was analyzed and evaluated under various configurations and assumptions. These assumptions were based on the queuing theory and its accuracy is verified with numerical calculations and simulations. Present paper deals with the performance evaluation in-terms of steady state parameters of a small cloud server farm using single and multi server queuing models. Single server models include M/M/1, M/G/1, M/D/1 and M/Er/1. Multi-server model considered include M/M/c, M/M/c/c, M/M/c/K and M/M/c/c+r. A comparison among the steady state parameters evaluated for the above queuing models with respect to traffic intensity is also presented. © 2017 SERSC.

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

- 35) Parmar, R.R.<sup>a</sup>, Roy, S.<sup>a</sup>, Bhattacharyya, D.<sup>b</sup>, Bandyopadhyay, S.K.<sup>c</sup>, Kim, T.-H.<sup>d</sup>

**Large-Scale Encryption in the Hadoop Environment: Challenges and Solutions**  
 (2017) *IEEE Access*, 5, art. no. 7922533, pp. 7156-7163.

**DOI:** 10.1109/ACCESS.2017.2700228

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#### Abstract

Data is growing at an enormous rate in the present world. One of the finest and most popular technologies available for handling and processing that enormous amount of data is the Hadoop ecosystem. Enterprises are increasingly relying on

Hadoop for storing their valuable data and processing it. However, Hadoop is still evolving. There is much vulnerability found in Hadoop, which can question the security of the sensitive information that enterprises are storing on it. In this paper, security issues associated with the framework have been identified. We have also tried to give a brief overview of the currently available solutions and what are their limitations. At the end a novel method is introduced, which can be used to eliminate the found vulnerabilities in the framework. In the modern era, information security has become a fundamental necessity for each and every individual. However, not everyone can afford the specialized distributions provided by different vendors to their Hadoop cluster. This paper presents a cost-effective technique that anyone can use with their Hadoop cluster to give it 3-D security. © 2013 IEEE.

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

36) Mishra, A.<sup>a</sup>, Kumar, G.V.N.<sup>b</sup>

**A risk of severity based scheme for optimal placement of interline power flow controller using composite index**  
(2017) *International Journal of Power and Energy Conversion*, 8 (3), pp. 257-275.

**DOI:** 10.1504/IJPEC.2017.084911

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#### **Abstract**

Due to massive increase in the power transactions due to restructuring, the stress in transmission lines has increased largely and severity assessment is very essential. Contingency assessment of a power system predicts the effect of outages in transmission lines and generator units. In this paper, contingency ranking of the lines has been done using composite severity index. A risk-based strategy has been adopted for the placement of interline power flow converter (IPFC). From the list of the severe lines obtained, IPFC is placed on the line which has highest possibility of severity during the occurrence for different outages. To verify the proposed methodology, it is implemented on IEEE 30 and Indian Utility 62 bus systems. The load on the bus with highest load is further increased gradually up to the critical value and the results have been presented and analysed to ascertain the effectiveness of IPFC for contingency management. Copyright © 2017 Inderscience Enterprises Ltd.

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

37) Mishra, A.<sup>a</sup>, Kumar, G.V.N.<sup>b</sup>

**A risk of severity based scheme for optimal placement of interline power flow controller using composite index**  
(2017) *International Journal of Power and Energy Conversion*, 8 (3), pp. 257-275.

**DOI:** 10.1504/IJPEC.2017.10003636

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<sup>b</sup> Department of EEE, Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh, India

#### **Abstract**

Due to massive increase in the power transactions due to restructuring, the stress in transmission lines has increased largely and severity assessment is very essential. Contingency assessment of a power system predicts the effect of outages in transmission lines and generator units. In this paper, contingency ranking of the lines has been done using composite severity index. A risk-based strategy has been adopted for the placement of interline power flow converter (IPFC). From the list of the severe lines obtained, IPFC is placed on the line which has highest possibility of severity during the occurrence for different outages. To verify the proposed methodology, it is implemented on IEEE 30 and Indian Utility 62 bus systems. The load on the bus with highest load is further increased gradually up to the critical value and the results have been presented and analysed to ascertain the effectiveness of IPFC for contingency management. © 2017 Inderscience Enterprises Ltd.

**Document Type:** Article  
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**Source:** Scopus

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Reviews

## Documents

Reddy, M.K.<sup>a</sup> , Srinivasa Rao, P.<sup>b</sup> , Laxmi Lydia, E.<sup>c</sup>

### **A review on big data analytics and clustering algorithms**

(2017) *Journal of Advanced Research in Dynamical and Control Systems*, 9 (6), pp. 24-31.

<sup>a</sup> Indo US Collaboration for Engineering Education (IUCEE), Hyderabad, India

<sup>b</sup> Department of Computer Science and Systems Engineering, A.U College of Engineering, Andhra University Andhra Pradesh, India

<sup>c</sup> Department of Computer Science and Engineering, Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh, India

### **Abstract**

A ubiquitous term Big data is a known to whole world. In this gigantic world we have huge amounts of data that can be related to different fields i.e., scientific research, economical, business, mathematical, mechanical, biological fields etc. In each field the ways of representation of these data can be of various types or formats (graphs, diagrams, text, images, coding, algorithmic, flow charts, numerical etc). So to maintain these varieties of information and to have an outlook of these historical to present data we want the Big data analytic which plays a key role in every aspect of lives. As it is scalable, accurate, fast accessible it got viral over social media. Even though it got famous many of us doesn't have deep idea of it. This paper describes an overview of different looks of big data architecture also different technologies that are possibly applied along with its usage. As this is openly available many security related aspects arise and which focuses at even the management, security aspects along with some main advantages of big data briefly. The paper also focuses on various clustering mechanism which can be implemented to analysis the big data, in order to provide effective solutions in the gigantic world. © 2017, Institute of Advanced Scientific Research, Inc. All rights reserved.

**Document Type:** Review

**Publication Stage:** Final

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## Conference Papers

## Documents

- 1) Venkateswara Rao, B.<sup>a</sup>, Kumar, G.V.N.<sup>b</sup>, Chowdary, D.D.<sup>c</sup>, Bharathi, M.A.<sup>d</sup>, Patra, S.<sup>b</sup>

**Voltage stability index based optimal placement of static VAR compensator and sizing using Cuckoo search algorithm**

(2017) *AIP Conference Proceedings*, 1859, art. no. 020038, .

**DOI:** 10.1063/1.4990191

<sup>a</sup> Department of EEE, V R Siddhartha Engineering College (Autonomous), Vijayawada, Andhra Pradesh, India

<sup>b</sup> Department of EEE, Vignan Institute of Information Technology, Visakhapatnam, India

<sup>c</sup> Department of EEE, Dr. L. Bullayya Engg. College for Women, Visakhapatnam, India

<sup>d</sup> Department of EEE, Sir C R R College of Engineering, Eluru, India

**Abstract**

This paper furnish the new Metaheuristic algorithm called Cuckoo Search Algorithm (CSA) for solving optimal power flow (OPF) problem with minimization of real power generation cost. The CSA is found to be the most efficient algorithm for solving single objective optimal power flow problems. The CSA performance is tested on IEEE 57 bus test system with real power generation cost minimization as objective function. Static VAR Compensator (SVC) is one of the best shunt connected device in the Flexible Alternating Current Transmission System (FACTS) family. It has capable of controlling the voltage magnitudes of buses by injecting the reactive power to system. In this paper SVC is integrated in CSA based Optimal Power Flow to optimize the real power generation cost. SVC is used to improve the voltage profile of the system. CSA gives better results as compared to genetic algorithm (GA) in both without and with SVC conditions. © 2017 Author(s).

**Publisher:** American Institute of Physics Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 2) Raghu Ram, K.S., Bandi, S.R.S., Krishna, Ch.S.

**Mechanical behaviour of alumina silicon carbide reinforced particulate reinforced metal matrix composite**

(2017) *IOP Conference Series: Materials Science and Engineering*, 225, art. no. 012181, .

**DOI:** 10.1088/1757-899X/225/1/012181

Vignan's Institute of Information Technology, Visakhapatnam, A.P, India

**Abstract**

The present study was aimed at evaluating the effect of hardness and impact strength of Aluminum Al<sub>2</sub>O<sub>3</sub>SiC particulate reinforced Composites. These AMCs with multiple reinforcement (hybrid MMCs) are finding increased applications in aerospace, automobile, space, underwater and transportation applications. An effort is made to enhance the Hardness, flexural strength and Impact properties of AMCs by reinforcing Aluminum matrix with Varying Proportion of small particles of Al<sub>2</sub>O<sub>3</sub>SiC by stir casting method. Aluminum alloy matrix varying proportions of Al<sub>2</sub>O<sub>3</sub>SiC particulates were fabricated. The microstructure, hardness and impact strength properties of the fabricated AMCs were analyzed. The optical microstructure study revealed the homogeneous dispersion of Al<sub>2</sub>O<sub>3</sub>SiC particles in the matrix. Based on the results obtained from the Hardness and Impact of the metal matrix composites it is observed that, the hardness and impact strength increases with increase in the amount of reinforcement content. © 2017 Institute of Physics Publishing. All rights reserved.

**Publisher:** Institute of Physics Publishing

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

3) Aditya, J.<sup>a</sup>, Harshita, V.<sup>b</sup>, Vaddi, R.<sup>a</sup>

**Exploiting characteristics of steep slope tunnel transistors towards energy efficient and reliable buffer designs for IoT SoCS**

(2017) *Communications in Computer and Information Science*, 711, pp. 259-269.

DOI: 10.1007/978-981-10-7470-7\_26

<sup>a</sup> Nano Scale Integrated Circuits and Systems for Self-Powered IoT Laboratory, DSPM International Institute of Information Technology, Naya Raipur, Chattishgarh 493661, India

<sup>b</sup> Electronics and Communication Engineering, Vignan's Institute of Information Technology, Visakhapatnam, India

**Abstract**

Energy efficient buffer circuits enable high speed and reliable information transfer among sub-systems of System on Chip (SoC). A novel buffer circuit design exploiting the steep slope characteristics of tunnel FETs (TFET) has been proposed and benchmarked with 20nm Si FinFET technology. The analysis is performed considering the parameters such as iso-area, iso-energy, iso-speed and noise margins for energy efficiency and reliability. It is clearly evident that TFET buffers exhibit improved speed of operation and high energy efficiency over FinFET buffers for scaled supply voltages, demonstrating suitability for applications such as Internet of things (IoT) SoCs. To further exemplify the buffer circuit performance, TFET/FinFET pass transistor based full adder carry circuit is implemented whose output load is driven by TFET/FinFET buffer. Unlike FinFET buffer circuits, TFET buffers prove to be reliable and energy efficient in driving larger loads despite the area overhead caused due to the unidirectional current conduction of TFETs. © Springer Nature Singapore Pte Ltd 2017.

**Publisher:** Springer Verlag

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

4) Suresh, M.<sup>a</sup>, Sirish, T.S.<sup>b</sup>, Subhashini, T.V.<sup>c</sup>, Daniel Prasanth, T.<sup>a</sup>

**Load flow analysis of distribution system using artificial neural networks**

(2017) *Advances in Intelligent Systems and Computing*, 515, pp. 515-524.

DOI: 10.1007/978-981-10-3153-3\_51

<sup>a</sup> Vignan's Institute of Information Technology, Visakhapatnam, India

<sup>b</sup> Gayatri Vidya Parishad College of Engineering (A), Visakhapatnam, India

<sup>c</sup> Anil Neerukonda Institute of Technology and Sciences, Visakhapatnam, India

**Abstract**

In distribution system to determine static states at each node or bus and operating conditions, the load flow studies are very crucial. The load flow studies are very important, not only in finding static states but also during distribution system planning and its extension. In this paper, the load flow problem has been solved by artificial neural networks and these networks are efficient to describe the relation involved within the raw data. Two types neural networks are proposed to solve load flow problem of a distribution system, first one is Radial Basis Function Neural Network (RBFN) and other one is Multilayer Feedforward Neural Network with Backpropagation Algorithm (MFFN with BPA). The mathematical model of distribution load flow comprises a set of nonlinear algebraic equations that are solved using network topology-based distribution load flow which is usurped as reference off-line load flow. A series of training data is generated using off-line load flow, which is used to train the neural networks. The training data consists of different loading conditions and voltages corresponding to each and every node in the distribution system. The neural networks are trained with series of training data and tested with a loading which is not present in training data. Results obtained from two neural networks closely agrees with the reference off-line load flow result of same loading. The results of neural networks are compared together and computational time of two neural networks is considerably small. © Springer Nature Singapore Pte Ltd. 2017.

**Publisher:** Springer Verlag

**Document Type:** Conference Paper

**Publication Stage:** Final

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*Source: Scopus database*



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<b>Document Type</b>	<b>Number of papers</b>
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Articles

## Documents

- 1) Ananth, D.V.N.<sup>a</sup> , Kumar, G.V.N.<sup>b</sup>

**Design of DFIG Converters to Overcome Grid Faults Using Improved Stator Flux Based Field Oriented Control and STATCOM Controller**

(2018) *Technology and Economics of Smart Grids and Sustainable Energy*, 3 (1), art. no. 12, .

DOI: 10.1007/s40866-018-0049-6

<sup>a</sup> Department of EEE, RAGHU Institute of Technology, Visakhapatnam, India

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**Abstract**

The doublyfed induction generator based wind energy conversion system is attracting the energy production market for the last decade. It is due to the facts like large rating single unit, withstand to grid disturbances, independent real and reactive power flow control and mainly low power converter ratings. However, under severe short circuit faults, the doubly fed induction generator (DFIG) is constrained to be in synchronism with the grid as is posed by the modern grid codes. For this, dynamic and transient response of DFIG converter unit control needs to be modified for sustainability and reliability. The article will show that DFIG will follow better grid code requirements using proposed improved stator flux based field oriented control scheme in Rotor Side Converter. Further, a three levels STATCOM controller is externally placed near the grid point to further increase its capability under transients. This can be achieved by minimizing DC offset currents to zero by controlling stator flux decay during transients. The stator d and q axis flux wave is circular during steady state and also deviate its shape and characteristics during transients. This feature is restored using proposed FOC technique and helps in maintaining a minimum voltage and current in rotor and stator circuit. This technique not only improves LVRT but also ensures a longer lifetime of the machine during major disturbances. © 2018, Springer Nature Singapore Pte Ltd.

**Publisher:** Springer

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 2) Padhi, S.N.<sup>a</sup> , Ram, K.S.R.<sup>b</sup> , Kamal, A.S.N.<sup>b</sup> , Krishna, C.S.R.<sup>b</sup> , Rao, B.N.D.<sup>b</sup>

**Characterization and electrical conductivity of ionic oxide nano films by Dc and Ac methods**

(2018) *ARPJ Journal of Engineering and Applied Sciences*, 13 (24), pp. 9737-9740.

<sup>a</sup> Koneru Lakshmaiah deemed to be University Vijayawada, India

<sup>b</sup> Vignan's Institute of Information Technology, Visakhapatnam, India

**Abstract**

We report here the ionic conductivity characteristics of single crystal of Yttria Stabilized Zirconia (YSZ) < 100 > . The targets of YSZ of one-inch diameter and about 2-3 mm thickness were palletized and sintered in the range of 1000- 15000 C for 2-4 hours in air. These targets were polished up to 1000 emery paper cleaned in an ultrasonic bath containing methanol. The ionic conductivity was measured using both AC impedance spectroscopy and DC four probe technique. An idealized plot for the spectrum of a ceramic oxide specimen with particularly blocking electrodes has been studied. The ionic conductivity of ceramic oxide was compared with YSZ < 100 > .The investigation showed that the advantage of AC method is to separate the bulk, grain boundary and electrode resistance which is not possible by DC method. A single crystal of YSZ < 1 00 > was experimented for ionic conductivity. The ionic conductivity and activation energy of YSZ < 100 > at 973 K were found to be almost same in both DC and AC method which seems to be because of absence of grain boundary. © 2006-2018 Asian Research Publishing Network (ARPJ).

**Publisher:** Asian Research Publishing Network



**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

- 3) SasiKiran, P.<sup>a</sup> , Manohar, T.G.<sup>b</sup>

**UKF based estimation approach for DVR control to compensate voltage swell in distribution systems**  
(2018) *Ain Shams Engineering Journal*, 9 (4), pp. 441-453.

**DOI:** 10.1016/j.asej.2016.02.001

<sup>a</sup> Department of Electrical and Electronics Engineering, Vignan's Institute of Information Technology, DUWADA, Visakhapatnam, Andhra Pradesh, India

<sup>b</sup> Department of Electrical and Electronics Engineering, College of Engineering, S.V. University, Tirupathi, Andhra Pradesh, India

**Abstract**

The Dynamic Voltage Restorer (DVR) is identified as the best solution for mitigation of voltage sag and swell related problems in the much tapped distribution system. The compensation performance of the DVR very much depends on its control algorithm. In the paper, an estimation method based on Unscented Kalman Filter (UKF) is proposed for mitigating the voltage swell concern. The proposed UKF based estimation technique is used to assist the control algorithm for generating reference signals of Voltage Source Converter (VSC) of DVR. DVR presents the compensation voltage as output which is included in the connected line. With this estimation method, voltage swell issues are discovered with accuracy and faster performance to retract out the swell problem in sensitivity load linked distribution systems. In MATLAB/Simulink platform the suggested method is executed and its performance is assessed and contrasted with the Linear Kalman Filter (LKF) and Extended Kalman Filter (EKF). © 2016

**Publisher:** Ain Shams University

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

- 4) Varadala, A.B.<sup>a</sup> , Gurugubelli, S.N.<sup>b</sup> , Bandaru, S.<sup>c</sup>

**Equal-channel angular extrusion of Al 5083 alloy with copper shielding**  
(2018) *Emerging Materials Research*, 7 (4), pp. 227-232.

**DOI:** 10.1680/jemmr.18.00043

<sup>a</sup> Department of Mechanical Engineering, Vignan's Institute of Engineering for Women, Visakhapatnam, India

<sup>b</sup> Department of Metallurgical Engineering, Jawaharlal Nehru Technological University, Kakinada-University College of Engineering Vizianagaram, Vizianagaram, India

<sup>c</sup> Department of Mechanical Engineering, Vignan's Institute of Information Technology, Visakhapatnam, India

**Abstract**

The microstructural homogeneity, hardness and tensile strength of aluminium alloy 5083, with and without copper shielding (CS), processed by equal-channel angular extrusion (ECAE) are investigated in this work. The two opposite longitudinal faces of the rectangular billets are shielded with copper sheets of various thicknesses (1.0, 1.5, 2.0 and 2.5 mm) and ECAE'd at room temperature in route A (no rotation of billet) up to four times. The required extrusion load is drastically reduced due to the smaller coefficient of friction between the CS and channels of the steel die. The shielded copper reduces the effect of the dead metal zone and microcracks and improves strain uniformity in the extruded alloy. The hardness and tensile strength of the extruded alloy with CS are increased extensively due to newly formed submicron-sized grains in the homogeneous structure. Also, the ductility of ECAE'd alloy with CS is higher compared to that of the alloy extruded without shielding. It is noticed that the increase in the thickness of CS does not have a noteworthy effect on the structural and mechanical behaviour of the extruded alloy. © 2018 ICE Publishing: All rights reserved.

**Publisher:** ICE Publishing

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

- 5) Muniraju, C.B.<sup>a</sup>, Muniswamy, V.<sup>a</sup>, Yellaeswara Rao, K.<sup>b</sup>, Krishnaswamy, N.<sup>a</sup>

**Modeling of enhancement effect of moth-eye antireflective coating on organic light-emitting diode**

(2018) *Journal of Nanophotonics*, 12 (4), art. no. 046021, .

**DOI:** 10.1117/1.JNP.12.046021

<sup>a</sup> Sai Vidya Institute of Technology, Department of ECE, Rajanukunte, Bengaluru, Karnataka, India

<sup>b</sup> Vignan's Institute of Information Technology, Department of Physics, Vishakapatnam, Andhra Pradesh, India

**Abstract**

A moth-eye antireflective coating (M-ARC) on the surface of a glass substrate is reported for enhanced efficiency of an organic light-emitting diode (OLED). The M-ARC reflects the light trapped in the substrate modes of the device. Fresnel's theory was applied to study the reflection and absorption of light on the M-ARC. The effect of the M-ARC on the OLED for light out-coupling efficiency was analyzed using the finite-difference time-domain method. The improvement in light extraction efficiency of the OLED was optimized by investigating the parameters of pitch, thickness, refractive indices, and height of the M-ARC. The enhancement in peak extraction efficiency of the moth-eye-based OLED as a function of wavelength is ~3.0 compared to conventional OLEDs. © 2018 Society of Photo-Optical Instrumentation Engineers (SPIE).

**Publisher:** SPIE

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 6) Adari, J.<sup>a</sup>, Gadi, V.S.K.R.<sup>b</sup>, Gundavarapu, V.N.K.<sup>c</sup>

**Mitigation of field stress with metal inserts for cone type spacer in a gas insulated busduct under delamination**

(2018) *Engineering Science and Technology, an International Journal*, 21 (5), pp. 850-861.

**DOI:** 10.1016/j.jestch.2018.06.018

<sup>a</sup> Department of EEE, GITAM University, Visakhapatnam, India

<sup>b</sup> Department of EEE, Andhra University, Visakhapatnam, India

<sup>c</sup> Department of EEE, Vignan's Institute of Information Technology, Visakhapatnam, India

**Abstract**

Increased power demand and energy density in cities resulted in the establishment of Gas insulated systems (GIS) as a substitute for the conventional air-insulated substations. Reliable and efficient design of the modules in GIS has been a major concern for the power engineers. Major dielectric strength breakdown and surface flashover causes were reported due to insulator failures like excessive field enhancements at the triple point junction formed by the electrode-gas-insulator interface. The insight of reducing the field along the surface of the spacer exhaustive field study was carried out on a conical spacer. Initially, a field study was carried out with a normal type spacer then extended to a molded spacer done with various shapes to obtain an optimal field spread. This Shape control may sometimes lead to very uneven shapes. Further, a functional graded material (FGM) is designed for the standard cone type spacer to obtain uniform field stress along the surface of a spacer to overcome the above problem. The grading of the spacer is done with different permittivities. Electric field is computed for different cases of graded spacers and Tuned Metal inserts and recessed electrodes were also imbedded in the spacer geometry for a better field distribution. The work was validated by comparing the optimal mold spacer field distribution with that of the FGM cone type spacer. In spite of proper care taken during the manufacture, working, and maintenance of the spacers several flaws do occur. The delamination effect is considered and similar analysis is carried out and the results are presented and analyzed. © 2018 Karabuk University

**Publisher:** Elsevier B.V.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 7) Daniel, R.<sup>a</sup>, Rao, K.N.<sup>b</sup>

**EEC-FM: Energy efficient clustering based on firefly and midpoint algorithms in wireless sensor network**

(2018) *KSII Transactions on Internet and Information Systems*, 12 (8), pp. 3683-3703.

**DOI:** 10.3837/tiis.2018.08.008

<sup>a</sup> Department of Information Technology, Vignan's Institute of Information Technology Jawaharlal Nehru Technological University-Kakinada, Visakhapatnam, India

<sup>b</sup> Department of Computer Science & Systems Engineering, Andhra University Collège of Engineering (A), Andhra University, Visakhapatnam, India

**Abstract**

Wireless sensor networks (WSNs) consist of set of sensor nodes. These sensor nodes are deployed in unattended area which are able to sense, process and transmit data to the base station (BS). One of the primary issues of WSN is energy efficiency. In many existing clustering approaches, initial centroids of cluster heads (CHs) are chosen randomly and they form unbalanced clusters, results more energy consumption. In this paper, an energy efficient clustering protocol to prevent unbalanced clusters based on firefly and midpoint algorithms called EEC-FM has been proposed, where midpoint algorithm is used for initial centroid of CHs selection and firefly is used for cluster formation. Using residual energy and Euclidean distance as the parameters for appropriate cluster formation of the proposed approach produces balanced clusters to eventually balance the load of CHs and improve the network lifetime. Simulation result shows that the proposed method outperforms LEACH-B, BPK-means, Park's approach, Mk-means, and EECFK-means with respect to balancing of clusters, energy efficiency and network lifetime parameters. Simulation result also demonstrate that the proposed approach, EEC-FM protocol is 45% better than LEACH-B, 17.8% better than BPK-means protocol, 12.5% better than Park's approach, 9.1% better than Mk-means, and 5.8% better than EECFK-means protocol with respect to the parameter half energy consumption (HEC). © 2018 KSII.

**Publisher:** Korean Society for Internet Information

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

8) Varadala, A.B.<sup>a</sup>, Gurugubelli, S.N.<sup>b</sup>, Bandaru, S.<sup>c</sup>

**Equal channel angular extrusion of semicircular AA 5083 covered with copper casing**

(2018) *Emerging Materials Research*, 7 (3), pp. 160-163.

**DOI:** 10.1680/jemmr.18.00026

<sup>a</sup> Department of Mechanical Engineering, Vignan's Institute of Engineering for Women, Visakhapatnam, India

<sup>b</sup> Department of Metallurgical Engineering, Jawaharlal Nehru Technological University Kakinada, University College of Engineering Vizianagaram, Vizianagaram, India

<sup>c</sup> Department of Mechanical Engineering, Vignan's Institute of Information Technology, Visakhapatnam, India

**Abstract**

The microstructural evolution and mechanical behaviour of semicircular AA 5083 billets subjected to equal channel angular extrusion (ECAE), without and with copper casing (CC), are investigated in this work. The semicircular billets, circumferentially covered with and without CC, are extruded up to three passes in route A at room temperature. Even the coarse grain structure of the initial material is significantly refined, the microcracks and the structural defects were observed in the billets extruded without CC due to non-uniform strain distribution. The use of CC on the circumference of the semicircular billets reduces the dead zone effect on the structural homogeneity and minimises the formation of microcracks on the outer periphery of the extruded material. The uniform distribution of the effective strain imposed on the billets ECAE'd with CC enhances the development of equi-axed ultrafine grains at low pressing loads. The newly formed ultrafine grains with a size of few hundreds of nanometres significantly increase the mechanical properties of the ECAE'd AA 5083 with the CC. The obtained results were in good agreement with the earlier reports in which ECAE was carried with back pressure arrangement. © 2018 ICE Publishing: All rights reserved.

**Publisher:** ICE Publishing

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

9) Nageswara Rao, P.<sup>a</sup>, Siva Krishna Rao, G.V.<sup>b</sup>, Nagesh Kumar, G.V.<sup>c</sup>

**A Novel Technique for Controlling Speed and Position of Bearingless Switched Reluctance Motor Employing Sensorless Sliding Mode Observer**

(2018) *Arabian Journal for Science and Engineering*, 43 (8), pp. 4327-4346.

**DOI:** 10.1007/s13369-017-3027-8

<sup>a</sup> EEE Department, GITAM University, Visakhapatnam, India

<sup>b</sup> Department of Electrical Engineering, Andhra University, Visakhapatnam, India

<sup>c</sup> Department of EEE, Vignan's Institute of Information Technology, Visakhapatnam, India

#### Abstract

High-speed motors working in harsh environments such as high temperatures, radiation, and poisonous substances are limited because of motor breakdown due to vibrations of mechanical bearings. The concept of magnetic bearings is an alternative to the issues of slide or ball bearings because of its advantages of friction-free, negligible thermal problems, and lubrication free. Rotor vibration control during start-up, acceleration and deceleration phases are one of the key problems besides stable levitation, in high-speed applications of bearingless switched reluctance motor (BSRM). The use of linear control strategies alone is not effective in suppressing vibration due to residual unbalance and external disturbances. In this paper, a global sliding mode controller (GSMC) is proposed to control the speed and position of BSRM and also sensorless operation with sliding mode observer. In this method, rotor displacement tracking error functions are used in the sliding mode switching functions and the new sliding mode displacement control and speed tracking equations are obtained with an extra exponential fast decaying nonlinear function along with conventional linear sliding mode switching surface. Simulation is carried on 12/14 BSRM with the proposed controller and observer and the results of rotor displacements and speed are presented. In addition to the improvement of performance characteristics when compared to sliding mode controller, GSMC cancels the reaching mode, reduce the chattering, and overcome the disturbance and the time delay. © 2017, King Fahd University of Petroleum & Minerals.

**Publisher:** Springer Verlag

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

10) Ponnada, S.<sup>a</sup>, Srinivas, Y.<sup>b</sup>, Madhusudhana Rao, T.V.<sup>c</sup>

#### **A hybrid approach for identification of manhole and staircase to assist visually challenged**

(2018) *IEEE Access*, 6, art. no. 8402200, pp. 41013-41022.

**DOI:** 10.1109/ACCESS.2018.2852723

<sup>a</sup> Department of Computer Science and Engineering, GITAM Institute of Technology, Visakhapatnam, 530045, India

<sup>b</sup> Department of Information Technology, GITAM Institute of Technology, Visakhapatnam, 530045, India

<sup>c</sup> Department of Computer Science and Engineering, Vignan's Institute of Information Technology, Visakhapatnam, 530046, India

#### Abstract

Recognition of an object is a bare minimum restraint for an individual in order to sort out or classify the type of the object. This situation becomes a tricky experience with respect to the blind persons; therefore, to assist visually challenged persons, in particular, while recognizing the staircases and manholes, a prototype of mobility recognition is presented using the feature vector identification and sensor computed processor Arduino chips. This prototype provides more sovereignty to the sightless people while walking on the roads and helps to pass through on their own without any backing. This prototype is developed using Arduino kit along with feature detection module and helps the visually challenged people toward effective recognition of the obstacles. In order to recognize the manholes, the chip is programmed and embedded in the stick that also holds the code for detection of the staircases based on a bivariate Gaussian mixture model; speeded up robust features algorithm is considered for extraction of features. The developed model shows an accuracy of around 90% for manhole detection and 88% for staircase detection. © 2013 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

11) Siva Rama Krishna, C.H., Kumar, M., Kiran, M., Divya, B.

#### **Analysis of stresses of graphite /epoxy composite plate using HYPERMESH**

(2018) *International Journal of Mechanical and Production Engineering Research and Development*, 8 (3), pp. 375-384.

DOI: 10.24247/ijmperdjun201841

Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh, India

#### Abstract

In recent years, usages of composite materials have progressed in automobile, aerospace industries and it is one of the alternatives for metal materials. This trend is because of their high strength to weight ratio and also it is possible to manufacture components as per required mechanical properties. Therefore the role of stresses is very important in composites. Hence an accurate understanding of their structural behavior is required, such as stresses both normal and shear stresses. Numerical analysis has been carried out for Graphite/Epoxy Composite laminate to find the stresses of a laminated composite plate subjected to axial loads along X & Y directions of the specimen. In the numerical method, the stresses are developed for plies of orientation (00/300/-450) in the laminated composite and simulate the numerical values developed using HYPERMESH 13.0 for validation. This work presents a stress analysis of Graphite/Epoxy laminated composite plate. In the present work, the stress behavior of laminated composite plates under Tensile loading using a four-node element with six degrees of freedom at each node and translations in the x and y directions is done. The static stress analysis includes the all types of stress behavior in diagrammatic form and results are plotted for investigation. In the present study, the modeling is done in HYPERMESH 13.0. The study investigations were carried on plates starting with three layers of the top location of 00 angle -ply laminated composite plates at the clamped boundary condition. This work also contains, a number of Finite element analyses carried out for various aspect ratios and modulus ratios to study the effect of stresses of laminated composite plates subjected to tensile load. The HYPERMESH results showed, on the stresses. The effect of increasing the aspect ratio is to decrease the stresses. The composite plate has been analyzed various modulus ratios and their effects on stresses so as to find the optimized conditions. © TJPRC Pvt. Ltd.

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- 12) Siva Ramakrishna, C.H., Ganesh, M.R., Rao, R.V., Dharmateja, P.

#### Residual stresses analysis of laminated graphite/epoxy composite plates using HYPERMESH

(2018) *International Journal of Mechanical and Production Engineering Research and Development*, 8 (3), pp. 247-256.

DOI: 10.24247/ijmperdjun201828

Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh, India

#### Abstract

The structures made of laminated composites are used in various engineering applications like in military, aerospace and automotive Industries. To design the composite, the precision learning of structural behavior is required. In this connection, estimation of residual stresses is an important criterion for predicting the behavior of laminated composite. Residual stresses are developed when the laminate is subjected to temperature change. The residual stresses of the composite laminate are estimated by considering the temperature change of -75° on the specimen and analytical method is used for the same. In the analytical method, the stresses are developed for piles of orientation (0° /90°) in the laminated composite and simulate the analytical values with numerical analysis is developed for validation. This study aims to examine the residual stresses of the Graphite/Epoxy layer composite through analytical and simulated methods using HYPERMESH. The residual stress analysis includes all the types of stress behavior in diagrammatic form and results are developed. For validation, the simulated values and the analytical values are compared with the required accuracy. © TJPRC Pvt. Ltd.

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- 13) Parvatheeswara Rao, B.<sup>a</sup>, Dhanalakshmi, B.<sup>a b</sup>, Ramesh, S.<sup>c</sup>, Subba Rao, P.S.V.<sup>a</sup>

#### Cation distribution of Ni-Zn-Mn ferrite nanoparticles

(2018) *Journal of Magnetism and Magnetic Materials*, 456, pp. 444-450.

DOI: 10.1016/j.jmmm.2018.02.086

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**Abstract**

Mn substituted Ni-Zn ferrite nanoparticles, Ni<sub>0.4</sub>Zn<sub>0.6-x</sub>Mn<sub>x</sub>Fe<sub>2</sub>O<sub>4</sub> ( $x = 0.00-0.25$  in steps of 0.05), using metal nitrates were prepared by sol-gel autocombustion in citric acid matrix. The samples were examined by X-ray diffraction and vibrating sample magnetometer techniques. Rietveld structural refinements using the XRD data were performed on the samples to consolidate various structural parameters like phase (spinel), crystallite size (24.86–37.43 nm), lattice constant (8.3764–8.4089 Å) etc and also to determine cation distributions based on profile matching and integrated intensity ratios. Saturation magnetization values (37.18–68.40 emu/g) were extracted from the measured M–H loops of these nanoparticles to estimate their magnetic moments. Experimental and calculated magnetic moments and lattice constants were used to confirm the derived cation distributions from Rietveld analysis. The results of these ferrite nanoparticles are discussed in terms of the compositional modifications, particle sizes and the corresponding cation distributions as a result of Mn substitutions. © 2018 Elsevier B.V.

**Publisher:** Elsevier B.V.

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**Publication Stage:** Final  
**Source:** Scopus

- 14) Rao, G.V.V.R.<sup>a</sup>, Mukund, D.<sup>b</sup>, Pratap Das, R.<sup>c</sup>

**Modified wenner method for demarcation of saline belt 3-D projection**

(2018) *International Journal of Civil Engineering and Technology*, 9 (6), pp. 938-943.

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**Abstract**

Saline intrusion is a big challenge for the coastal terrains. As the bore wells are increasing and the output of rivers is decreasing, salt water of the sea is entering into the fresh water aquatics. There is a great need of studying the saline belt by demarcate the areas. © IAEME Publication.

**Publisher:** IAEME Publication

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

- 15) Bali, S.K.<sup>a</sup>, Munagala, S.<sup>b</sup>, Gundavarapu, V.N.K.<sup>c</sup>

**Optimal utilization of generators using harmony search algorithm for the management of contingency**

(2018) *International Journal of Innovative Computing, Information and Control*, 14 (3), pp. 1159-1168.

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**Abstract**

In the modern world totally dependent on electric power, stable operation of the electrical system is absolutely necessary. Hence, optimal utilization of the existing power resources has become absolutely necessary. In this work, a procedure of optimal tuning of generators with harmony search algorithm in the existence of UPFC has been presented. The UPFC has been placed based on an index which is a composition of L-index and LUF index. A multi objective function has been chosen for tuning the generators. The multi-objective function consists of voltage deviation, generation cost and power loss.

The presented technique has been examined and implemented on an IEEE 30 bus system for normal and for contingency condition. © 2018, ICIC International. All rights reserved.

**Publisher:** ICIC International

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 16) Dhanalakshmi, B.<sup>a</sup>, Kollu, P.<sup>b c</sup>, Barnes, C.H.W.<sup>c</sup>, Parvatheeswara Rao, B.<sup>d</sup>, Rao, P.S.V.S.<sup>d</sup>

**Multiferroic and magnetoelectric studies on BMFO–NZFO nanocomposites**

(2018) *Applied Physics A: Materials Science and Processing*, 124 (5), art. no. 396, .

**DOI:** 10.1007/s00339-018-1820-1

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**Abstract**

Bismuth ferrite-based multiferroic composites,  $x\text{-Bi}_0.95\text{Mn}_0.05\text{FeO}_3 - (1 - x)\text{-Ni}_0.5\text{Zn}_0.5\text{Fe}_2\text{O}_4$ , where  $x$  takes the values of 0.2, 0.4, 0.5, 0.6 and 0.8, have been prepared by combining sol–gel autocombustion and solid-state methods. Phase identification of the samples was done by X-ray diffraction analysis. SEM–EDX measurements on the samples were used to evaluate the microstructural aspects and quantitative evaluation of the samples. Room temperature P–E loop measurements on the samples were done under the application of external electric fields in the range from 0 to 6 kV/mm at a frequency of 50 Hz to understand the ferroelectric strength of the compounds. Magnetic studies on the samples were made by M–H loop measurements in the field range of  $\pm 10$  kOe. Magnetoelectric coupling measurements were made using a dynamic lock-in test set-up. The results indicate that the mixing of nickel–zinc ferrite in  $\text{Bi}_0.95\text{Mn}_0.05\text{FeO}_3$ , in spite of the enhanced conductivity, has produced considerable improvements in saturation magnetization while retaining the remnant ferroelectric polarization in reasonable magnitudes to obtain improved M–E coupling. Among all the composites, the composite with  $x = 0.5$  has resulted better M–E performance. © 2018, Springer-Verlag GmbH Germany, part of Springer Nature.

**Publisher:** Springer Verlag

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 17) Sobhan, P.V.S.<sup>a</sup>, Nagesh Kumar, G.V.<sup>b</sup>, Ramana Rao, P.V.<sup>c</sup>

**Rotor levitation and vibration control of hybrid pole BSRM using fuzzy sliding mode controller**

(2018) *International Journal of Innovative Computing, Information and Control*, 14 (2), pp. 671-681.

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**Abstract**

Rotor vibration control during startup, acceleration and deceleration phases is one of key problems besides stable levitation, in high-speed applications of bearingless switched reluctance motor (BSRM). The use of linear control strategies alone is not effective in suppressing vibration due to residual unbalance and external disturbance. This paper presents implementation of a nonlinear control method by integrating the features of fuzzy logic and the sliding mode control (SMC) to minimize the rotor vibration and eccentricity error of BSRM. The application of fuzzy SMC with the independent control of the radial force and rotational force guarantees stable levitation as well as the vibration reduction and the same is demonstrated with experimental results. © 2018 ICIC INTERNATIONAL.

**Publisher:** ICIC International

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 18) Sravana Kumar, B.<sup>a</sup>, Suryakalavathi, M.<sup>b</sup>, Nagesh Kumar, G.V.<sup>c</sup>

**Thyristor controlled series compensator based optimal reallocation of generators for contingency management**

(2018) *ECTI Transactions on Electrical Engineering, Electronics, and Communications*, 16 (1), pp. 30-38.

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**Abstract**

Privatization of the power industry has made proper utilization of the available resources a compulsory requirement. Optimal power flow (OPF) is an ideal solution to the problem. At the same time, stable operation of the power systems in both normal and contingency condition is of vital importance. Use of FACTS devices is a good method to stop further contingencies in the power system. In this paper, a combined index based strategy for the optimal placement of Thyristor Controlled Series Compensator (TCSC) and optimal tuning of generators using Krill Herd Algorithm has been proposed for contingency management. The contingency analysis has been done using a new method, namely, rapid contingency ranking technique (RCRT). The TCSC has been placed on the basis of an index which is a combination of Line Utilization Factor (LUF) and Fast Voltage Stability Index (FVSI). A multi objective function has been chosen for tuning the generators. The multi-objective function includes voltage deviation, active power generation cost and transmission line loss. The proposed method has been tested and implemented on an IEEE 30 bus system. © 2018, ECTI Association. All rights reserved.

**Publisher:** ECTI Association

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 19) RamaKrishna, C.S., SubbaRao, K.V., Arji, S.

**Geometrical behavior of laminated graphite/epoxy composite using hypermesh**

(2018) *International Journal of Engineering and Technology(UAE)*, 7 (2.20 Special Issue 20), pp. 214-218.

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**Abstract**

The laminated composite material is made of ply which are specially used in automotive, aerospace and military applications due to less in weight and high strength to weight ratio. The role of structural strength is very important in composites, as the material is weak in inherent strength leads to damage of equipment made with the laminated composite. Hence, an accurate understanding of their structural geometrical behavior for residual stresses is required, such as residual stresses with different aspect ratios. In present work, various aspect ratios of laminated composite and its residual stresses are investigated using finite element analysis. The numerical results showed, on the residual stresses, that the effects the change the residual stresses due change of aspect ratio of laminated Graphite/epoxy composite. © 2018 Authors.

**Publisher:** Science Publishing Corporation Inc

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 20) Nagesh Kumar, V.<sup>a</sup>, Sravana Kumar, B.<sup>b</sup>, Venkateswara Rao, B.<sup>c</sup>, Sobhan, P.V.S.<sup>d</sup>, Appala Naidu, K.<sup>a</sup>

**Linear programming technique based optimal relay coordination in a radial distribution system**



(2018) *International Journal of Engineering and Technology(UAE)*, 7 (1.8), pp. 51-55.

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#### Abstract

Now-a-days to ensure power continuity and system's reliability the protection system is to be designed properly for distribution systems to handle the faults to avoiding the damage to the equipments and to the service engineers. Different types of relays with different work-ing principles are used to detect different types of faults in the system. In order to avoid mal operation of relays, proper coordination is to be carried out. The objective of this paper is to maintain the relay coordination as well as to decrease the working time of relays by opti-mizing the values of time dial setting (TDS) using linear programming problem technique (LPP). The inequality constraints guarantee the coordination margin for each primary or backup relay pairs having a fault very close to the primary relay. Simulation is carried out on a IEEE 15 bus balanced radial distribution system with 3 different types of relays namely standard inverse, extremely inverse and very inverse relay and the results are presented and analyzed. © 2018 G. V. Nagesh Kumar et al.

**Publisher:** Science Publishing Corporation Inc

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**Source:** Scopus

- 21) Sobhan, P.V.S.<sup>a</sup> , Nagesh Kumar, G.V.<sup>b</sup> , Ramana Rao, P.V.<sup>c</sup>

#### Rotor suspension and stabilization of bearingless SRM using sliding mode controller

(2018) *International Journal of Engineering and Technology(UAE)*, 7 (1.8 Special Issue 8), pp. 214-218.

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#### Abstract

Motors working in extreme conditions such as ultra high and low temperatures, high contamination, high purity etc. require high maintenance of mechanical bearings and the regular lubrication. Hence there is a need of a motor without mechanical bearings and lubrication in addition to simple in control and less maintenance. There by, bearingless motors (BLMs) gain more attention. The bearingless switched reluctance motor's (BLSRM) is simple in construction and economical in addition to high speed capacity and high torque to inertia ratio. The magnetic nonlinearity arising due to double salient structure makes rotor eccentric displacement control and speed regulation complicate and needs robust control methodology such as sliding mode control (SMC) which has integrity, high certainty and rapid dynamic response when compared to typical controllers. Sliding mode can be realized with distinct classical reaching laws. This paper presents design and implementation of a SMC for a 12/14 BLSRM and the dynamic performance is endorsed by simulation using Matlab software. © 2018 Authors.

**Publisher:** Science Publishing Corporation Inc

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 22) Shariff, V.<sup>a</sup> , Ruth Ramya, K.<sup>b</sup> , Devi, B.B.<sup>c</sup> , Bhattacharyya, D.<sup>d</sup> , Kim, T.-H.<sup>e</sup>

#### A survey on existing IP trace back mechanisms and their comparisons

(2018) *International Journal of Engineering and Technology(UAE)*, 7 (1.8), pp. 67-71.

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### Abstract

Security is the one of the main point of focus in recent trends of computer science, as it has to determine the right people accessing the system and ones who are trying the bypassing it. IP spoofing is one of the prevalent attacks, where the attackers launch the attack by spoofing the source address, once this happens they can attack without revealing their exact location. The attacker uses a fraudulent IP address to conceal their identity. To reveal the attackers real locations many IP trace back mechanisms have been proposed but the at-tacker immediately gets away with the information. There is another problem which is to detect DDoS traffic and the precarious packets set up by the attacker, which are a threat to the victim as well as the whole network, here lies another hurdle which is to differentiate between the attacker's data traffic from the normal data traffic. There are many solutions given for this but one among them is IP trace back which already has researched upon in the past and implemented then, but what is lacking in the solution such that the attacks are even now taking place. IP trace back if modified, strengthened would analyze the traffic faster and trace out the attacker with a faster pace, which is why a hybrid IP tracing and tracking mechanism if introduced could ease the current problem. © 2018 Vahiduddin Shariff et al.

**Publisher:** Science Publishing Corporation Inc

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**Source:** Scopus

- 23) Sobhan, P.V.S.<sup>a</sup>, Nagesh Kumar, G.V.<sup>b</sup>, Ramana Rao, P.V.<sup>c</sup>

**Rotor autocentering and speed control of hybrid bearingless SRM using single-neuron adaptive PID controller**  
(2018) *International Journal of Engineering and Technology(UAE)*, 7 (1.8), pp. 103-107.

<sup>a</sup> Department of EEE, VFSTR, Guntur, India

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### Abstract

The bearingless switched reluctance motor (BLSRM) is emerging as an attractive option for modern industrial applications because of the features, such as compact size, lubrication and seal free performance, long life and ability to rotate at very high speed and high power. The control approach is extremely fundamental to a steady operation because of its highly nonlinear, multi variable and open loop unsta-ble nature. This paper presents a single neuron based rotor suspension control of a 12/14 Hybrid Pole BLSRM with autonomous rotation and suspension poles. This hybrid pole structure produces the suspension force linearly with respect to rotor position and independent of the torque characteristics. Implementation of a non model based Single neuron adaptive PID Controller by avoiding the modeling com-plexity is proposed. Experimental results demonstrate that the proposed controller maintains the rotor in the center position as well as the speed tracking and disturbance elimination performances independently. © 2018 Polamraju. V. S. Sobhan et al.

**Publisher:** Science Publishing Corporation Inc

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**Publication Stage:** Final

**Source:** Scopus

- 24) Krishna, I.M.<sup>a</sup>, Narsimham, C.<sup>b</sup>, Chakravarthy, A.S.N.<sup>c</sup>

**A novel feature selection based classification model for disease severity prediction on alzheimer's database**  
(2018) *Journal of Advanced Research in Dynamical and Control Systems*, 10 (4), pp. 245-255.

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### Abstract

In the current era, research on automatic image classification on high dimensional medical disease databases is growing rapidly. Since most of the Alzheimer's disease databases have heterogeneous features with different levels of severity patterns. Detection and classification of high risk patterns has many potential benefits for decision making. Traditional image classification models such as Naïve Bayesian, Neural Networks, SVM, Regression models, etc are used to classify the image using the annotated ROI and image texture features. As the size of the Alzheimer's disease patterns and its categories are increasing, traditional data classification models are failed to process the disease patterns due to class imbalance, inconsistent, and sparsity issues, which may affect the disease prediction rate and error rate. Unlike the existing solutions, which require a prior knowledge of classification parameters for various types of image features, which is not possible to obtain in practice. Also, as the size of the training images increases, it becomes difficult to find the relevant features using the image features and ROI values. In this proposed model, a novel filtered based automatic Alzheimer's disease classification model is proposed to improve the disease prediction rate and to minimize the error rate of the classification model. Experimental results show that the proposed model has high prediction rate compared to the traditional models in terms of true positive rate and error rate are concerned. © 2018, Institute of Advanced Scientific Research, Inc.. All rights reserved.

**Publisher:** Institute of Advanced Scientific Research, Inc.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 25) Laxmi Lydia, E.<sup>a</sup>, Vijaya Kumar, K.<sup>b</sup>, Amaranatha Reddy, P.<sup>c</sup>, Ramya, D.<sup>d</sup>

**Text mining with hadoop: Document clustering with TF\_IDF and measuring distance using euclidean**  
(2018) *Journal of Advanced Research in Dynamical and Control Systems*, 10 (14 Special Issue), pp. 1784-1792.

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### Abstract

Considering huge amount of data in the existing globe, lot of various Data Mining algorithms have become more essential for computations which increases the use of applicational areas desperately. Furthermore, the dimensional space of the data in different fields often creates a problem in machine learning algorithms. With the Dimensional increase in data have a negative impact on supervised and unsupervised techniques. In this paper, the features are examined efficiently. The main goal is to achieve the term weight in the document by measuring its similarity based on TF-IDF with all positive values without any negative values and Euclidean Distance, also giving continuation for NMF method and K-means clustering. © 2018, Institute of Advanced Scientific Research, Inc.. All rights reserved.

**Publisher:** Institute of Advanced Scientific Research, Inc.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 26) Shireesha, Y.<sup>a</sup>, Venkata Suresh, B.<sup>a</sup>, Sateesh, B.<sup>b</sup>

**Vibration analysis and control of locomotive system**  
(2018) *Mechanics and Mechanical Engineering*, 22 (1), pp. 195-205.

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<sup>b</sup> Department of Mechanical Engineering, Vignan Institute of Information Technology Andhra Pradesh, India

### Abstract

Vibration is an undesirable phenomenon of ground vehicles like locomotives and vibration control of vehicle suspension system is an active subject of research. The main aim of the present work is to modeling and analysis of locomotive system.

The simplified equations for dynamical locomotive are firstly established. Then the dynamical nature of the locomotive without control is investigated, and also active control suspension and passive control suspension are compare and discussed. The obtained simulation shows that suspension of the locomotive with feedback control could decrease the locomotive vibration. According to the above control strategy along with angular acceleration it also reduces the possibility of vibration of the locomotive body, to improves the stability of vehicle operation. © Lodz University of Technology.

**Publisher:** Wydawnictwo Politechniki Lodzkiej

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

- 27) Laxmi Lydia, E.<sup>a</sup>, Govindaswamy, P.<sup>b</sup>, Lakshmanprabu, S.K.<sup>c</sup>, Ramya, D.<sup>d</sup>

**Document clustering based on text mining k-means algorithm using euclidean distance similarity**  
 (2018) *Journal of Advanced Research in Dynamical and Control Systems*, 10 (2 Special Issue), pp. 208-214.

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#### Abstract

Data mining a specific area named text mining is used to classify the huge semi structured data needs proper clustering. Maximum text documents involves fast retrieval of information, arrangement of documents, exploring of information from the documents. Declaration of text input data and classification of the documents is a complex process. The main objective of this paper is to produce a specific open source to class the clusters of identical documents in the interrelated folders and to lower the complexity of locating each document. Algorithms considered are challenges for open research responsibilities. This paper describes the document clustering process based on the clustering techniques, partitioning clustering using K-means and also calculates the centroid similarity and cluster similarity. © 2018, Institute of Advanced Scientific Research, Inc.. All rights reserved.

**Publisher:** Institute of Advanced Scientific Research, Inc.

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

- 28) Sampath Dakshina Murthy, A.<sup>a</sup>, Kumar, P.V.J.R.<sup>b</sup>, Das, R.P.<sup>a</sup>, Koteswara Rao, S.<sup>c</sup>

**Fuzzy logic based technique for propeller noise in mechanical structures**  
 (2018) *International Journal of Engineering and Technology(UAE)*, 7 (2.20 Special Issue 20), pp. 394-395.

**DOI:** 10.14419/ijet.v7i3.6.16010

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#### Abstract

The determination of the propeller of submarines is of great importance particularly when the measurable parameters are not within the reach using the membership function concepts. The paper has a solution of certain conditions which are of practical resolve. © 2018 Authors.

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**Source:** Scopus

- 29) Thirupathi Rao, N.<sup>a</sup> , Madhusudhan Rao, V.<sup>b</sup> , Bhattacharyya, D.<sup>a</sup> , Kim, T.-H.<sup>c</sup>

**Analyzing the performance of DSR protocol on MANET's network models with various scenarios using ViSim**  
(2018) *International Journal of Engineering and Technology(UAE)*, 7 (4), pp. 3190-3194.

**DOI:** 10.14419/ijet.v7i4.19419

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<sup>c</sup> Department of Convergence Security, Sungshin Women's University, Bomun-ro 34da-gil, Seongbuk-gu, Seoul, South Korea

#### **Abstract**

The examination of the effect of MANETs in various applications with the usage of various protocols was important to study the performance of these networks. The DSR protocol was one of the most important protocols in MANETs protocols. Hence, this protocol implementation in these sorts of networks with various numbers of nodes was important. A study has been conducted to study the performance of these networks with various numbers of nodes in the network. The behavior of the network was analyzed with various set of nodes. The analyzing of these networks was done with the help of the ViSim simulator. The number of nodes considered for analyzing the performance of the network was three, ten and twenty nodes. An investigation of the conventions has finished the considered parameters that measure the QoS measurement like end-to-end delay, throughput, jitter, outturn and elective system execution measurements. The considered cases were implemented on three different cases and results were discussed in detail. The results show that the performance of the current considered protocol was excellent in the above considered three scenarios. © 2018N. Thirupathi Rao et. al.

**Publisher:** Science Publishing Corporation Inc

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**Publication Stage:** Final

**Source:** Scopus

- 30) Deepika, K.K.<sup>a</sup> , Shome, P.<sup>b</sup> , Vijaya Kumar, J.<sup>c</sup> , Kesava Rao, G.<sup>d</sup>

**Constrained consensus in hybrid state estimation in wide area monitoring**  
(2018) *Journal of Advanced Research in Dynamical and Control Systems*, 10 (7 Special Issue), pp. 815-824.

<sup>a</sup> Dept. of EEE, Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh, India

<sup>b</sup> Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh, India

<sup>c</sup> Dept. of EEE, ANITS, Visakhapatnam, Andhra Pradesh, India

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#### **Abstract**

The common feature of many monitoring and control applications that will be accommodated in the future Wide Area Monitoring and Control system will be the quasi real time execution, exploiting the fast reporting rate of the Phasor Measurement Unit (PMU). A critical parameter for the timely execution and robust performance of such real time applications is the ability of the algorithm is to estimate the states even in the case of missing of the PMU measurements. The dropouts of the data mainly due to the communication infrastructure and traditional meters, should be quantified and considered to reach a consensus in the process of a real time application. State estimator is crucial for on-line power system monitoring, analysis and control. With the increasing use of synchronized phasor measurement units (PMU) in power grids, how to utilize phasor measurements to improve the precision of state estimator becomes imperative. Since there are lots of traditional measurements in SCADA system and it is hard for phasor measurements to replace them in the near future, the best way is to develop hybrid state estimator which includes both phasor and traditional measurements to get better behavior. In this paper, a novel state estimator for including voltage phasors, branch current phasors and traditional measurements that has a capacity to tackle missing data phenomenon is evaluated. © 2018, Institute of Advanced Scientific Research, Inc.. All rights reserved.

**Publisher:** Institute of Advanced Scientific Research, Inc.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

31) Satyanarayana, V.S.V.<sup>a</sup>, Sateesh, B.<sup>b</sup>, Rao, N.M.<sup>c</sup>

**Parameters optimisation of vehicle suspension system for better ride comfort**

(2018) *International Journal of Vehicle Performance*, 4 (2), pp. 186-199.

**DOI:** 10.1504/IJVP.2018.090956

<sup>a</sup> Department of Mechanical Engineering, Miracle Educational Society, Group of Institutions, Mukkam, Bhogapuram, Vizianagaram Dt., Andhra Pradesh, 535216, India

<sup>b</sup> Department of Mechanical Engineering, Vignan's Institute of Information Technology, Duvvada, Visakhapatnam, Andhra Pradesh, 530046, India

<sup>c</sup> Department of Mechanical Engineering, Jawaharlal Nehru Technological University Kakinada, Kakinada, East Godavari Dt., Andhra Pradesh, 533003, India

**Abstract**

The performance of a vehicle suspension system affects ride comfort and stability of the vehicle which are the two conflicting requirements. A passive vehicle suspension uses a spring and viscous damper to control the performance. In this paper, an efficient method is proposed for determining optimal stiffness and damping coefficient of a vehicle suspension system. A two degree-of-freedom quarter car vehicle model using linear quadratic regulator (LQR) control is established and the response of the model is obtained. The vehicle is considered to travel on the random road with constant velocity and the road roughness profile is modelled as the output of first-order linear filter under white noise excitation. The optimal parameters are obtained for the vehicle by correlating the performance of passive suspension with the fully active suspension using LQR. Results show that the performance of passive suspension using optimal parameters is very close to that of active suspension. © 2018 Inderscience Enterprises Ltd.

**Publisher:** Inderscience Publishers

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

32) Pulivarthi, N.R.<sup>a</sup>, Rao, G.V.S.K.<sup>b</sup>, Kumar, G.V.N.<sup>a c</sup>

**Four quadrant control of rotor displacements of bearingless switched reluctance motor under eccentric fault conditions**

(2018) *Journal of Applied Science and Engineering*, 21 (2), pp. 195-204.

**DOI:** 10.6180/jase.201806\_21(2).0007

<sup>a</sup> Department of EEE, GITAM University, Visakhapatnam, India

<sup>b</sup> Department of EEE, AUCE (A), Andhra University, Visakhapatnam, India

<sup>c</sup> Department of EEE, Vignan's Institute of Information Technology, Visakhapatnam, India

**Abstract**

The objective of this study is to align the rotor position at the center and maintain less eccentric rotor displacements when bearingless switched reluctance motor (BSRM) is subjected to different loads. In this paper a PID controller is proposed which maintains a stable magnetically levitated rotor position and displacements even on the application of sudden loads to the rotor shaft. As a first step, the rotor is displaced in the four quadrants in the air gap and is successfully pulled back to the center position with the help of the proposed suspension PID controller along with asymmetric converter, hysteresis controller, and rotor displacement sensors. The second step is to run the motor at rated speed by sending phase currents through the PI controller along with a phase hysteresis controller. The third step is the sudden application of torque and suspension loads to the rotor owing to which, the rotor is subjected to eccentric displacements. However, due to control action in suspension phase current, it is pulled back quickly to the center position. The change of suspension loads has a negligible impact on the torque winding current, net torque, speed of the motor, hence the decoupling control is possible between torque and suspension force control. Simulation studies are conducted in all the cases and the obtained results clearly indicate that the suspension winding forces, suspension currents and rotor displacements in both X and Y-directions are in stable condition. © 2018 Journal of Applied Science and Engineering. All rights reserved.

**Publisher:** Journal of Applied Science and Engineering

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 33) Laxmi Lydia, E.<sup>a</sup>, Amaranatha Reddy, P.<sup>b</sup>

**Graphical modelling framework(Gmf) of map-reduce programming**

(2018) *Journal of Advanced Research in Dynamical and Control Systems*, 10 (2), pp. 195-207.

<sup>a</sup> Department of Computer Science Engineering, Vignan's Institute of Information Technology Andhra Pradesh, India

<sup>b</sup> Department of Computer Science & Engineering, VFSTR University Andhra Pradesh, India

**Abstract**

With the rise of Big Data generation, the information is flowing from various resources. According to desk of Eric Schmidt-“There were 5 exabytes of information created by the entire world between the dawn of civilization and 2003. Now that same amount is created every two days.” Hence, Storage of data, its processing and its analysis are becoming tougher with the traditional approaches of data processing. Existing system: This processing of large datasets is done using Map Reduce Programming model by Apache Hadoop, an open source framework. But this requires the in-depth knowledge of map and reduces functions for the normal users to solve the real world problems. Proposed system: In this paper, we advocate the usage of graphical model-driven approach by means of the models (Drag & Drop model) and their automated manipulation. Hence the ordinary users can create the map reduce applications easily. © 2018, Institute of Advanced Scientific Research, Inc. All rights reserved.

**Publisher:** Institute of Advanced Scientific Research, Inc.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 34) Laxmi Lydia, E.<sup>a</sup>, Govindasamy, P.<sup>b</sup>, Devika, G.<sup>c</sup>, Kaveena Rebecca, A.<sup>c</sup>

**Performance inspection of Apache Spark and map reduce analyzing through K-Means**

(2018) *Journal of Advanced Research in Dynamical and Control Systems*, 10 (2), pp. 186-194.

<sup>a</sup> Department of Computer Science Engineering, Vignan's Institute of Information Technology Andhra Pradesh, India

<sup>b</sup> Department of Industrial Engineering, Anna University, CEG Campus, Chennai, India

<sup>c</sup> School of Computing, Kalasalingam Academy of Research and Education, Krishnankoil, India

**Abstract**

Big Data is an important term for the unique systems and advances predicted to collect, construct, process and congregate experiences from vast datasets. Although the point of functioning with information that outperform the registering force or quantity of a solitary PC isn't new, the certainty, scale, and evaluation of this kind of calculation has extremely enhanced as of late. It has for a long while been the subject of excitement for computer science fans the world over, furthermore, has expanded substantially more obviousness in the later times with the steady impact of data occurring due to any similarity of web based systems administration and the travel for tech creatures to become acquainted with more significant examination of their data. MapReduce and its varieties have been exceptionally productive in realizing tremendous scale data focused applications on product gatherings. On the other hand, a substantial bit of these systems are fabricated around a non-cyclic data stream exhibit that isn't appropriate for different well known applications. Interesting MapReduce executes employments' in a clear yet rigid structure plan. MapReduce changes step (“Map”), synchronization step (“rearrange”), and a phase to join comes about because of each of the hubs in a group (“Reduce”). In like manner to vanquish the unbendable outline of Map and Reduce here the proposal starts with late exhibited Apache Spark, where each of the projects a taking care of model to separate huge data. The essential part for “successor to MapReduce” now-a-days is Apache Spark. Alike MapReduce, it is an accommodating motor, in any case it is proposed to run different workloads, and to do in that limit significantly faster compared to that more arranged structure. This paper mainly works on the differentiation of two frameworks and the paper also focuses on execution examination through standard tools which would be consider as learning figuring for packing (K-Means), through thinking of some as various parameters such as booking delay, accelerate vitality utilization than the current framework. © 2018, Institute of Advanced Scientific Research, Inc. All rights reserved.

**Publisher:** Institute of Advanced Scientific Research, Inc.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 35) Pulivarthi, N.R.<sup>a</sup>, Siva Krishna Rao, G.V.<sup>b</sup>, Nagesh Kumar, G.V.<sup>c</sup>

**Sensor less control of position and displacements of Bearing Less Switched Reluctance Motor by using sliding mode observer**

(2018) *Journal of Engineering and Applied Sciences*, 13 (6), pp. 1492-1498.

**DOI:** 10.3923/jeasci.2018.1492.1498

<sup>a</sup> Department of EEE, GITAM University, Visakhapatnam, India

<sup>b</sup> Department of EEE, Andhra University (AUCE (A)), Visakhapatnam, India

<sup>c</sup> Department of EEE, Vignan's Institute of Information Technology, Visakhapatnam, India

**Abstract**

In this study, a novel indirect sensorless sliding mode observer based displacement and position sensing techniques are proposed for Bearing less Switched Reluctance Motor (BSRM) to avoid the limitations of the mechanical sensors and to get the fast dynamic response for high-speed operations. To get fast convergence and more robustness against parameter variations in view of both mechanical and electrical disturbances, the sliding mode observer design is very appropriate for the BSRM. The conventional on-off hysteresis current controller and asymmetric converters are used for the estimation of position and displacements. Under different initial states, variations of drive parameters and suspension load disturbance conditions the performance of proposed SMO for BSRM was simulated to verify the robustness. At the instant of change of load there is a temporary increment of errors of position and rotor displacements of proposed SMO for BSRM. The whole system reached its expected precision tracking. The fast convergence rate and more robustness and disturbance rejection capability properties are carefully studied. The observer can provide stable and accurate position estimation and displacement estimation and speed estimation even there is an unexpected variations in reference and suspension loading conditions. © Medwell Journals, 2018.

**Publisher:** Medwell Journals

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 36) Bhaskar Rao, M.P.V.V.<sup>a</sup>, Reddy, D.R.K.<sup>b</sup>, Sobhan Babu, K.<sup>c</sup>

**Kantowski-Sachs modified holographic Ricci dark energy model in Saez-Ballester theory of gravitation**

(2018) *Canadian Journal of Physics*, 96 (5), pp. 555-559.

**DOI:** 10.1139/cjp-2016-0670

<sup>a</sup> Department of Basic Sciences and Humanities, Vignan's Institute of Information Technology, Duvvada, Visakhapatnam, India

<sup>b</sup> Department of Applied Mathematics, Andhra University, Visakhapatnam, India

<sup>c</sup> Department of Mathematics, JNTU College of Eng., Narasaraopeta, India

**Abstract**

We have considered Kantowski-Sachs space-time in the presence of matter and anisotropic modified holographic Ricci dark energy components in the scalar-tensor theory of gravitation formulated by Saez and Ballester (Phys. Lett. A, 113, 467, 1986) and derived the field equations of the theory. We have used (i) hybrid expansion law proposed by Akarsu et al. (JCAP, 022, 2014), (ii) a relation between metric potentials, and (iii) modified holographic Ricci dark energy density given by Chen and Jing (Phys. Lett. B, 679, 144, 2009) to obtain an exact solution of the field equations that describes a Kantowski-Sachs holographic modified Ricci dark energy universe in this theory. Physical and kinematical parameters are also computed and their physical behavior is discussed. © 2018 Published by NRC Research Press.

**Publisher:** Canadian Science Publishing

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 37) Eali, S.N.J.<sup>a</sup>, Rao, N.T.<sup>a</sup>, Swathi, K.<sup>a</sup>, Satyanarayana, K.V.<sup>b</sup>, Bhattacharyya, D.<sup>a</sup>, Kim, T.-H.<sup>c</sup>



**Simulated studies on the performance of intelligent transportation system using vehicular networks**(2018) *International Journal of Grid and Distributed Computing*, 11 (4), pp. 27-36.

DOI: 10.14257/ijgdc.2018.11.4.03

<sup>a</sup> Department of Computer Science and Engineering, Vignan's Institute of Information Technology, Visakhapatnam, AP, India<sup>b</sup> Department of Computer Science and Engineering, Avanathi Institute of Engineering and Technology, Visakhapatnam, India<sup>c</sup> Sungshin Women's University, Bomun-ro 34da-gil, Seongbuk-gu, Seoul, South Korea**Abstract**

In this paper we tend to propose the instrument for recognizing fast vehicle in transport unintended Network (VANET). Keeping in mind the tip goal to understand the surrounding condition, each vehicle often communicates its position, temporal order knowledge in its correspondence run. At the purpose once a vehicle enters the territory of a Road aspect Unit (RSU), the RSU gets the position and temporal order knowledge of the vehicle and send it to the Central Server. The Central Server registers the traditional speed, blockage and street mischances of the vehicle utilizing time and position knowledge gotten from the RSUs. At the purpose once a vehicle is found to own a lot of speed or Road mishap had happened than the specific space, the Central Server communicates this knowledge to any or all RSUs in its vary. At the purpose once the vehicle once more comes into the scope of a RSU, it illuminates the vehicle to drive within as way as doable or to require redirection utilizing a notice message. Keeping in mind the tip goal to assess the execution of our set up, we've got utilised Veins 0.5 breed check system that chips away at OMNeT++ as a system check system, Simulation of Urban movableness (SUMO) as traffic check system. © 2018 SERSC Australia.

**Publisher:** Science and Engineering Research Support Society**Document Type:** Article**Publication Stage:** Final**Source:** Scopus38) Murthy, A.S.D.<sup>a</sup>, Das, R.P.<sup>a</sup>, Rao, S.K.<sup>b</sup>**A versatile and cost effective multimodal wheelchair**(2018) *International Journal of Engineering and Technology(UAE)*, 7, pp. 124-126.<sup>a</sup> Department of Electronics and Communication Engineering, Vignan's Institute of Information Technology, Visakhapatnam, A.P, India<sup>b</sup> Department of Electronics and Communication Engineering, K.L.University, Guntur, A.P, India**Abstract**

The aim of this endeavor is to design a wheelchair to suit to the needs of such persons .By incorporating temperature and humidity sensor, IR sensor, FSR sensor and voice recognition sensor/module, the device is quite versatile in attending to the basic problems encoun-tered .After testing, it was found that this apparatus helps in avoiding obstacles. If allows the person to use his tongue of required. The additional benefit is to have voice recognition for movement .Cost effectiveness is yet another merit of the proposed system. © 2018 Authors.

**Publisher:** Science Publishing Corporation Inc**Document Type:** Article**Publication Stage:** Final**Source:** Scopus39) Roy, S.<sup>a c</sup>, Bhattacharyya, D.<sup>b</sup>, Bandyopadhyay, S.K.<sup>c</sup>, Kim, T.-H.<sup>d</sup>**Heterogeneity of human brain tumor with lesion identification, localization, and analysis from MRI**(2018) *Informatics in Medicine Unlocked*, 13, pp. 139-150.

DOI: 10.1016/j.imu.2018.02.006

<sup>a</sup> Department of Computer Science & Engineering, Institute of Computer Technology, Ganpat University, Kherva, Mehsana, Gujarat 384012, India<sup>b</sup> Department of Computer Science & Engineering, Vignan's Institute of Information Technology, Visakhapatnam, 530049, India

<sup>c</sup> Department of Computer Science & Engineering, Calcutta University Technology Campus, Kolkata, 700098, India

<sup>d</sup> Department of Convergence Security, Sungshin Women's University, Seoul, 136-742, South Korea

### Abstract

Objective: Accurate identification of brain tumor and its heterogeneity is a critical task in planning for proper therapy. A reliable fully automatic detection and analysis method for the brain tumor is necessary for an efficient measurement of the tumors and its extent. This paper presents a computerized approach to brain tumor-edema detection and analysis from the MRI of brain sequences. Method: Computer-aided diagnosis systems are focused on several research activities and the ideas of the study of brain images with the diverse modality of heterogeneity by applying better image analysis algorithms. The proposed automated modern approach includes several stages of image segmentation, area and volume calculation, and its location findings using statistical and unsupervised clustering prediction method. Result: The outcome of the proposed computerized method is compared with reference images and gives very promising results. Performance of our proposed methodology is also assessed with the gold standard recent comparable method and our method gives better results in context to accuracy and error metrics. Conclusion: The proposed method is capable of improving the overall detection, segmentation, and quantification of a variety of tumors for different cases from multiple standard datasets. © 2018

**Publisher:** Elsevier Ltd

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 40) Rao, N.T.<sup>a</sup>, Srinivas, P.<sup>a</sup>, Sudha, K.<sup>b</sup>, Bhattacharyya, D.<sup>a</sup>, Kim, T.-H.<sup>c</sup>

**Performance of M/M/1 and M/D/1 queuing models on data centers with cloud computing technology using MATLAB** (2018) *International Journal of Grid and Distributed Computing*, 11 (3), pp. 11-22.

**DOI:** 10.14257/ijgdc.2018.11.3.02

<sup>a</sup> Department of Computer Science & Engineering, Vignan's Institute of Information Technology (A), Visakhapatnam, AP, India

<sup>b</sup> Department of Computer Science & Engineering, Lenora College of Engineering AP, India

<sup>c</sup> Sungshin Women's University, Bomun-ro 34da-gil, Seongbuk-gu, Seoul, South Korea

### Abstract

Cloud computing was the technology developed to store the info and support the users with the access to the info hold on by charging a token quantity for the storage of information and for providing necessary steps for storing the info and for providing security to the info that was hold on. The content hold on in varied servers at varied locations supported the sort and size of the content. The content may be accessed to the users with valid registrations and a group of security verifications entered by the purchasers. The content that was hosted within the servers can even be used for hosting varied applications and varied alternative set of choices of systems in varied fields. It's one among the foremost illustrious and principally used analysis areas within the recent years for additional development in varied set of applications and its usages associated with many set of shoppers within the real time setting. Performance analysis in cloud computing has been another major thrust space within the recent past, that is of crucial interest for each cloud suppliers and cloud customers. Solely few notable works are revealed with regards to performance analysis in cloud computing. Typically analytical models established for assessing the operating and therefore the performance of cloud server farms may be studied beneath kind of configurations and assumptions are supported queuing theory and its accuracy is verified with numerical calculations and simulations. The issues at hand create to the task of evaluating the performance of information center with varied queuing models to grasp the distribution of the performance parameters with arrival and repair rates, traffic intensity, range of servers and therefore the associated possibilities. The goals of this thesis is to supply a framework through programs associated with queuing models and value the performance parameters, try validation, sensitivity analysis and build comparisons for information centers. Gift thesis evaluates the performance parameters of cloud information centers supported queuing theory for each single server and multi-server models. The steady state performance parameter formulations known are programmed in MATLAB® setting. The models considered for evaluation for single servers include M/M/1, M/G/1, M/D/1. Service rates have a wider range of distributions including exponential, generalize and Erlang type. © 2018 SERSC Australia.

**Publisher:** Science and Engineering Research Support Society

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

Baik, N.<sup>a</sup>, Hazra, D.<sup>b</sup>, Bhattacharyya, D.<sup>c</sup>

**Shape recognition based on mapreduce and in-memory processing on distributed file system**

(2018) *International Journal of Grid and Distributed Computing*, 11 (2), pp. 21-30.

**DOI:** 10.14257/ijgdc.2018.11.2.03

<sup>a</sup> Korea Advanced Agency of Convergence Technology, IT Venture Tower, 135 Jungdae-ro, Songpa-gu, Seoul, South Korea

<sup>b</sup> Computer Science and Engineering Department, OmDayal Group of Institutions, Howrah, Uluberia, West Bengal 711316, India

<sup>c</sup> Computer Science and Engineering Department, Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh 530049, India

**Abstract**

Two novel approaches for centroid-radii based shape retrieval on distributed file system are proposed in this paper. Modified Centroid-Radii model is used for calculating the shape features of trained images. These shape features are stored into Hadoop Distributed File System (HDFS) instead of relational database, generally used for feature storage. HDFS can store large number of shapes that is not possible to be stored in a single machine. Modified Centroid-Radii Model is also used to calculate the shape feature of query image. In one approach MapReduce query is used for recognizing binary shape. In another approach Apache Spark is used. Shape feature of query shape is compared with the shape features stored in HDFS. In-memory processing of Apache Spark used to increase the speed of retrieval process. Spark based image retrieval is faster than MapReduce based image retrieval. © 2018 SERSC Australia.

**Publisher:** Science and Engineering Research Support Society

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

42) Sankar, R.R.S.<sup>a</sup>, Kumar, J.S.V.<sup>b</sup>, Rao, M.G.<sup>a</sup>

**Adaptive fuzzy PI current control of grid interact PV inverte**

(2018) *International Journal of Electrical and Computer Engineering*, 8 (1), pp. 472-482.

**DOI:** 10.11591/ijece.v8i1.pp472-482

<sup>a</sup> Departement of Electrical and Electronic Engineering, Vignan's Institute of Information Technology, Vishakapatnam, India

<sup>b</sup> Departement of Electrical Engineering, GRITE, Hyderabad, India

**Abstract**

Now a day's, Photo Voltaic (PV) power generation rapidly increasing. This power generation highly depending on the temperature and irradiation. When this power interface with grid through the voltage source inverter with PI controller. Its gains should be updated due to the parametric changes for the better performance. In This Work Fuzzy Controller updates the gains of the proportional integral (PI)s Controller under variable parametric conditions. the gains of the PI Controller are updated based on the error current and change in error current through the fuzzy controller. The error current in direct and quadrature frame are the Inputs to the PI controller. The PI Controller generates the reference voltage to the pulse width modulation technique. Here reference voltage is compared with the carrier signal to generate the pulses to the 3-Ph Inverter connected to the grid. This controller has given well dynamic response with less steady state error and also given The less THD of the grid current compared to the PI and Fuzzy controller. It Is implemented and verified in MATLAB Simulink. © 2018 Institute of Advanced Engineering and Science. All rights reserved.

**Publisher:** Institute of Advanced Engineering and Science

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus



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## Conference Papers

## Documents

- 1) Naguboina, V.K.<sup>a</sup>, Kumar Gudey, S.<sup>b</sup>

**Enhanced Exponential Reaching Law SMC for Analyzing PQ Issues in a Distribution System Using Transformerless Hybrid Series Active Power Filter**

(2018) *INDICON 2018 - 15th IEEE India Council International Conference*, art. no. 8987110, .

**DOI:** 10.1109/INDICON45594.2018.8987110

<sup>a</sup> Vignan's Institute of Information Technology, Department of Electrical and Electronics Engineering, Visakhapatnam, India

<sup>b</sup> Gayatri Vidya Parishad College of Engineering (A), Department of Electrical and Electronics Engineering, Visakhapatnam, India

**Abstract**

In this work, an enhanced Exponential Reaching Law SMC (EERL-SMC) is proposed for a Three phase Transformerless Hybrid series Active power Filter (THSeAF) based on voltage source converters (VSC) to mitigate the power quality issues like voltage distortions and current harmonics. Generally the power quality issues had become quite common in the Electrical Distribution Systems (EDS) due to the usage of power electronic converters. To mitigate these power quality issues, a THSeAF is used in this work. An EERL-SMC is proposed to generate firing pulses to the IGBT switches of the inverter in a THSeAF for voltage and current distortions occurring on the supply side. The voltage and current references are generated using stationary reference frame theory. For obtaining the stability of the system, a mathematical model is derived. Simulations have been performed on PSCAD v4.6 with the EERL-SMC applied on the source side of the system. It is observed through simulations that the THSeAF compensates for sag, swell and voltage harmonics with less total harmonic distortion (THD). A power factor improvement is also observed during the simulation work. The controller performance is found to be robust with less settling time, less steady state error, no chattering during the mitigation of the power quality issues. Desired compensation and THD within the limits are obtained which encourages for effective usage of this topology with EERL-SMC in distribution systems. It can be an alternative to a higher order SMC like super twisting algorithm etc. © 2018 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 2) Seshadri Sastry, K.<sup>a</sup>, Madhusudhana Rao, T.V.<sup>b</sup>, Praveen Chakravarthy, B.H.<sup>a</sup>

**Classification and Detection of Skin Tones Using Big Data Machine Learning Algorithms under Rapidly Varying Illuminating Conditions**

(2018) *Proceedings of the 2nd International Conference on Trends in Electronics and Informatics, ICOEI 2018*, art. no. 8553858, pp. 684-690.

**DOI:** 10.1109/ICOEI.2018.8553858

<sup>a</sup> Xvidia Technologies Pvt. Ltd, Gurgaon, Haryana, India

<sup>b</sup> Vignan's Institute of Information Technology, Visakhapatnam, India

**Abstract**

Skin tone detection is a perceptual symptotic interspatial computational analysis in pixel segmentation extraction from an image to identify the skin components from non-skin background. In a country like India, skin tone detection is a very complex task due to presence of wide variety of skin tones, further; modeling an algorithm under different environmental conditions is even more complex. The main aim of this paper is to overcome the drawbacks of existing algorithms in acquiring accuracy. We used Big Data Analysis and Big Data Machine learning techniques on a complete set of data collected from more than 800 images of different persons/group under different illuminating conditions. In this paper we propose a real time skin tone detection algorithm under different illuminating conditions and compare its performance

parameters like True Positive Rate (TPR), False Positive Rate (FPR) and False Negative Rate (FNR), accuracy, F-score, precision and recall with existing skin tone detection algorithms. The proposed algorithm outperformed the existing algorithms. © 2018 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 3) Sekhar, B.C.<sup>a</sup>, Dhanalakshmi, B.<sup>b</sup>, Ramesh, S.<sup>c</sup>, Rao, P.S.V.S.<sup>d</sup>, Parvatheeswara Rao, B.<sup>d</sup>

**Preparation, characterization and PTCR behavior of calcium barium niobate ferroelectric ceramics**

(2018) *AIP Conference Proceedings*, 2005, art. no. 050005, .

**DOI:** 10.1063/1.5050753

<sup>a</sup> Vignan's Institute of Engineering for Women, Visakhapatnam, 530046, India

<sup>b</sup> Vignan's Institute of Information Technology (A), Visakhapatnam, 530049, India

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<sup>d</sup> Department of Physics, Andhra University, Visakhapatnam, 530003, India

**Abstract**

CaxBa1-xNb2O6 (CBN) ceramics with tetragonal tungsten bronze (TTB) structures are very attractive from academic and technological fronts due to their outstanding ferroelectric properties. Hence, CBN ceramics were prepared by high temperature solid state reaction technique in this work. The phase formation, microstructure and dielectric properties of the prepared samples were investigated by X-ray diffraction, scanning electron microscope and impedance analyzer, respectively. The X-ray analysis confirms the partially filled tetragonal tungsten bronze (TTB) structure. The scanning electron micrographs provide information related to the morphology and grain size distribution of the samples. The dielectric and ferroelectric properties of CaxBa1-xNb2O6 (x = 0, 0.1, 0.15, 0.2, 0.25, 0.3, 0.35, 0.4) ceramics were also measured, and they have been found to be strongly processing-dependent. The frequency dependence of the dielectric constant ( $\epsilon$ ) of the samples have been discussed. Detailed analysis of the structural and dielectric properties suggests that these samples have undergone a phase transition well above the room temperature. DC resistivity studies on the samples are marked by a response of positive temperature coefficient of resistivity (PTCR) in all the compositions. © 2018 Author(s).

**Publisher:** American Institute of Physics Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 4) Lydia, E.L., Sudhakar, C., Madhuri, T.

**An improved optimal task selection strategy for hadoop scheduling**

(2018) *2017 International Conference on Energy, Communication, Data Analytics and Soft Computing, ICECDS 2017*, pp. 2783-2787.

**DOI:** 10.1109/ICECDS.2017.8389963

Department of Computer Science and Engineering, Vignan's Institute of Information Technology Andhra Pradesh, India

**Abstract**

MapReduce is a popular parallel programming model used to solve wide range of Big Data applications in cloud computing environment. Hadoop is an open source implementation MapReduce and widely used by vast amount of users. It provides an abstracted environment for running large scale data intensive applications in a scalable and fault tolerant manner. There are several Hadoop scheduling algorithms are proposed in the literature with various performance goals. In this paper, a new improved optimal task selection scheme is introduced in to assist the scheduler when multiple local tasks are available for a node. To improve the probability of percentage of local tasks launched for a job in future, the task which has least number of replicas of input, individual load of disks attached to the node and maximum expected time to wait for next local node is launched among the available local tasks for a node. The proposed method was evaluated by extensive experiments and it has been observed that the method improves the performance significantly. From the experiments, around 25% of improvements achieved in terms of locality and fairness. © 2017 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper  
**Publication Stage:** Final  
**Source:** Scopus

5) Karuna, M.<sup>a</sup> , Ganesh, C.<sup>a</sup> , Das, R.P.<sup>a</sup> , Kumar, M.V.<sup>b</sup>

**Classification of wrist movements through EMG signals with fuzzy logic algorithm**

(2018) *2017 International Conference on Energy, Communication, Data Analytics and Soft Computing, ICECDS 2017*, pp. 2258-2261.

**DOI:** 10.1109/ICECDS.2017.8389854

<sup>a</sup> Department of Electronics and Communication Engineering, Vignan's Institute of Information Technology, Visakhapatnam, India

<sup>b</sup> Department of Physical Medicine and Rehabilitation, Duncan Hospital, Raxual, India

**Abstract**

Electromyography (EMG) deals with measurement of electrical potential created by the activation of muscle fibers during voluntary or involuntary movements. As these signals are related to human process of motion, Due to uncertain nature of EMG signals the correct prediction of intended motion is quite difficult in any myoelectric control mechanism. A movement identification algorithm to distinguish various positions of movements of the upper limb is presented. Fuzzy stages were developed and if-then rules at each stage are related to the action of muscle fibers when performing a particular movement. This algorithm was evaluated using surface EMG measurements over the Flexion and Extension muscles. © 2017 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper  
**Publication Stage:** Final  
**Source:** Scopus

6) Deepika, K.K.<sup>a</sup> , Kumar, J.V.<sup>b</sup> , Rao, G.K.<sup>c</sup>

**A comprehensive survey on electric springs and it's applications in smart grids**

(2018) *2018 3rd IEEE International Conference on Recent Trends in Electronics, Information and Communication Technology, RTEICT 2018 - Proceedings*, art. no. 9012530, pp. 1996-2000.

**DOI:** 10.1109/RTEICT42901.2018.9012530

<sup>a</sup> Vignan's Institute of Information Technology, Dept. of Eee, Visakhapatnam, Andhra Pradesh, India

<sup>b</sup> Anits, Dept. of Eee, Visakhapatnam, Andhra Pradesh, India

<sup>c</sup> KI Ef, Department of Eee, Vijayawada, Andhra Pradesh, India

**Abstract**

Demand side management plays a vital role in the integration of the Renewable energy sources into the Smart grid. Smart grid must fulfill the overpoweringly increasing load demands. This can be achieved with the renewable energy sources and energy storage added into the smart periphery with new and intelligent control techniques. Electric Springs is the newest control paradigm confirming the load demand to trail the power generation. This paper explores the literature of modelling, control and applications of Electric Springs that leaves its scope for further deployment in power distribution systems. © 2018 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper  
**Publication Stage:** Final  
**Source:** Scopus

7) Pradhan, S.K.<sup>a</sup> , Barik, R.K.<sup>b</sup> , Bishoyi, P.K.<sup>b</sup> , Karthikeyan, S.S.<sup>b</sup> , Chandu, D.S.<sup>b</sup>

**A novel dual-band matching network using modified T-shaped line and its application**

(2018) *Proceedings of the 2017 International Conference on Wireless Communications, Signal Processing and Networking, WiSPNET 2017*, 2018-January, pp. 919-923.

**DOI:** 10.1109/WISPNET.8299896

<sup>a</sup> Department of Electronics Engineering, Vignan Institute of Information Technology, Duvvada, Vadlapudi Post, Andhra Pradesh, 530049, India

<sup>b</sup> Department of Electronics Engineering, Indian Institute of Information Technology Design and Manufacturing (IIITDandM), Kancheepuram, Chennai, 600127, India

**Abstract**

In this paper, a novel design of dual-band matching network using T-shaped coupled line is presented. The main aim of the proposed network is to match unequal frequencydependent complex loads to a real  $50 \Omega$  source impedance at two arbitrarily chosen frequencies. Simple and exact design formulas are obtained by using lossless transmission line analysis. To validate the analysis, four examples of dual-band matching network are designed for different complex loads and frequency ratios. The return loss of the dual-band network is better than 20 dB for all the examples. The proposed network is then applied to match the input impedances of the microstrip patch antenna at two different operating frequencies. A prototype of the rectangular patch antenna working for WLAN and WiMAX applications is fabricated and tested. The measured results are consistent with the simulated results. © 2017 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

8) Pedapenki, K.K., Swathi, G.

**Analysis of shunt active power filter with unit voltage template method**

(2018) *6th International Conference on Computation of Power, Energy, Information and Communication, ICCPEIC 2017*, 2018-January, pp. 749-753.

**DOI:** 10.1109/ICCPEIC.2017.8290463

Department of Electrical and Electronics Engineering, Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh, 530049, India

**Abstract**

The huge increase in usage of power leads to convert and to control the same. While doing these processes, the power electronic converters play an important role. With the use of these converters for conversion of huge electrical power, there are harmonics injected into the system due to the usage of semiconductor devices and for controlling the huge electrical power, there is a reactive power drawing from the system. These two problems create some notable problems like communication interference, heating of electric motors, low power factor etc. Shunt active power filter is used to minimize these two losses effectively. The shunt active power filter is the combination of an inductor and an inverter controlled capacitor. This combination gives the perfect compensating current to minimize and almost to eliminate these two problems. So many techniques are used in this operation. Some of them are instantaneous method, synchronous detection method, unit voltage template method and so on. In this paper, the unit voltage template (UVT) method is used to get the required signals to drive the inverter switches. The results with respect to Total Harmonic Distortion (THD), and Power Factor (PF) are tabulated and compared for both with and without active power filter. © 2017 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

9) Naidu, B.S.<sup>a</sup>, Reddi, V.S.N.<sup>b</sup>

**Performance of multi-orifice resonator on higher order modes of an acoustic cavity**

(2018) *INTER-NOISE 2018 - 47th International Congress and Exposition on Noise Control Engineering: Impact of Noise Control Engineering*, .

<sup>a</sup> Department of Mechanical Engineering, NITK, Surathkal, 575025, India

<sup>b</sup> Department of Mechanical Engineering, Vignan's Institute of Information Technology, Visakhapatnam, 530049, India



**Abstract**

This paper emphasizes on low frequency noise reduction in an acoustic cavity. The acoustic cavity is a pentagonal prism with irregular dimensions and non-parallel walls. First six modes of the acoustic cavity is considered for the analysis. Numerical analysis for tuning and coupling the resonator to the cavity is carried out using finite element software ANSYS 1 . Numerical results are validated using experiments, in which acoustic cavity and coupled resonator-cavity system is excited using a dodecahedral loudspeaker with a white noise source. Multi-orifice rectangular resonators are tuned to each cavity mode frequency by varying their geometrical parameters. Throughout the analysis the resonator cavity volume and the overall surface area of the orifice is held constant. Harmonic analysis is carried out to determine the overall Sound Pressure Levels (SPL) of the uncoupled and coupled resonator-cavity systems. The difference in SPL from the both gives the amount of noise reduced. The analysis shows that the total amount of noise reduction in lower frequency band is more when a resonator is coupled to higher order modes than when coupled to only the first mode of the cavity. The difference in the amount of noise reduction was more than 5 dB when coupled to higher order modes. Few results are validated using experiments. © INTER-NOISE 2018 - 47th International Congress and Exposition on Noise Control Engineering: Impact of Noise Control Engineering. All rights reserved.

**Publisher:** Institute of Noise Control Engineering

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

10) Reddi Chintapalli, V.S.N., Gopala Rao Lokireddy, V.V.

**Low and medium frequency noise reduction inside an acoustic cavity using de-tuned slit and multi-slit resonators**  
(2018) *INTER-NOISE 2018 - 47th International Congress and Exposition on Noise Control Engineering: Impact of Noise Control Engineering*, .

Vibration and Acoustics Laboratory, Dept. of Mechanical Engineering, Vignans Institute of Information Technology, Visakhapatnam, 530049, India

**Abstract**

Helmholtz resonators (HRs) are used in acoustic cavities for low frequency noise reduction. One of the ways to increase the natural frequency of a resonator without changing its volume is to increase number of slits or openings. The focus of this paper is to enhance the noise control inside an acoustic cavity using single slit resonator and multi-slit resonators. A rectangular room with rigid wall boundary is considered as acoustic cavity. The acoustic cavity mode frequencies and detuned modes of the resonator are calculated using 3D finite element method. The analysis is carried out by coupling each of the resonators to first mode of the cavity, higher order modes and then to higher amplitude modes. Later, a combination of resonators tuned to low and medium frequencies are analyzed. The numerical analysis is accomplished using ANSYS 1 software and few results are validated using mathematical formulations. The mathematical analysis is performed using a commercial software tool MATLAB 2 . Impedance of each of the resonators is calculated using the formulas given by Ch V S N Reddi and Padmanabhan 3,4 and is applied as a boundary condition on the element where the resonator is mounted in cavity-resonator coupled calculations. The results shows that the amount of noise reduction inside the coupled resonator-cavity is more when multiple resonators are tuned to various higher amplitude modes and this is further enhanced when the number of resonators tuned each single frequency is increased. The analysis also shows the amount of noise reduction inside acoustic cavity by resonator coupling doesn't depend on the type of mode and their combinations it only depends on the frequencies selected and their amplitudes. The results are verified over various cavity geometries and few results are validated using mathematical formulations. © INTER-NOISE 2018 - 47th International Congress and Exposition on Noise Control Engineering: Impact of Noise Control Engineering. All rights reserved.

**Publisher:** Institute of Noise Control Engineering

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

11) Kumar, G.S., Painumgal, U.V., Kumar, M.N.V.C., Rajesh, K.H.V.

**Autonomous Underwater Vehicle for Vision Based Tracking**  
(2018) *Procedia Computer Science*, 133, pp. 169-180.

**DOI:** 10.1016/j.procs.2018.07.021

Vignan's Institute of Information Technology, Besides VSEZ, Duvvada, Vadlapudi Post, Gajuwaka, Visakhapatnam, Andhra

Pradesh 530049, India

### Abstract

This paper describes about the design, construction and control of an "Autonomous Underwater Vehicle for Vision Based Tracking", built in Vignan's Institute of Information Technology, Centre for Innovation Lab. The underwater vision robot is essentially an Autonomous Underwater Vehicle (AUV) for study of marine animals by automatically tracking and following them using computer vision. The AUV can also be used as a platform for Photo-mapping of the Seafloor using the onboard camera and light arrangement. The robot is proposed to have 5 thrusters configurations to achieve 4 degrees of freedom controlled by an Inertial Measurement Unit (IMU) interfaced with control unit and powered by commercial LiPo battery packs. The robot is equipped with roll, pitch, heading, and depth sensors which provide sufficient feedback signals to automatically control the vehicle to track a pre-planned trajectory. The centre of gravity and centre of buoyancy of the vehicle are positioned in such a way that it is self-stabilized. Along with this the combinations of sensors and speed control drivers provide more stability to the system using a closed loop control system, without the operator involvement. The AUV also captures videos during its mission using the camera. It is planned to have a multi-core umbilical cable for video signal, water leakage alarm, feedback signals and battery charging lines. This will be only used for development and test purposes and will be removed during autonomous missions. Various control schemes can be applied for the vehicle to track different paths. The AUV is designed to the dimension of 575×210×175mm. The AUV uses O-rings for the hulls for good water sealing effect as well as for faster assembly and disassembly. We expect this AUV development to mature in to an advanced system can be used as a platform for study of the ocean by scientists, for environmental studies and for defense applications. © 2018 The Authors. Published by Elsevier Ltd.

**Publisher:** Elsevier B.V.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 12) Ramakrishna, C.S., Raghuram, K.S., Ben, B.A.

**Process Modelling and Simulation Analysis of CNC Oxy-Fuel Cutting Process on SA516 Grade 70 Carbon Steel** (2018) *Materials Today: Proceedings*, 5 (2), pp. 7818-7827.

**DOI:** 10.1016/j.matpr.2017.11.461

Dept of Mechanical Engineering, Vignan's Institute of Information Technology, Visakhapatnam, India

### Abstract

In the present study the effect of cutting parameters on MRR are measured and are optimized. Experiments are performed using SA516 Grade 70 Carbon steel work material and are cut by CNC Oxy-Fuel cutting machine. Taguchi L9 orthogonal array is used for designing the experiment. Cutting Speed, Stand-off-distance and oxygen pressure are the selected input parameters for Oxy-Fuel cutting and MRR is the output response parameter. For the present investigation the input variables values varies from the 450-500 mm/min for cutting speed, 4 - 8 mm for stand-off- distance and 3.5 - 5.5 kg/cm<sup>2</sup> for oxygen pressure. Regression equations are generated from the Minitab 17. The functional relationship & effect on different parameters were studied. ANOVA is applied to know which input parameter has most significant affect on the MRR. It was noticed that as increase in Oxygen pressure increases the MRR. The MRR with kerf the speed and Oxygen Pressure greatly influences the functional aspect and quality. The interactive graphs are presented in the analysis. The optimum combination for MRR is A3B3C3. The error of experimental results with regression equation are checked by comparing the predicted values with experimental values and found the results are in adequate. © 2017 Elsevier Ltd.

**Publisher:** Elsevier Ltd

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 13) Swamy Naidu, Y.<sup>a</sup>, Nagesh Kumar, G.V.<sup>b</sup>

**Electric field computation of epoxy- nano and micro composite conical spacer in a gas insulated busduct** (2018) *Advances in Intelligent Systems and Computing*, 668, pp. 575-583.

**DOI:** 10.1007/978-981-10-7868-2\_55

<sup>a</sup> Vizag Institute of Technology, Visakhapatnam, Andhra Pradesh, India

<sup>b</sup> Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh, India

**Abstract**

In gas insulated systems, the breakdown strength of SF<sub>6</sub> gas is badly affected by locally enhanced electric fields. Polymer nano-composites are the recent advancements in alternatives for the existing insulating materials. Polymer nano- and micro-composite mixture exhibits excellent electrical, thermal, and mechanical properties. In GIS, the reliability can be enhanced up to a great extent with epoxy resin along with polymer nano- and micro-filler mixture as dielectric coating material. The addition of nano- and micro-filler can further enhance insulation properties of epoxy resin. In this paper, the electric field distribution and calculation of relative permittivity of a single-phase common enclosure for an optimized design of GIS with nano-composites are carried out. Inorganic nano-fillers like alumina (Al<sub>2</sub>O<sub>3</sub>) and titanium (TiO<sub>2</sub>) with 100 μm dielectric coating thickness are added to epoxy, and the resultant permittivity is calculated. The electric field distribution with AC as applied voltage is calculated at the surface of the cone type spacer and the distribution. Finite element method (FEM), one of the proven numerical methods, is used for computing the electric fields at various points under consideration and is plotted. The results are presented and analyzed for various filler concentrations. © Springer Nature Singapore Pte Ltd. 2018.

**Publisher:** Springer Verlag

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 14) Nagesh Kumar, G.V.<sup>a</sup>, Ananth, D.V.N.<sup>b</sup>, Chowdary, D.D.<sup>c</sup>, Appala Naidu, K.<sup>a</sup>

**Fuzzy controller-based intelligent operation of grid-connected DFIG during recurring symmetrical faults**  
(2018) *Advances in Intelligent Systems and Computing*, 668, pp. 707-716.

**DOI:** 10.1007/978-981-10-7868-2\_67

<sup>a</sup> Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh, India

<sup>b</sup> K L Educational Society, Vaddeswaram, Vijayawada, Andhra Pradesh 522502, India

<sup>c</sup> Dr. L. Bullayya Engineering College for Women, Visakhapatnam, India

**Abstract**

The grid-connected doubly fed induction generator (DFIG) can get adapted to modern grid rules to maintain synchronism and stability during disturbances if controlled by good control strategy. Every country framed certain grid rules such that in general the DFIG has to be in synchronism for approved time period during low voltages is called low voltage ride through (LVRT). Hence, for better power transfer capability and guarantee transient and dynamic stability margin improvement, enhanced FOC (EFOC) is proposed in the RSC of DFIG converter. The inner fast control loops are controlled using fuzzy controller with an aim to better voltage compensation, electromagnetic oscillations damping, and surge currents limit. This further leads to continued operation of DFIG under voltage sags. The proposed EFOC method helps in superior reactive power control with enhanced stability of current and voltage waveforms from rotor and stator to grid disturbance. The system behavior with recurring symmetrical low-voltage fault with decrease in voltage by 30 and 60% of the rated voltage happening at the point of common coupling (PCC) between 1–1.5 s and 2.5–3 s is analyzed using simulation studies. © Springer Nature Singapore Pte Ltd. 2018.

**Publisher:** Springer Verlag

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 15) Ravi Sankar, R.S.<sup>a</sup>, Jaya Ram Kumar, S.V.<sup>b</sup>

**Fuzzy current control of grid interactive voltage source converter with solar energy**  
(2018) *Smart Innovation, Systems and Technologies*, 77, pp. 193-202.

**DOI:** 10.1007/978-981-10-5544-7\_20

<sup>a</sup> Electrical and Electronic Engineering Department, Vignan's Institute of Information Technology, Visakhapatnam, 530046, India

<sup>b</sup> Electrical and Electronic Engineering Department, GRIET, Hyderabad, India

**Abstract**

This work deals with design and simulation of photovoltaic system connected to the grid. Maximum power is extracted from

solar panel by means of boost convert which is operated by means of perturb and observe method. The output of the boost converter connected to the three-phase inverter is wired to the grid. Inverter is controlled by the fuzzy control technic. In this control technique, load current is taken as reference current and grid current is taken as actual current. Error in direct and quadrature axis currents is given to the fuzzy controller which generates the reference voltage. These are transferred into the 'abc' frame and compared with the carrier signal, and generated pulses are given to the inverter. The fuzzy current control method switches the power device in the inverter such that minimizes the error between the grid currents and the load current. Grid current tracks the reference current with less transient time, steady-state error, acceptable total harmonic distortion. This is implemented through the MATLAB simulation. © Springer Nature Singapore Pte Ltd. 2018.

**Publisher:** Springer Science and Business Media Deutschland GmbH

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 16) Sankara Rao, R., Tummalala, P., Das, R.P.

**Design of simple PCMPA for X band applications**

(2018) *Lecture Notes in Electrical Engineering*, 434, pp. 429-436.

**DOI:** 10.1007/978-981-10-4280-5\_45

Vignan's Institute of Information Technology, Visakhapatnam, India

**Abstract**

Proximity coupling feed is a novel electromagnetic coupling system to improve the radiation characteristics of planar antenna. In this paper, such feed technique is implemented to excite circular patch antenna with modified ground. The modeling and simulation results shows that the radiation characteristics like return loss, voltage standing wave ratio (VSWR) and gain have improved with the slot. When compared to without slot for Proximity fed Circular disk patch antenna. The simulation is carried out in HFSS and the analysis is carried using S11, VSWR and radiation pattern. © Springer Nature Singapore Pte Ltd. 2018.

**Publisher:** Springer Verlag

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 17) Pavani, T.<sup>a</sup>, Rajeswari, M.<sup>a</sup>, Padma Vani, C.<sup>b</sup>

**Detecting the sonar target by using optimization technique**

(2018) *Lecture Notes in Electrical Engineering*, 434, pp. 283-292.

**DOI:** 10.1007/978-981-10-4280-5\_30

<sup>a</sup> Department of ECE, Vignan's Institute of Information Technology, Visakhapatnam, AP, India

<sup>b</sup> Department of ECE, Vignan's Institute of Engineering for Women, Visakhapatnam, AP, India

**Abstract**

The general important problems in a lot of application areas are to pull out the signal of interest from background noise. Background noise is an indiscriminate form; the occurrence of the signal and the performance of signal are also indiscriminate. Thus, it is sensible to deal with the signal removal problem using methods based on optimization technique and statistical estimation. Within this paper, signal and noise environment has been encountered in active sonar system. The optimum receiver is obtainable for range-Doppler-shift dispensation in a background-noise-limited environment using firefly optimization method for dropping the noise. There are various techniques for target detection, but this paper shows a new approach for target detection using a firefly algorithm to optimize the received signal by reducing the noise. FFT-based implementation for detection of CW active sonar target using firefly optimized algorithm has been shown. © Springer Nature Singapore Pte Ltd. 2018.

**Publisher:** Springer Verlag

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

18) Murali, A.<sup>a b</sup>, Hari Kishore, K.<sup>b</sup>, Srikanth, L.<sup>c</sup>, Trinadha Rao, A.<sup>d</sup>, Suresh, V.<sup>e</sup>

**Implementation of reconfigurable circuit with watch-points in the hardware**  
(2018) *Lecture Notes in Electrical Engineering*, 434, pp. 657-663.

**DOI:** 10.1007/978-981-10-4280-5\_69

<sup>a</sup> Department of ECE, Raghu Engineering College, Visakhapatnam, AP, India

<sup>b</sup> KLEF, K L University, Green Fields, Guntur, AP, India

<sup>c</sup> Department of ECE, GMR Institute of Technology, Rajam, AP, India

<sup>d</sup> Department of ECE, Chintalapudi Engineering College, Guntur, AP, India

<sup>e</sup> Department of ECM, Vignan's Institute of Information Technology, Visakhapatnam, AP, India

#### **Abstract**

This paper introduces the use of watch-points in the FPGA designs that creates the debugging environment. We described some designed techniques that can be automated and modified the watch-point logics using the debugging tools like Jbits and Jroute. This reduces the hardware debugging time. In the proposed technique, the watch-point logic modification makes the speedup from 5 to 12 times with the other benchmark circuitry systems. © Springer Nature Singapore Pte Ltd. 2018.

**Publisher:** Springer Verlag

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

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Book Chapters

## Documents

Nagesh Kumar, G.V.<sup>a</sup>, Venkateswara Rao, B.<sup>b</sup>, Deepak Chowdary, D.<sup>c</sup>, Sobhan, P.V.S.<sup>d</sup>

**A computational comparison of swarm optimization techniques for optimal load shedding under the presence of FACTS devices to avoid voltage instability**

(2018) *Critical Developments and Applications of Swarm Intelligence*, pp. 182-214.

**DOI:** 10.4018/978-1-5225-5134-8.ch008

<sup>a</sup> Vignan's Institute of Information Technology (Autonomous), India

<sup>b</sup> V. R. Siddhartha Engineering College (Autonomous), India

<sup>c</sup> Dr. L. Bullayya College of Engineering (for Women), India

<sup>d</sup> Vignan's Foundation for Science, India

**Abstract**

Voltage instability has become a serious threat to the operation of modern power systems. Load shedding is one of the effective countermeasures for avoiding instability. Improper load shedding may result in huge technical and economic losses. So, an optimal load shedding is to be carried out for supplying more demand. This chapter implements bat and firefly algorithms for solving the optimal load shedding problem to identify the optimal amount of load to be shed. This is applied for a multi-objective function which contains minimization of amount of load to be shed, active power loss minimization, and voltage profile improvement. The presence of with and without static VAR compensator (SVC), thyristor-controlled series capacitor (TCSC), and unified power flow controller (UPFC) on load shedding for IEEE 57 bus system has been presented and analyzed. The results obtained with bat and firefly algorithms were compared with genetic algorithm (GA) and also the impact of flexible AC transmission system (FACTS) devices on load shedding problem has been analyzed. © 2018, IGI Global.

**Publisher:** IGI Global

2-s2.0-85046051126

**Document Type:** Book Chapter

**Publication Stage:** Final

**Source:** Scopus



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## Research Publications- 2019

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**VIGNAN'S** INSTITUTE OF INFORMATION TECHNOLOGY  
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Beside VSEZ, Duvvada, Vadlapudi Post, Gajuwaka, Visakhapatnam - 530 049.

Articles

## Documents

- 1) Ray, A., Rao, N.T., Bhattacharyya, D.

**Analysis of breast cancer detection and classification in early stage from digital mammogram**  
(2019) *Asia Life Sciences*, 20 (2), pp. 1-14.

Department of Computer Science and Engineering, Vignan's Institute of Information Technology, Visakhapatnam, 530049, India

**Abstract**

Breast cancer nowadays acts as one of the most prevalent life threatening diseases among women. Early detection of breast cancer helps to improve the prognosis of cancer and in treatment planning. Mammography is the well-known technique for detection of breast cancer. Unnecessary biopsy is time-consuming as well as increases the anxiety of patient. Computer-Aided Diagnosis (CAD) is becoming an important tool for detection and characterization of cancer and also reduces the expenditure of unnecessary biopsy. CAD plays a crucial role as second reader for detection of breast cancer in clinical practice. This paper develops a CAD model capable of locating the suspicious region. The proposed method consists of four steps: Preprocessing, segmentation, feature extraction and classification. After segmentation of cancerous region, it is characterized by the hybrid extraction methods i.e. statistical features using first-order histogram and Gray Level Co-occurrence Matrix (GLCM) and Principal Component Analysis (PCA). Classification results of these two methods are compared and high accuracy obtained from GLCM according to the best angle choosing. Based on the classification result, normal and cancerous mammograms have been classified. © Rushing Water Publishers Ltd. 2019.

**Publisher:** Rushing Water Publishers Ltd.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 2) Mirzana, A.<sup>a</sup>, Nguyen, P.<sup>b</sup>, Nguyen, Q.L.H.T.<sup>c</sup>, Huynh, V.D.B.<sup>d</sup>, Laxmi Lydia, E.<sup>e</sup>, Shankar, K.<sup>f</sup>

**The e-commerce sales application of brick**  
(2019) *Test Engineering and Management*, 81, pp. 1155-1163.

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<sup>f</sup> Department of Computer Applications, Alagappa University, India

**Abstract**

Batara is a company engaged in the production and sale of bricks. The high quality makes Batara Partner has many customers. The e-commerce application will greatly help Batara partner to add more customers. Where the purpose of this research itself is to build e-commerce applications that can provide information both for the company and the customers themselves. The methodology used to design this system was the RUP methodology, which is an iterative, architecture-centric, and used case driven software development approach. With the construction of this system can expand sales promotions and facilitate customers who are outside the city to make transactions easily. © 2019 Mattingley Publishing. All rights reserved.

**Publisher:** Mattingley Publishing

**Document Type:** Article

**Publication Stage:** Final  
**Source:** Scopus

- 3) Bastian, I.<sup>a</sup>, Nguyen, P.<sup>b</sup>, Nguyen, Q.L.H.T.<sup>c</sup>, Huynh, V.D.B.<sup>d</sup>, Laxmi Lydia, E.<sup>e</sup>, Shankar, K.<sup>f</sup>

**Web-based sales information systems in cellular shop**  
 (2019) *Test Engineering and Management*, 81, pp. 1192-1201.

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#### Abstract

The promotion management and managing data that is done manually vulnerable to the weaknesses, such as errors and delays in sales, recording customer data, recording ordering data and storing data manually will be difficult when the data is needed. This condition is also experienced by Bastian cell. Therefore Ecommerce is a new paradigm in the business world that uses online services. Many items can be offered through e-commerce such as selling mobile phones and mobile accessories online by using the web. With this system, the customers do not have to come to the store and can order it at any time without a time limit. Mobile Sales Information System and Web-based Mobile Accessories on Bastian Cell were designed by using Macromedia DreamWeaver, PHP, MySQL, Xampp, and Photoshop. By designing this website online, it is expected to attract the customer interest and can be an effective sales medium. © 2019 Mattingley Publishing. All rights reserved.

**Publisher:** Mattingley Publishing

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

- 4) Aruna, S.<sup>a</sup>, Srinivasanaik, K.<sup>b</sup>, Madhusudan, D.<sup>c</sup>, Venkatesh, V.<sup>d</sup>

**Implementation of 5-stage 32-bit microprocessor based without interlocked pipelining stages**  
 (2019) *International Journal of Innovative Technology and Exploring Engineering*, 9 (1), pp. 4557-4561.

**DOI:** 10.35940/ijitee.A4899.119119

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<sup>d</sup> Andhra University College of Engineering (A), Visakhapatnam, India

#### Abstract

Many processors have evolved in the past century; Out of which, Reduced Instruction set Computing (RISC) processors are well known for their ease of use. The next in line was the Microprocessor without Interlocked pipelining stages (MIPS) RISC based architecture. Less number of instructions, good amount of registers makes these processors a boon to use. Often times, MIPS processors loose the battle against their contenders due to lack of speed. Hence, there is a sheer necessity in designing a more robust system that has all the advantages of MIPS. Over time, there have been designs that could solve the power drawbacks and the area optimizations. However, performance criterion is mostly neglected. This paper emphasizes on the performance metric of pipelined 32-bit MIPS microprocessor. This processor supports RISC architecture and has been designed under Harvard architecture. Pipelining technique is used to solve the problem of low performance and achieve smaller execution times. The processor has four pipes. Pipes are the structures which store data. Pipes can be viewed as register banks. These pipes are generally used to store the intermediate data. The design contains various modules like ALU, Instruction fetch register, Execution unit, Memory, Program counter (PC). Verilog HDL has been used to implement the design. The software used is Xilinx ISE for design and ISIM simulator has been used for simulation purposes. The applications of this MIPS microprocessor are abundant. MIPS microprocessor can be used to carry out the fundamental tasks and an application specific core/IP/processor can be designed and combined with MIPS. This facilitates in meeting the goals of high performance, lower time-to-market and cost-effectiveness. Some application specific uses can be for music systems, PDA, Image processing etc. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 5) Padhi, S.N.<sup>a</sup>, Bhavani, G.<sup>b</sup>, Naga Sudha, V.<sup>b</sup>, Raghuram, K.S.<sup>b</sup>, Rout, T.<sup>c</sup>

**Effect of hub radius on rotational stability of functionally graded timoshenko beams**

(2019) *International Journal of Innovative Technology and Exploring Engineering*, 9 (1), pp. 4246-4251.

**DOI:** 10.35940/ijitee.L3149.119119

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<sup>c</sup> Dept.of Mechanical Engg, Parala Maharaja Engineering College, Berhampur, India

**Abstract**

This work is concerned to examine the rotational stability of functionally graded cantilever Timoshenko beams. Power law with various indices as well as exponential law were used to find out the effect of hub radius parameter on the stability of both functionally graded ordinary (FGO) beam. Floquet's theory was used to establish the stability boundaries. The governing equation of motion was followed by Hamilton's principle and solved by Finite element method. Dependence of Bulk modulus on thickness of beam was studied using both power law and exponential distribution. The influence of hub radius parameter was found to be enhancing the stability of FGO beams. It has further been confirmed that the effect of hub radius with exponential distribution of constituent phases renders better stability compared to power law distribution of the phases in the functionally graded material(FGM). ©BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 6) Alla, S.K.<sup>a b</sup>, Duvuru, H.B.<sup>c</sup>, Shaw, S.K.<sup>a</sup>, Prasad, B.B.V.S.V.<sup>d</sup>, Kumar, M.K.<sup>c</sup>, Meena, S.S.<sup>e</sup>, Gupta, N.<sup>f</sup>, Prasad, N.K.<sup>a</sup>

**Zr-substituted cobalt oxide nanoparticles: structural, magnetic and electrical properties**

(2019) *Journal of Materials Science: Materials in Electronics*, 30 (22), pp. 20088-20098.

**DOI:** 10.1007/s10854-019-02381-y

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**Abstract**

In the present communication, the effect of Zr substitutions in cobalt oxide ( $Zr_xCo_{3-x}O_4$ , where  $x = 0.01, 0.05, 0.1, 0.3$  and  $0.5$ ) nanoparticles over their structural, magnetic and electric properties have been investigated. The nanoparticles were produced by single step microwave refluxing method. The crystallite size was found to be diminishing with increased Zr concentration. All the samples displayed weak ferromagnetic behavior. The continuous decrease of MS value of  $Co_3O_4$  nanoparticles was noticed upon an increase in the Zr substitutions. AC conductivity and dielectric measurements were carried out in the frequency ranging from 10 kHz to 20 MHz. The samples with the highest zirconium concentration, i.e.  $x = 0.5$  have shown relatively moderate conduction as well as dielectric properties. © 2019, Springer Science+Business Media, LLC, part of Springer Nature.

**Publisher:** Springer New York LLC

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 7) Dhanalakshmi, B.<sup>a,b</sup>, Vivekananda, K.V.<sup>a</sup>, Rao, B.P.<sup>b</sup>, Rao, P.S.V.S.<sup>b</sup>

**Superparamagnetism in Bi<sub>0.95</sub>Mn<sub>0.05</sub>FeO<sub>3</sub> – Ni<sub>0.5</sub>Zn<sub>0.5</sub>Fe<sub>2</sub>O<sub>4</sub> multiferroic nanocomposites**

(2019) *Physica B: Condensed Matter*, 571, pp. 5-9.

**DOI:** 10.1016/j.physb.2019.06.058

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**Abstract**

Multiferroic nanocomposites of  $x\text{Bi}_{0.95}\text{Mn}_{0.05}\text{FeO}_3 + (1-x)\text{Ni}_{0.5}\text{Zn}_{0.5}\text{Fe}_2\text{O}_4$ , for  $x$  values of 0, 0.2, 0.4, 0.5, 0.6, 0.8 and 1, have been fabricated using sol-gel autocombustion and solid state methods. Structural and microstructural studies reveal the formation of parent phases of perovskite and spinel, while ensuring proper mixing of two phases by showing clear grain growth in the composites, respectively. Magnetic (M-H loop) measurements show that there is an enhanced magnetic order in the nanocomposites. Besides, the investigated nanocomposite materials exhibit superparamagnetic behaviour with small coercivities in the order of 3–29 Oe in all the samples. This may be due to strong influence of both the phases on one another to modify the anti-ferro magnetic (AFM) order in manganese doped bismuth ferrite. The observed magnetic behaviour was attributed to nanoparticle nature of the composites. In order to ensure the same, crystallite sizes were estimated using Langevin distribution function as well as X-ray diffractometry (XRD), which lie in the range between 28.51 and 55.43 nm, and the obtained results show a good agreement between them. The interpretations of these results are obviously evolved from the structural contributions for ferroelectricity, antiferromagnetic spin spiral cycloid structure around the FeO<sub>6</sub> octahedra, weak ferrimagnetic exchange interactions between the cations located at A- and B-sites and the possible interplay between different ferroic orders. © 2019 Elsevier B.V.

**Publisher:** Elsevier B.V.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 8) Yuvaraj, N.<sup>a</sup>, Karthikeyan, T.<sup>b</sup>, Sampath Dakshina Murthy, A.<sup>c</sup>, Swathi, K.<sup>c</sup>

**An pso-sfla based ensemble link weighted triple quality algorithm to improve the performance of clustering over categorical data clustering**

(2019) *International Journal of Advanced Science and Technology*, 28 (9), pp. 104-115.

<sup>a</sup> Department of Computer Science and Engineering, St. Peter's Institute of Higher Education and Research Tamil Nadu, India

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**Abstract**

This paper focus on solving the issues related to the occurrence of irrelevant and null information during cluster partitioning. Hence, to avoid the serious issue arising due to such improper dataset, the proposed method uses a link based cluster ensemble technique uses weighted triple quality and multi-view point using entropy and similarity measurement, respectively. It ensembles the objects into clusters by suitably eliminating the local optimal problem and the quality of clustering is improved by reducing the high dimensional datasets. The clustering is performed using hybrid particle Swarm Optimization (PSO)-Shuffled Frog Leaping Algorithm (SFLA) algorithm. The proposed method is evaluated on categorical datasets to test its effectiveness in terms of Clustering Accuracy (CA), Normalized Mutual Information (NMI) and Adjusted Rank Indices (ARI). The results shows that the proposed approach attains better finalized clusters than the other conventional methods. © 2019 SERSC.

**Publisher:** Science and Engineering Research Support Society

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 9) Sampath Dakshina Murthy, A.<sup>a</sup>, Satyanarayana Murthy, P.<sup>a</sup>, Rajesh, V.<sup>b</sup>, Hasane Ahammad, S.<sup>b</sup>, Omkar Lakshmi Jagan, B.<sup>c</sup>

**Execution of natural random forest machine learning techniques on multi spectral image compression**  
(2019) *International Journal of Pharmaceutical Research*, 11 (4), pp. 1241-1255.

<sup>a</sup> Department of Electronics and Communication Engineering, Vignan's Institute of Information Technology, Duvvada, Visakhapatnam, AP, India

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#### Abstract

Multispectral Image Compression (MSIC) is an ebb and flow commanding test theme in explore consideration. Satellite correspondences, radars, detecting territory advances are constantly observing the earth, space and condition. In the aggressive world sources, for example, control, stockpiling, additionally performing capability remain limitedly accessible. In this procedure multi otherworldly picture handling strategies and techniques prerequisite is vital like geological data, optical data, calamity checking water wells etc. So, Image quality pressure, assaults, histogram levelling, AI factual parameters should be improving. Existing strategies essentially dependent on grid-based demonstrating, DWT systems division techniques, low position tensor deterioration, however they are neglect to find the distinctive strip segments. Like, AI additionally didn't take care of the issues of otherworldly excess, sub groups evacuating models. In this exploration we are utilizing characteristic irregular woods AI model (NRFML). This model pack and train the multi phantom picture, at conclusive looking at the parameters like MSE, PSNR, NCC, SSIM. © 2019, Advanced Scientific Research. All rights reserved.

**Publisher:** Advanced Scientific Research

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 10) Sivananthamaitrey, P.<sup>a</sup>, Venkata Krishna, V.<sup>a</sup>, Ramesh, A.P.<sup>b</sup>, Satyanarayana Murty, P.<sup>c</sup>

**A dual security scheme based on DWT for personnel authentication**  
(2019) *International Journal of Engineering and Advanced Technology*, 9 (1), pp. 598-602.

**DOI:** 10.35940/ijeat.A9740.109119

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#### Abstract

A biometric identification system that audits the presence of a person using real or behavioral features is safer than passwords and number systems. Present applications are mostly recognize an individual using the single modal biometric system. However, a single characteristic sometimes fails to authenticate accurately. Multimodal biometric technologies solve the problems that exist in the single biometric systems. It is very hard to identify images with low lighting environments using facial recognition system. By utilizing fingerprint recognition, this issue can be better addressed. This paper presents a dual personnel authentication system that incorporates face and fingerprint to improve security. For face identification, the Discrete Wavelet Transform (DWT) algorithm is used to acquire features from the face and fingerprint pictures. The technique used to integrate fingerprint and face is decision level fusion. By adding fingerprint recognition to the scheme, the proposed algorithm decreases the false rejection rate (FRR) in the face and fingerprint recognition and hence increases the accuracy of the authentication. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 11) Raveendra Kiran, M.<sup>a b</sup>, Ulla, H.<sup>b</sup>, Satyanarayan, M.N.<sup>b</sup>, Umesh, G.<sup>b</sup>

**Optoelectronic properties of hybrid diodes based on vanadyl- phthalocyanine and zinc oxide nanorods thin films**  
(2019) *Optical Materials*, 96, art. no. 109348, .

**DOI:** 10.1016/j.optmat.2019.109348

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<sup>b</sup> Optoelectronics Laboratory, Department of Physics, National Institute of Technology Karnataka, Mangalore, 57502, India

**Abstract**

Herein, we report the optoelectronic properties of hybrid diodes fabricated using vanadyl phthalocyanine (VOPc) and zinc oxide nanorods (ZNR) with the configuration: ITO/ZNR/VOPc/MoO<sub>3</sub>/Al. Vertically aligned ZnO nanorods were grown using a simple aqueous solution (AS) method as a function of growth temperature. The correlation between the morphology of ZNR films and the optoelectronic properties of the ZNR/VOPc hybrid devices was investigated. The results show that the hybrid diodes with ZNR films grown at 120 °C offer the best optoelectronic properties. The higher photocurrent responsivity, R<sub>ph</sub>, (16.28 A/W) was achieved for devices with ZNR films grown at 120 °C. This value is 25 times higher than the R<sub>ph</sub> value obtained for the devices made with ZnO nanoparticle films that were reported earlier. © 2019

**Publisher:** Elsevier B.V.

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**Publication Stage:** Final

**Source:** Scopus

- 12) Sivananthamaitrey, P.<sup>a</sup>, Murthy, P.S.N.<sup>b</sup>, Rajesh Kumar, P.<sup>a</sup>

**Multifaceted watermarking of medical images using SWT and SVD**  
(2019) *International Journal of Advanced Science and Technology*, 28 (7), pp. 1-14.

<sup>a</sup> Department of Electronics and Communication Engineering, Andhra University College of Engineering (A), Visakhapatnam, AP, India

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**Abstract**

Radiological image transmission over network is extensively increased. A slight alteration of the image may lead to faulty diagnosis. To better address this problem, a high capacity watermarking technique with tamper localization capability for various medical image modalities is proposed. Two equal sized watermarks as that of cover image has been embedded. Stationary Wavelet Transform (SWT) followed by Singular Value Decomposition (SVD) is employed to embed patient data as one of the watermarks for ownership identification. Tamper detection and localization is accomplished by embedding a fragile watermark using Least Significant Bit (LSB) replacement method. Experimental results prove that this approach attains excellent robustness and significantly better imperceptibility while precisely locating the invisible tampers in the image. This approach is evaluated against state of the art techniques and verified to be outperformed. This scheme not only focuses on robustness and imperceptibility but also maximizes embedding capacity in addition to tamper localization that constitutes this method a multifaceted watermarking scheme. © 2019 SERSC.

**Publisher:** Science and Engineering Research Support Society

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 13) Subagja, I.K.<sup>a</sup>, Amaliyah, N.<sup>b</sup>, Hierny, U.<sup>c</sup>, Rahardjo, B.T.<sup>a</sup>, Laxmi Lydia, E.<sup>d</sup>, Shankar, K.<sup>e</sup>, Nguyen, P.T.<sup>f</sup>

**Evaluation of big data analytics in medical science**  
(2019) *International Journal of Engineering and Advanced Technology*, 8 (6 Special Issue 3), pp. 717-720.

**DOI:** 10.35940/ijeat.F1132.0986S319

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#### Abstract

In medical science the concept of big data is very important because in the diseases prevention outcome prediction of co-morbidities, mortality and it save the cost of medical treatment it can used. In the evolution of healthcare research and practices the continuously growing field of analytics of big data has play a pivotal role. To analyze, accumulate, assimilate and manage huge volume of structured, disparate and unstructured data that produced by recent system of healthcare, it provide the tools. To inform providers about most effective and efficient treatment pathways and to revamp the health care delivery process the big data of healthcare has the potential. Both insurers and health care providers are incenting by Value-based purchasing programs. To estimate the efficiency and quality of care to find the new ways to leverage health care data defined the insurers. During routine health care in data collection current advances in the form of EHR (Electronic Health Records), for clinical application in biological discoveries medical device data have created major opportunities. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 14) Irmawati, S.<sup>a</sup>, Cakrawijaya, M.H.<sup>a</sup>, Lydia, E.L.<sup>b</sup>, Shankar, K.<sup>c</sup>, Nguyen, P.T.<sup>d</sup>

#### Medical information retrieval for healthcare: The challenges

(2019) *International Journal of Engineering and Advanced Technology*, 8 (6 Special Issue 3), pp. 811-814.

**DOI:** 10.35940/ijeat.F1156.0986S319

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#### Abstract

The Medical Information Retrieval (MIR) refers to collect datasets from research agencies, institutes, medical clinical or data from research organizations like hospitals etc and use this information for further experiments for the betterment to get new solutions for the complex health diseases. The purpose of such kind of information retrieval system is to improve the healthcare system, diagnose the disease in less time and try to provide better alternate treatment solutions to the patients. Today the internet has connected the whole world and it is very easy for the medical research organizations to exchange the medical data and exchange the test results. They are not required to do the same experiments again which has already done in any of the country. The research or healthcare research organizations can perform the next level of experiments with the help of collected medical information from the researchers of one country. Even the countries can share the medical information and they can combine do the medical experiments with the retrieved information. However in this research it is tried to study the importance of Medical Information Retrieval and its methods and it is also studied how it is useful in Healthcare. In this study it is noted that there are several challenges the research have to face. Because the different countries have different languages. The medical terms are different in different countries so that sometimes it is difficult to synchronies the retrieved information from different sources. One biggest challenge is that it is not possible to get the accuracy of the data. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

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**Source:** Scopus

- 15) Rahman, W.<sup>a</sup>, Nguyen, P.T.<sup>b</sup>, Rusliyadi, M.<sup>c</sup>, Laxmi Lydia, E.<sup>d</sup>, Shankar, K.<sup>e</sup>

#### Network monitoring tools and techniques uses in the network traffic management system

(2019) *International Journal of Recent Technology and Engineering*, 8 (2 Special Issue 11), pp. 4182-4188.

**DOI:** 10.35940/ijrte.B1603.0982S1119

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<sup>b</sup> Department of Project Management, Ho Chi Minh City Open University, Viet Nam

<sup>c</sup> Polytechnic of Agricultural Development Yogyakarta-Magelang, Agricultural Extension and Human Resource Development Agency, Ministry of Agriculture, Indonesia

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**Abstract**

Network Monitoring Tools, Vendors and software's domain is huge, without a doubt. For server IT monitoring and in an ever changing marketplace new utilities, tools and software are being invented pretty much consistently. We have experienced the same number of devices as we could discover and gathered together the best ones in simple to peruse position and featured their fundamental qualities and why it think they are in the top class of instruments to use in IT framework and business. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 16) Nasution, J.<sup>a</sup>, Nguyen, P.T.<sup>b</sup>, Rusliyadi, M.<sup>c</sup>, Laxmi Lydia, E.<sup>d</sup>, Shankar, K.<sup>e</sup>

**Ontology based text mining framework for vulnerability assessment in health and social care**

(2019) *International Journal of Recent Technology and Engineering*, 8 (2 Special Issue 11), pp. 3809-3813.

**DOI:** 10.35940/ijrte.B1500.0982S1119

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**Abstract**

The measure of advanced data that is made and utilized is gradually growing alongside the development of refined equipment and programming. What's more, true information arrive in a decent variety of structures and can be massively cumbersome. This has increased the requirement for great procedures that can find and uncover engaging realities and valuable data from these information. Text Mining (TM), which is an intricate procedure; has been effectively utilized for this reason. Text mining on the other hand alluded to as content data mining, pretty much identical to content examination, can be characterized as the way toward extricating great data from content. Text mining includes the way toward organizing the information, determining designs inside the organized information and in conclusion translation and disclosure of the yield. This paper gives overview on Text mining. Toward the end, this paper presents ontology system to adapt up to extreme social media textual data. We depict vulnerability assessment model intended to help patient management in health and social care. Such a framework isn't intended to supplant existing health and social assessment models but instead to supplement them by giving an all-encompassing image of the vulnerabilities looked by a given patient. Actually, it ought to be viewed as a screening tools for health and social care workers. One key part of the demonstrating structure is the capacity to give customized at this point multi-dimensional assessments of risk of dependent on fragmented data about the patient status, similar to the case in screening situations. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 17) Vijaya Kumar, K.<sup>a</sup>, Laxmi Lydia, E.<sup>b</sup>, Amaranatha Reddy, P.<sup>c</sup>

**Extended optimization procedures for static list based task scheduling algorithms for hedcs**  
(2019) *International Journal of Recent Technology and Engineering*, 8 (2 Special Issue 11), pp. 15-20.

**DOI:** 10.35940/ijrte.B1003.0982S1119

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#### Abstract

--No matter how powerful a single system is efficient at processing, there are still reasons to Control the power of multiple computational units. The Distributed computational system performs scheduling tasks achieved by the processors to minimize the execution time in any application. Despite the problem in determining NP-Complete the execution time in Scheduling is minimized. This paper identifies, a specific different algorithm Sorted Nodes in Leveled DAG Division (SNLDD) based on Task-Scheduling. The fundamental principle of this algorithm is to partition the data as a Directed Acyclic Graph (DAG) two stages and categorize each task of every stage in decreasing order depending upon the estimated size. Outcomes of the proposed algorithm are processed using correlative analysis and productive outcome with respect to HEFT with CPOP is implemented among existing algorithms. With respect to the comparative analysis of the outcomes, the performance of the suggested algorithm with SPOP implements improved execution in the aspect of speedup, effectiveness, complexity, and excellence. Further, a new algorithmic strategy SPOP and CPOP has been developed and executed in the proposed SNLDD in HEFT. ©BEIESP.

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**Source:** Scopus

- 18) Rosita, R.<sup>a</sup>, Ruslianor Maika, M.<sup>b</sup>, Nguyen, P.T.<sup>c</sup>, Laxmi Lydia, E.<sup>d</sup>, Shankar, K.<sup>e</sup>

**Concept of electronic business: A wider range of businesses processes**

(2019) *International Journal of Recent Technology and Engineering*, 8 (2 Special Issue 11), pp. 3849-3852.

**DOI:** 10.35940/ijrte.B1509.0982S1119

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#### Abstract

E-business (electronic business) is the conduct of business processes on the internet. These e-business processes include buying and selling products, supplies and services; servicing customers; processing payments; managing production control; collaborating with business partners; sharing information; running automated employee services; recruiting; and more. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 19) Heikal, M.<sup>a</sup>, Ciptaningsih, E.M.S.S.<sup>b</sup>, Nguyen, P.T.<sup>c</sup>, Laxmi Lydia, E.<sup>d</sup>, Shankar, K.<sup>e</sup>

**Role of electronic human resources management systems in the growth of web based business**

(2019) *International Journal of Recent Technology and Engineering*, 8 (2 Special Issue 11), pp. 3814-3817.

**DOI:** 10.35940/ijrte.B1501.0982S1119

<sup>a</sup> Universitas Malikussaleh, Indonesia

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<sup>e</sup> Department of Computer Applications, Alagappa University, India

### Abstract

Activity of face to face human resource management is replacing with electronic human resource management (E-HRM) in many organizations. For creating operational and dynamic capabilities and on effectiveness of HRM contributes greatly the term E-HRM facilitates the functions of HRM. Within an organization it can consider that electronic human resource is the function of human resource that is focused with regulation, use and management of electronic processes and information. For web based business applications electronic human resource management plays an important role. As management is done through online is taking less resources and time. © BEIESP.

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**Source:** Scopus

- 20) Seetha Rama Rao, Y.<sup>a</sup>, Lakshmi, R.<sup>a</sup>, Ramakrishna, C.S.<sup>b</sup>, Murthy, A.S.D.<sup>c</sup>, Subba Rao, K.V.<sup>b</sup>

### An experimental research on vibration evaluation of laminated hybrid composite

(2019) *International Journal of Recent Technology and Engineering*, 8 (2 Special Issue 11), pp. 3163-3166.

**DOI:** 10.35940/ijrte.B1413.0982S1119

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<sup>c</sup> Department of ECE, Vignan's Institute of Information Technology, Visakhapatnam, A.P, India

### Abstract

Conceptual: the prevailing studies pattern in composite is for the improvement of composite with carbon fiber. it is critical to dissect the vibration conduct of composite for powerful use in severa programs in order that they enjoy with one of a kind styles of stacking situation and exclusive types of vibration with various stacking association of filaments. CFRP has high solidness and slight-weight houses with the intention that their programs had been numerous. in any case, CFRP reviews a immoderate recurrence vibration. on this paper, the impact of basalt fiber hybridization to lessen vibration of carbon fiber pondered via test affiliation. The ends informed that the hybridization of basalt fiber to the carbon fiber and stacking succession have been impressively inspired and diminishes vibration. not unusual recurrence and damping share of half of breed overlaid composites have been received through wearing on exploratory modular research. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

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**Publication Stage:** Final

**Source:** Scopus

- 21) Ridwan<sup>a</sup>, Sukarman<sup>b</sup>, Laxmi Lydia, E.<sup>c</sup>, Shankar, K.<sup>d</sup>, Nguyen, P.T.<sup>e</sup>

### Strategies of successfully managing personal finances for system excellence

(2019) *International Journal of Recent Technology and Engineering*, 8 (2 Special Issue 11), pp. 3818-3821.

**DOI:** 10.35940/ijrte.B1502.0982S1119

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### Abstract

Managing the money, saving and investing terms are come in to Personal finance. The term Personal finance includes mortgages, estate planning, investments, budgeting, insurance, banking and tax planning. The complete industry that

provide any kind of financial services to households and individuals person often refers as Personal finance. The Personal finance management provides advises related to investment and financial opportunities. It needs to build an efficient personal finance management process for getting the system excellence. Strategies of personal finance are discussed in this paper. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 22) Diawati, P.<sup>a</sup>, Nguyen, P.T.<sup>b</sup>, Rusliyadi, M.<sup>c</sup>, Laxmi Lydia, E.<sup>d</sup>, Shankar, K.<sup>e</sup>

**Examination of business transformation strategy: Building bridges between IT and the business**

(2019) *International Journal of Recent Technology and Engineering*, 8 (2 Special Issue 11), pp. 3845-3848.

**DOI:** 10.35940/ijrte.B1508.0982S1119

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**Abstract**

It can see that volatility of business cannot precedence. The transformation is not an option; it is imperative of business with cause of new technologies and, blurred industry boundaries, energy dynamics, globalization, regulation, digitalization or other factors. For staying ahead thinking companies launch transformations even when they retooling themselves or dominate a market. The objective of business transformations are always can deliver emulated results, sustainable and focused. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 23) Seetha Rama Rao, Y.<sup>a</sup>, Lakshmi, R.<sup>a</sup>, Siva Ramakrishna, C.<sup>b</sup>, Sampath Dakshina Murthy, A.<sup>c</sup>, Subbarao, K.V.<sup>b</sup>

**Vibration evaluation of laminated hybrid composite using finite element**

(2019) *International Journal of Recent Technology and Engineering*, 8 (2 Special Issue 11), pp. 3171-3177.

**DOI:** 10.35940/ijrte.B1415.0982S1119

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<sup>c</sup> Department of ECE, Vignan's Institute of Information Technology, Visakhapatnam, A.P, India

**Abstract**

Conceptual: the winning studies sample in composite is for the development of composite with carbon fiber. it's far crucial to break down the vibration behavior of composite for powerful usage in severa applications so that they experience with one-of-a-type types of stacking scenario and particular varieties of vibration with numerous stacking succession of filaments. CFRP s have immoderate firmness, and light-weight homes so their packages had been diverse. Be that as it may, CFRP s enjoy the ill effects of a high recurrence vibration. in this paper, numerical examinations have been finished to don't forget vibration behavior of composite overlaid shafts the use of ANSYS 18.1 programming. From the results, the effect of fiber stacking succession at the common frequencies are researched. ©BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 24) Raghuram, K.S.<sup>a</sup>, Padhi, S.N.<sup>b</sup>, Harisha, P.<sup>a</sup>, Balaji, S.<sup>c</sup>, Leela Kumar, K.<sup>c</sup>

**Simulation of heat dissipation behaviour in grooved heat pipe**

(2019) *International Journal of Innovative Technology and Exploring Engineering*, 8 (11), pp. 71-74.

**DOI:** 10.35940/ijitee.J9943.0981119

<sup>a</sup> Department of Mechanical engineering, Vignan's Institute of Information Technology, Visakhapatnam, AP, India

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**Abstract**

Having high and most effective thermal conductance value heat pipe is widely used for heat transformation. The heat pipe is having unique properties like compact size, light weight and indirect conductance. The heat pipe is used in the cooling of electronic components of computer applications, controlling of temperature in aerospace parts, excess heat recovery in exhaust gases of internal combustion engines. Heat pipes with rectangular cross section can be used for handling large heat transfer sections when weight and space are considered. The working medium that is entrapped in the heat pipe is under phase change from liquid to vapor and vice versa. The vapor condenses in the condenser region by removing heat to the sink and back to the evaporator passing through the porous wick using capillary pumping pressure for re-evaporation. There will be pressure drop in the wick and vapor channel volume. The simple theory of the heat pipe enumerates the capillary pressure in the wick should be more than the sum of the pressure drops in the vapor core and pressure drop in the wick. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 25) Padhi, S.N.<sup>a</sup>, Raghuram, K.S.<sup>b</sup>, Rout, T.<sup>c</sup>, Naga Sudha, V.<sup>d</sup>, Kumar, G.S.<sup>d</sup>

**Mechanical property variation of a rotating cantilever FGSW beam under parametric excitation**

(2019) *International Journal of Innovative Technology and Exploring Engineering*, 8 (11), pp. 495-499.

**DOI:** 10.35940/ijitee.K1416.0981119

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**Abstract**

We report here the dynamic stability of functionally graded sandwich (FGSW) rotating cantilever Timoshenko beams under parametric excitation. Power law with various indices as well as exponential law were used to find out the properties along the thickness of the FGSW beam. The stability boundaries were established using Floquet's theory. The equation of motion was governed by Hamilton's principle and solved by Finite element method. The power index was optimized for uniform variation of shear modulus along the thickness of FGSW beam. The shear modulus variation along the thickness of the FGSW beam was compared both by power law and exponential law. It has been confirmed that the Exponential distribution of constituent phases renders better stability compared to power law distribution of the phases in the functionally graded material (FGM). © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 26) Bindu Duvuru, H.<sup>a</sup>, Alla, S.K.<sup>b c</sup>, Shaw, S.K.<sup>b</sup>, Meena, S.S.<sup>d</sup>, Gupta, N.<sup>e</sup>, Prasad, B.B.V.S.V.<sup>f</sup>, Kothawale, M.M.<sup>g</sup>, Kumar, M.K.<sup>a</sup>, Prasad, N.K.<sup>b</sup>

**Magnetic and dielectric properties of Zn substituted cobalt oxide nanoparticles**

(2019) *Ceramics International*, 45 (13), pp. 16512-16520.

**DOI:** 10.1016/j.ceramint.2019.05.185

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#### Abstract

Zinc-substituted cobalt oxide nanoparticles ( $Zn_xCo_{3-x}O_4$ ,  $0 \leq x \leq 0.5$ ) were produced by microwave refluxing technique. The structural, microstructural and magnetic properties of these samples were studied using X-ray diffractometer (XRD), scanning electron microscope (SEM), transmission electron microscope (TEM) and magnetic property measurement system (MPMS) respectively. XRD and TEM analyses confirmed the single phase nature for all the samples. Rietveld analysis of the samples further confirmed the substitution of Zn-ions into the  $Co_3O_4$  lattice. The chemical states of the elements were studied using X-ray photoelectron spectroscopy (XPS), which suggest the presence of  $Zn^{2+}$ ,  $Co^{2+}$ , and  $Co^{3+}$  ions in the samples. The maximum saturation magnetization (MS) values of 0.33 Am<sup>2</sup>/kg was obtained for  $x = 0.01$  sample, and then it continuously reduced with increased Zn content. The dielectric property of the samples was studied in the frequency range of 40 Hz–110 MHz. The samples  $x = 0.05$  and 0.5 displayed the lowest conductivity due to the narrow size distribution of grains. © 2019 Elsevier Ltd and Techna Group S.r.l.

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**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 27) Yanto, A.F.<sup>a</sup>, Nguyen, P.T.<sup>b</sup>, Laxmi Lydia, E.<sup>c</sup>, Shankar, K.<sup>d</sup>, Abadi, S.<sup>a</sup>, Hashim, W.<sup>e</sup>, Maseleno, A.<sup>e</sup>

#### Application design of catfish species specification

(2019) *International Journal of Engineering and Advanced Technology*, 8 (6 Special Issue 2), pp. 1013-1017.

**DOI:** 10.35940/ijeat.F1308.0886S219

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#### Abstract

The system is a program inside of the computer and the task is to complete specific need or task. In its development, the system program has been developed for various fields, for example in determining the specification of catfish species. Catfish is a type of fish that live in fresh water. Catfish is easily recognized because their body is slippery, slightly flat elongated, and has long "mustache" that sticks out from around the mouth. Therefore, the researchers wrote this paper to improve service for the society and to facilitate the community in determining the type of catfish. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 28) Huda, S.<sup>a</sup>, Setiyadi, D.B.P.<sup>b</sup>, Laxmi Lydia, E.<sup>c</sup>, Shankar, K.<sup>d</sup>, Nguyen, P.T.<sup>e</sup>, Hashim, W.<sup>f</sup>, Maseleno, A.<sup>f</sup>

#### Natural language processing utilization in healthcare

(2019) *International Journal of Engineering and Advanced Technology*, 8 (6 Special Issue 2), pp. 1117-1120.

**DOI:** 10.35940/ijeat.F1305.0886S219

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### Abstract

The significance of consolidating Natural Language Processing (NLP) techniques in clinical informatics research has been progressively perceived over the previous years, and has prompted transformative advances. Ordinarily, clinical NLP frameworks are created and assessed on word, sentence, or record level explanations that model explicit traits and highlights, for example, archive content (e.g., persistent status, or report type), record segment types (e.g., current meds, past restorative history, or release synopsis), named substances and ideas (e.g., analyses, side effects, or medicines) or semantic qualities (e.g., nullification, seriousness, or fleetingness). While some NLP undertakings consider expectations at the individual or gathering client level, these assignments still establish a minority. Here we give an expansive synopsis and layout of the difficult issues engaged with characterizing suitable natural and outward assessment strategies for NLP look into that will be utilized for clinical results research, and the other way around. A specific spotlight is set on psychological wellness investigate, a zone still generally understudied by the clinical NLP look into network, however where NLP techniques are of prominent importance. Ongoing advances in clinical NLP strategy improvement have been huge, yet we propose more accentuation should be put on thorough assessment for the field to progress further. To empower this, we give noteworthy recommendations, including an insignificant convention that could be utilized when announcing clinical NLP strategy improvement and its assessment. © BEIESP.

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**Publication Stage:** Final

**Source:** Scopus

29) Iswanto, I.<sup>a</sup>, Setiawan, W.<sup>b</sup>, Laxmi Lydia, E.<sup>c</sup>, Shankar, K.<sup>d</sup>, Nguyen, P.T.<sup>e</sup>

### Machine learning for healthcare

(2019) *International Journal of Engineering and Advanced Technology*, 8 (6 Special Issue 2), pp. 954-959.

**DOI:** 10.35940/ijeat.F1289.0886S219

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### Abstract

ML gives techniques, frameworks, and devices that can help dealing with demonstrative and prognostic issues in a collection of therapeutic domMLns. MI (ML) thinks about calculations which can gMLn from information to gMLn learning for a fact and to settle on choices and forecasts. Wellbeing Informatics (HI) examines the viable utilization of probabilistic data for basic leadership. The blend of the two can possibly rMLse quality, adequacy and proficiency of treatment and care. ML is being used for the assessment of the hugeness of clinical parameters and their blends for expectation, for instance desire for Mllment development, extraction of therapeutic learning for result investigate, treatment masterminding and support, and for the general patient organization. Wellbeing frameworks worldwide are gone up agMlnst with "enormous information" in high measurements, where the incorporation of a human is unthinkable and programmed ML (aML) show amazing outcomes. Be that as it may, in some cases we are gone up agMlnst with complex information, "little information", or uncommon occasions, where aML approaches endure of inadequate trMLning tests. It is fought that the productive execution of ML techniques can help the blend of PC based systems in the social protection condition offering opportunities to energize and overhaul made by therapeutic authorities and finally to improve the adequacy and nature of remedial thought. Underneath, we layout some genuine ML applications in drug. This paper additionally present medicinal services determination treatment and counteractive action of sickness, Mllment, damage in human. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication



**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

- 30) Iswanto, I.<sup>a</sup>, Laxmi Lydia, E.<sup>b</sup>, Shankar, K.<sup>c</sup>, Nguyen, P.T.<sup>d</sup>, Hashim, W.<sup>e</sup>, Maseleno, A.<sup>e</sup>

**Identifying diseases and diagnosis using machine learning**

(2019) *International Journal of Engineering and Advanced Technology*, 8 (6 Special Issue 2), pp. 978-981.

**DOI:** 10.35940/ijeat.F1297.0886S219

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**Abstract**

The method that is use to optimize the criterion efficiency that depend on the previous experience is known as machine learning. By using the statistics theory it creates the mathematical model, and its major work is to surmise from the examples gave. To take the data straightforwardly from the information the approach uses computational methods. For recognize and identify the disease correctly a pattern is very necessary in Diagnosis recognition of disease. for creating the different models machine learning is used, this model can use for prediction of output and this output is depend on the input that is related to the data which previously used. For curing any disease it is very important to identify and detect that disease. For classify the disease classification algorithms are used. It uses are many dimensionality reduction algorithms and classification algorithms. Without externally modified the computer can learn with the help of the machine learning. For taking the best fit from the observation set the hypothesis is selected. Multi-dimensional and high dimensional are used in machine learning. By using machine learning automatic and classy algorithms can build. © BEIESP.

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**Publication Stage:** Final  
**Source:** Scopus

- 31) Ambika, P.<sup>a</sup>, Laxmi Lydia, E.<sup>b</sup>, Shankar, K.<sup>c</sup>, Nguyen, P.T.<sup>d</sup>, Abadi, S.<sup>e</sup>

**Logistic regression for health profiling**

(2019) *International Journal of Engineering and Advanced Technology*, 8 (6 Special Issue 2), pp. 974-977.

**DOI:** 10.35940/ijeat.F1294.0886S219

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**Abstract**

In an event when there is lots of risk factor then the logistic regression is used for predicting the probability. For binary and ordinal data the medical researcher increase the use of logistic analysis. Several classification problems like spam detection used logistic regression. If a customer purchases a specific product in Diabetes prediction or they will inspire with any other competitor, whether customer click on given advertisement link or not are some example. For two class classification the Logistic Regression is one of the most simple and common machine Learning algorithms. For any binary classification problem it is very easy to use as a basic approach. Deep learning is also its fundamental concept. The relationship measurement and description between dependent binary variable and independent variables can be done by logistic regression. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

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**Publication Stage:** Final  
**Source:** Scopus

- 32) Sutjiatmo, B.P.<sup>a</sup>, Erwinsyah, A.<sup>b</sup>, Laxmi Lydia, E.<sup>c</sup>, Shankar, K.<sup>d</sup>, Nguyen, P.T.<sup>e</sup>, Hashim, W.<sup>f</sup>, Maselena, A.<sup>f</sup>

**Empowering internet of things (IoT) through big data**

(2019) *International Journal of Engineering and Advanced Technology*, 8 (6 Special Issue 2), pp. 938-942.

**DOI:** 10.35940/ijeat.F1285.0886S219

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**Abstract**

The coming of new advancements, devices and union of remote correspondence, computerized hardware, and miniaturized scale electro-mechanical frameworks (MEMS) advances have brought about the development of Internet of Things (IoT) which thusly delivers an enormous measure of information. IoT helps in diminishing expenses and expanding income, however at the expense of creating tremendous information. The organization of colossal data in an always stretching out framework offers rise to non-irrelevant worries as for data gathering capability, data planning, assessment, and security. This paper describe the benefits of big data in IOT. And also describe architecture and various applications of IOT. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

- 33) Harjanto, A.<sup>a</sup>, Hidayat, N.<sup>a</sup>, Tanod, M.J.<sup>a</sup>, Wahyudi, A.<sup>b</sup>, Irawan, D.<sup>b</sup>, Nguyen, P.T.<sup>c</sup>, Lydia, E.L.<sup>d</sup>, Shankar, K.<sup>e</sup>

**Online games, brain and communication ability**

(2019) *International Journal of Engineering and Advanced Technology*, 8 (6 Special issue), pp. 732-734.

**DOI:** 10.35940/ijeat.F1177.0886S19

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**Abstract**

This study outlines the literature relevant to the effects of online games issues and the positive and negative effects of online games on child brain and communicative ability. Recent study, online games are now increasingly used for purposes other than entertainment. These games play on role in fields as diverse as education, cognitive training, physical exercise, and rehabilitation. Using games, which is communicative essence are often considered effective in developing child communicative ability. In this review, the result from the literature review indicate a number of gaps in the present framework. As a result, can guide teachers and parents to be able to know the processes that occur in the online game for child. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article  
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**Source:** Scopus

- 34) Raghu Ram, K.S.<sup>a</sup>, Hemanth, B.<sup>a</sup>, Ajay Kumar, D.<sup>b</sup>, Subba Rao, K.V.<sup>a</sup>

**Room temperature reducing ECO cooler made from waste plastic bottles**

(2019) *JP Journal of Heat and Mass Transfer*, 17 (2), pp. 303-307.

**DOI:** 10.17654/HM017020303

<sup>a</sup> Department of Mechanical Engineering, Vignan's Institute of Information Technology, Visakhapatnam, A.P, India

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**Abstract**

Summer is in full swing and many of us are complaining about the heat. But few places reach the scorching temperatures where air conditioning is simply not an option for most people living in rural areas. A clever DIY cooling system that does not require electricity is built from common waste items such as empty plastic bottles. We call it a eco cooling system. The working is based on the principle that when the compressed air expands through the nozzle, the swirl motion is created. The air moves as a free vortex from the nozzle plane towards the valve end. As it reaches near the valve, the kinetic energy is converted into the pressure energy giving a point of stagnation. © 2019 Pushpa Publishing House, Prayagraj, India.

**Publisher:** Pushpa Publishing House

**Document Type:** Article

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**Source:** Scopus

- 35) Muruganantham, A.<sup>a</sup>, Nguyen, P.T.<sup>b</sup>, Lydia, E.L.<sup>c</sup>, Shankar, K.<sup>d</sup>, Hashim, W.<sup>e</sup>, Maseleno, A.<sup>e</sup>

**Big data analytics and intelligence: A perspective for health care**

(2019) *International Journal of Engineering and Advanced Technology*, 8 (6 Special Issue), pp. 861-864.

**DOI:** 10.35940/ijeat.F1162.0886S19

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**Abstract**

The term big data refers to a group of large and vast amount of data collected from many research organizations, hospitals and scientific organizations which can be available for the healthcare. Such big data have potential for improving in the research in healthcare. The big data helps to analyze the clinical datasets and provides the key insights for the patients care. Such data can be analyzed by several multidisciplinary methods. The big data and intelligence model also helps to provide support in taking recommend action and make the decision making model more strong. The Healthcare medical artificial intelligence system mainly uses a computer software to perform the health and clinical diagnoses and suggest the proper treatments. Predictive analysis is also the most important part of Big Data Analytics which use datasets and historical data to make the predictions about the disease. But such predictions results may vary for person to person. Every person have different immunity power, so an detailed research may help to lead better results. There are many techniques and algorithms are available such as PPDM, Machine Learning, Data Mining Algorithms, Artificial Intelligence etc. In this research it is studied that how health care data can helps patients in predicting diseases and improve the treatment. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

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**Publication Stage:** Final

**Source:** Scopus

- 36) Asih, E.S.<sup>a</sup>, Kasmi<sup>a</sup>, Nguyen, P.T.<sup>b</sup>, Lydia, E.L.<sup>c</sup>, Shankar, K.<sup>d</sup>, Hashim, W.<sup>e</sup>, Maseleno, A.<sup>e</sup>

**Mobile E-commerce website for technology-based buying selling services**

(2019) *International Journal of Engineering and Advanced Technology*, 8 (6), pp. 884-888.

**DOI:** 10.35940/ijeat.F1167.0886S19

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#### **Abstract**

Buying and selling mobile phones which located at Raya Kedondong Street Waylima Subdistrict, Pesawaran District is a store that is engaged to develop, improving, and promoting the store so that it can be known outside the region. So with this, it is necessary to give easy service to the customers who are far from reach. It can be realized by (E-Commerce). Then an application system was built to help the service information about buying and selling mobile phones which uses the SDLC method, that will produce an information system related to buying and selling mobile phones. With this application, it will help the seller in managing data of ordering goods, customer data, and facilitate consumers in finding information about prices and brands of mobile phones. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

37) Diswantika, N.<sup>a</sup>, Wahyudi, A.<sup>b</sup>, Irawan, D.<sup>b</sup>, Nguyen, P.T.<sup>c</sup>, Laxmi Lydia, E.<sup>d</sup>, Shankar, K.<sup>e</sup>

#### **Efforts to overcome mathematics learning difficulty for dislexic discalcular of elementary school students**

(2019) *International Journal of Engineering and Advanced Technology*, 8 (6 Special issue), pp. 932-936.

**DOI:** 10.35940/ijeat.F1176.0886S19

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#### **Abstract**

For some people with dyslexia, success in the field of mathematics may be something that must be achieved with great struggle. There are various studies that report this problem that 10% of dyslexic children are geniuses in mathematics and show very good achievements in mathematics, but there are a majority of people with dyslexia experience dyscalculia or learning difficulties in mathematics. To overcome this requirement, an effort or strategy can make children absorb and understand learning mathematics well and can learn normally. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

38) Khasanah<sup>a</sup>, Sumardiyono<sup>b</sup>, Nguyen, P.T.<sup>c</sup>, Laxmi Lydia, E.<sup>d</sup>, Shankar, K.<sup>e</sup>

#### **Exploration of retinopathy disease using machine learning methodology**

(2019) *International Journal of Engineering and Advanced Technology*, 8 (6 Special issue), pp. 914-921.

**DOI:** 10.35940/ijeat.F1173.0886S19

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### Abstract

The whole world is affected with the problem of Diabetic Retinopathy. Whenever a patient has diabetes, it starts affects human body sensitive parts. So the situation becomes very dangerous for the person. Here in this research work it is tried to detect Hemorrhages and micro aneurysms in multiple fundus images collected from various research institutes worldwide and available datasets. In initial it is required to separate RGB colors from the image. The green color is used for further processing. Further the grey color image is extracted for getting the texture of the input image. The feature extraction algorithms are used to classification. So that it is possible to predict the current situation of the retinal image. Once the situation is classified the segmentation algorithms are used using adaptive thresholding segmentation. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 39) Siburian, R.H.S.<sup>a</sup>, Karolina, R.<sup>b</sup>, Nguyen, P.T.<sup>c</sup>, Lydia, E.L.<sup>d</sup>, Shankar, K.<sup>e</sup>

### Leaf disease classification using advanced SVM algorithm

(2019) *International Journal of Engineering and Advanced Technology*, 8 (6 Special Issue), pp. 712-718.

**DOI:** 10.35940/ijeat.F1138.0886S19

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### Abstract

Presently there are many alternates of pesticides and unfortunately a very big portion of the industry is relies and using such poisons to protects crops to prevent from bugs attack and spreading of infection. Such pesticides are seriously very harmful and used unorganic chemicals. Even some of such pesticides are beneficial for insects too. Even some times there is also an possibility that such chemicals may be automatically washed during rain or watering the crops. So the research since years on green house agro system focus on early pest detection. Such methodology focus on observing plants by camera. The images captured by cameras can be used to analyzed that weather the plants are infected or not. A number of methods and algorithms such as color conversion, segmentation, k-mean, knn etc are used to classified such images. This research is focusing on the interpretation of image for early stage pest detection so that the crop should be prevented from damage. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 40) Deepika, K.K.<sup>a b</sup>, Vijaya Kumar, J.<sup>c</sup>, Kesava Rao, G.<sup>d</sup>, Chaitanya, S.<sup>a</sup>

### Adaptive pi control of electric springs for voltage regulation under dynamic load changes

(2019) *International Journal of Innovative Technology and Exploring Engineering*, 8 (10), pp. 1051-1056.

**DOI:** 10.35940/ijitee.J9210.0881019

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**Abstract**

Due to continuous distributed generation development technology, the accessibility of wind, solar and also the renewable energy sources tends to intensify. To suppress the voltage fluctuation caused by the distributed generation electric springs had been developed. In this article an adaptive control of Electric spring is proposed, in which the gains of the PI controller are optimised by TLBO to maintain constant voltage across critical load. The proposed strategy is tested for dynamic changes in the non-critical load. Simulation results show that, for voltage fluctuations caused by the DGs and also with the dynamic load changes, ES with adaptive controller stabilize the bus voltage effectively, over ES with Fuzzy Logic Control and traditional PI control. © 2019, Blue Eyes Intelligence Engineering and Sciences Publication. All rights reserved.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

41) Narasimham, C.

**Distributed architecture for secure, attack-resilient crypto currency transactions for the classified temporal and text data**

(2019) *International Journal of Innovative Technology and Exploring Engineering*, 8 (10), pp. 2503-2505.

**DOI:** 10.35940/ijitee.J9551.0881019

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**Abstract**

In the digital world, the crypto currency has to do with the use of tokens based on the distributed ledger technology in a secure manner. Crypto currency can be a resource on a block chain network or can be seen as a tool to perform the transactions ensuring the privacy and security. Data may be available in temporal or text format. This paper describes about the distributed architecture for secure and attack-resilient bit coin-based crypto currency transactions for classified temporal and text data. The temporal data may be voice, sound or graphical information basing on the time series. If the data available is temporal this work describes about how it can be classified into a processed form. In this context, this paper describes the process of converting temporal data into text data. Further, the paper describes about the process of ensuring the security. This paper describes about the methodologies of cryptography-based hashing, attack-resilient nonce generation and verifiable encryption techniques for the construction of resilient transactions against stealthy data-integrity attack. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

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**Genomics and machine learning**

(2019) *International Journal of Engineering and Advanced Technology*, 8 (5 Special Issue 3), pp. 414-417.

**DOI:** 10.35940/ijeat.E1088.0785S319

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**Abstract**

Genomics is one of the most focused area for studying and helps to understand the nature of disease and it is an area where genetics can be deeply studied and research conclusion can be obtained. Genomics is different from genetics as genetics is the composition of only single gene but on the opposite side the genomics contains all gens and also keep track of their collectively growth during the development process of an organism. Here the datasets of DNA on the organism is called Genomic data. This datasets are further used in bioinformatics for doing experiments on collect and process for

research. For this purpose a very large storage space and specifically-built computer program is required to analyze. Genomic is also different from the proteomics because in proteomics only focuses on the proteins present in the cell. The Genomics research involves many scientific factors, which leads to identify many diseases symptoms such as heart related disease, diabetic, cancer etc. Here in this approach genomics is useful because somewhere and somehow the genetic and the external factors are causing such diseases. The purpose of deep learning with genomics is to identify the disease and learning the development structure of disease. Such research may help in treating diseases in a better way. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article  
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**Source:** Scopus

43) Paygude, P.<sup>a</sup>, Joshi, S.<sup>a</sup>, Bhattacharyya, D.<sup>b</sup>, Kim, T.-H.<sup>c</sup>

**Comparative analysis of test case prioritization approaches in regression testing**  
(2019) *International Journal of Advanced Trends in Computer Science and Engineering*, 8 (4), pp. 1260-1267.

**DOI:** 10.30534/ijatcse/2019/36842019

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#### **Abstract**

Testing is a huge time and cost consuming task in software development. Moving most of the testing strategies from manual to automation has significantly reduced time and efforts a lot. Still, regression testing pays a lot in time, effort and cost for testing the whole software for each change in the code. Thus, test case prioritization is highly researched and improved domain in last decade which covers and prioritizes all the test cases for early fault detection and cost saving. In this paper, 27 scholar articles are reviewed ranging from year 2000 to 2019. Objective of this paper is to review and compare top TCP approaches for their strengths and limitations. This comparative study will be beneficial for beginners and experts in the domain of TCP for further study. © 2019, World Academy of Research in Science and Engineering. All rights reserved.

**Publisher:** World Academy of Research in Science and Engineering

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**Source:** Scopus

44) Deepika, K.K.<sup>a b</sup>, Vijaya Kumar, J.<sup>c</sup>, Kesava Rao, G.<sup>d</sup>

**Time-domain simulations of single-phase enhanced PLL for power converters under distorted grid conditions**  
(2019) *International Journal of Recent Technology and Engineering*, 8 (2), pp. 3053-3057.

**DOI:** 10.35940/ijrteB3074.078219

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#### **Abstract**

With the developing number of alternate energy sources being connected to the Grid, there is a need for robust Grid synchronization technique that is capable enough despite the grid frequency and phase variations. Single phase Enhanced Phase Locked Loop (EPLL) presented in this paper meets these requirements. A detailed study of the performance of EPLL for disturbances in input grid voltage magnitude, phase and frequency is detailed through mathematical equations. Extensive simulations are carried out in Matlab/Simulink to analyze the phase and frequency tracking by EPLL. Dynamic response is examined carefully in terms of estimation of grid voltage, frequency and phase error. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article  
**Publication Stage:** Final

**Source:** Scopus

- 45) Laxmi Lydia, E.<sup>a</sup>, Prasad, B.<sup>a</sup>, Hima Bindu, G.<sup>b</sup>, Shankar, K.<sup>c</sup>, Vijaya Kumar, K.<sup>d</sup>

**Parallel computation performing kernel-based clustering algorithm using particle swarm optimization for the big data analytics**

(2019) *International Journal of Recent Technology and Engineering*, 8 (2), pp. 4753-4756.

**DOI:** 10.35940/ijrte.B1740.078219

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**Abstract**

Digital data has been accelerating day by day with a bulk of dimensions. Analysis of such an immense quantity of data popularly termed as big data, which requires tremendous data analysis scalable techniques. Clustering is an appropriate tool for data analysis to observe hidden similar groups inside the data. Clustering distinct datasets involve both Linear Separable and Non-Linear Separable clustering algorithms by defining and measuring their inter-point similarities as well as non-linear similarity measures. Problem Statement: Yet there are many productive clustering algorithms to cluster linearly; they do not maintain quality clusters. Kernel-based algorithms make use of non-linear similarity measures to define similarity while forming clusters specifically with arbitrary shapes and frequencies. Existing System: Current Kernel-based clustering algorithms have few restraints concerning complexity, memory, and performance. Time and Memory will increase equally when the size of the dataset increase. It is challenging to elect kernel similarity function for different datasets. We have classical random sampling and low-rank matrix approximation linear clustering algorithms with high cluster quality and low memory essentials. Proposed work: in our research, we have introduced a parallel computation performing Kernel-based clustering algorithm using Particle Swarm Optimization approach. This methodology can cluster large datasets having maximum dimensional values accurately and overcomes the issues of high dimensional datasets. ©BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

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**Source:** Scopus

- 46) Nageswara Rao, P.A.<sup>a</sup>, Sukanya, Y.<sup>b</sup>, Vijaya, T.<sup>c</sup>, Mallikarjuna Rao, P.<sup>d</sup>

**Performance analysis of pentagon shaped microstrip patch antenna with different substrate materials**

(2019) *International Journal of Recent Technology and Engineering*, 8 (2), pp. 1062-1066.

**DOI:** 10.35940/ijrte.B2019.078219

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**Abstract**

Microstrip patch antennas are the handiest antennas for the present trend of applications in communications. The well-known beneficial mechanical characteristics (low profile, light weight, planar but conformal to non-planar structures, easy to fabricate), flexibility in terms of electromagnetic parameters like radiation pattern, gain, impedance, polarization and low cost are the key features for the success of such antennas. High efficiency antennas are essential to cater the requirements of various military oriented space vehicles like spacecraft, aircraft, satellite and missile applications where dimensions of installation are important as size, weight, performance, ease of installation and easy integration to the circuit. Microstrip antenna array are most apt for such applications, but the limitation of such antennas are gain and the bandwidth. The order of gain is low for patch antenna which is generally in the choice of 1-2dB. To increase gain and bandwidth factors the utilization of material with low dielectric constant having greater thickness is employed. However, this generates surface waves. So, proper thickness of substrate is selected. In this paper, microstrip patch having pentagon shape uses probe feed technique for various substrate materials such as Roger's RT/Duroid 5880 (tm), Roger's RO4003 (tm) and FR4 epoxy. The results of the three substrate designs are acquired for the resonant frequencies 6.5 GHz, 6.6 GHz, and 6.7 GHz respectively. The whole analysis is carried out using Ansoft HFSS software version 17.0. The characteristics like bandwidth,



amplification factor (gain), return loss and radiation patterns of the different antenna are assessed, related and the same are presented at the end. © BEIESP.

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**Source:** Scopus

- 47) Leela Prasad, K.<sup>a</sup>, Anusha, P.<sup>b</sup>, Srinivasa Rao, M.<sup>b</sup>, Venkata Rao, K.<sup>a</sup>

**A machine learning based preventing the occurrence of cyber bullying messages on OSN**

(2019) *International Journal of Recent Technology and Engineering*, 8 (2), pp. 1861-1865.

**DOI:** 10.35940/ijrte.A1962.078219

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**Abstract**

The process of threaten or harassment of any user with the help of posting wrong/abused or vulgar messages using the social media in the internet is known as Cyber bullying. These messages may sometime contain a text posted by a teen, or preteen or a child who want to threaten or harassed or embarrassed other child by posting the messages. So in this project, we mainly try to propose another depiction learning strategy to handle this issue known as SEMdae. Here the semantic augmentation comprises of predefined words that contain noise or abused meaning which is posted into the database by the admin and these words are classified based on the five categories that are available in the literature like "HATE, VULGAR, OFFENSIVE, SEX, and VOILENCE". © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

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**Source:** Scopus

- 48) Laxmi Lydia, E.<sup>a</sup>, Arundhati, B.<sup>b</sup>, Vallabhaneni, M.<sup>c</sup>

**Priority towards subjective and experimental framework in teaching-learning process in engineering education for millennial learners**

(2019) *International Journal of Recent Technology and Engineering*, 8 (2), pp. 1334-1337.

**DOI:** 10.35940/ijrte.B1769.078219

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**Abstract**

From the time of 20th century, the world has undergone complete change in the field of Engineering Education. Learning environment in Educational system of Millennial's, for very short concentrated people who prefer interactive, experiential and collaborative learning, usually they are informal and choose to have friendly relationships with teachers. Educational system in engineering classes for such Learners with dynamic and technology driven people do not prefer long lectures anymore. The design objective is to understand the cognitive and social developments in easier way that outcome in faster learning, and also to redesign classrooms and other learning environments. So that Learners can learn more passionately with completeness in the topic/ subject and to make them self Learners. This paper provides a meaningful teaching objective that relates with real-life experiences, Lectures mixed up with methods like video clips, concept charts, and PowerPoint presentations with key concepts based on the summary, also creating collaborative subjective experiences with social networking platforms. Finally, this paper concludes by discussing the experiments being applied in our institution (VIIT) to make engineering education practical by means of experimental learning. © BEIESP.

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**Source:** Scopus

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**Text mining with apache hadoop over different hadoop clusters architectures**

(2019) *International Journal of Recent Technology and Engineering*, 8 (2), pp. 1252-1256.

**DOI:** 10.35940/ijrte.B1866.078219

<sup>a</sup> Department of Computer Science Engineering, Vignan's Institute of Information Technology Andhra Pradesh, India

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**Abstract**

Big data is very much practical for real time applicational systems. One of the mostly used real time application worldwide are on unstructured documents. Large number of documents are managed and maintained through popular leading Big Data platform is Hadoop. It maintains all the information at Hadoop Distributed File System in Blocks. Irrespective of data size, Big Data has opened its path to store and analyze the data which has consumed time. To overcome this, Hadoop has designed cluster process for large volumes of unstructured data computations. Three different cluster architectures like Standalone, Single node cluster and multi node clusters are considered. In this paper, Big Data allows Hadoop platform to boost the processing speed over large datasets through cluster architectures, which are studied and analyzed through text documents from newsgroup20 dataset. It identifies the challenges on text mining and its applications using Apache Hadoop. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

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**Source:** Scopus

- 50) Laxmi Lydia, E.<sup>a</sup>, Sharmili, N.<sup>b</sup>, Madhusudhanarao, T.V.<sup>c</sup>, Babuchevuru, M.<sup>d</sup>, Vijaya Kumar, K.<sup>e</sup>

**An integrated way for teaching Hadoop & BigData analytics course**

(2019) *International Journal of Recent Technology and Engineering*, 8 (2), pp. 1159-1163.

**DOI:** 10.35940/ijrte.b1739.078219

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**Abstract**

Hadoop & BigData Analytics course has occupied a ubiquitous role in present software technologies. Educational institutes are fond of this course as it's been trending course most of the placements in software companies are based on. As per the traditional teaching mechanisms, the educational systems are not much up-to-mark where the students are not assisted with the course resulting in atrocious placements. Therefore to enhance this placements, institutions has to adopt a new integrated teaching-learning proceedings which help in drastic change of academic results discussed in this paper. Here the result analysis of course attainments are compared to show the eye-catching improvements as occurred in VIIT College. © 2019, Blue Eyes Intelligence Engineering and Sciences Publication. All rights reserved.

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**Source:** Scopus

- 51) Naveen Kumar, N.<sup>a</sup>, Janaki Ram, G.D.<sup>b</sup>, Bhattacharya, S.S.<sup>b</sup>

**Spark Plasma Sintering of Graded Dissimilar Metals**

(2019) *Transactions of the Indian Institute of Metals*, 72 (7), pp. 1837-1852.

**DOI:** 10.1007/s12666-019-01662-8

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#### Abstract

An attempt was made to produce graded stainless steel (SS)/commercially pure titanium (Ti) samples using spark plasma sintering. A cylindrical sample of 20 mm diameter and 38 mm height, consisting of six layers with decreasing amounts of Ti (in steps of ~ 20 vol.%) from layer L1 (100 vol.% Ti) to layer L6 (100 vol.% SS), was targeted. After process optimization, fully dense, graded SS/Ti samples were successfully produced. However, the samples showed several different intermetallics such as FeTi, NiTi, Fe<sub>2</sub>Ti, and Cr<sub>2</sub>Ti. The intermetallic formation was found to be most severe in layer L5 (80 vol.% SS + 20 vol.% Ti). These graded SS/Ti samples exhibited a tensile strength of 280 ± 9 MPa and were found to suffer brittle fractures in layer L5. In subsequent experiments, attempts were made to overcome this problem using temperature gradient sintering and/or ball-milled SS powder. While the combined use of temperature gradient sintering and ball-milled SS powder was helpful in improving the tensile strength of graded SS/Ti samples to 320 ± 12 MPa, undesirable intermetallic formation and brittle fractures in layer L5 could not be avoided. © 2019, The Indian Institute of Metals - IIM.

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**Publication Stage:** Final

**Source:** Scopus

- 52) Srivastava, M.<sup>a</sup>, Alla, S.K.<sup>a b</sup>, Meena, S.S.<sup>c</sup>, Gupta, N.<sup>d</sup>, Mandal, R.K.<sup>a</sup>, Prasad, N.K.<sup>a</sup>

#### Magnetic field regulated, controlled hyperthermia with Li x Fe 3-x O 4 (0.06 ≤ x ≤ 0.3) nanoparticles

(2019) *Ceramics International*, 45 (9), pp. 12028-12034.

**DOI:** 10.1016/j.ceramint.2019.03.097

<sup>a</sup> Department of Metallurgical Engineering, Indian Institute of Technology (Banaras Hindu University), Varanasi, 221005, India

<sup>b</sup> Vignan's Institute of Information Technology, Visakhapatnam, 530049, India

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#### Abstract

The single phase Li x Fe 3-x O 4 (0.06 ≤ x ≤ 0.3) nanoparticles were synthesized using microwave refluxing technique and found to be spherical with the size in the range of ~ 3–22 nm. The structure and the size were confirmed by X-ray diffraction patterns and transmission electron microscopy. X-ray photoelectron spectroscopy data of Li 0.3 Fe 2.7 O 4 sample indicate the oxidation states for Li-ions (+1) and Fe-ions (+2 and +3). The sample Li 0.06 Fe 2.94 O 4 had superior magnetization value (~54.1 Am<sup>2</sup>/kg) and it diminished with increasing Li content. The low coercivity values and the presence of a doublet in Mössbauer spectra advise the presence of both ferrimagnetic and superparamagnetic component. The ferrofluids of these samples show magnetic field dependent stabilization of temperature near 42 °C at the time of magnetic hyperthermia experiments. The specific absorption rate value (up to 100 W/g) found to be comparable with the literature values. © 2019 Elsevier Ltd and Techna Group S.r.l.

**Publisher:** Elsevier Ltd

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 53) Sathish<sup>a</sup>, Rafi, S.M.<sup>a b</sup>, Shaik, H.<sup>c</sup>, Madhavi, P.<sup>d</sup>, Kosuri, Y.R.<sup>e</sup>, Sattar, S.A.<sup>a</sup>, Kumar, K.N.<sup>a c</sup>

#### Critical investigation on Cu-O bonding configuration variation in copper-oxide thin films for low-cost solar cell applications

(2019) *Materials Science in Semiconductor Processing*, 96, pp. 127-131.

**DOI:** 10.1016/j.mssp.2019.02.023

<sup>a</sup> Department of Physics, Nitte Meenakshi Institute of Technology, Yelahanka, Bangalore, 560064, India

<sup>b</sup> Division of Advanced Materials Engineering & Institute for Rare Metals, Kongju National University, Chungnam, 31080, South Korea

<sup>c</sup> Centre for Nanomaterials and MEMS, Nitte Meenakshi Institute of Technology, Yelahanka, Bangalore, 560064, India

<sup>d</sup> Plasma Processing Laboratory, Department of Instrumentation and Applied Physics, Indian Institute of Science, Bangalore, 560012, India

<sup>e</sup> Department of Physics, Vignan's Institute of Information Technology, Visakhapatnam, 530049, India

### Abstract

The present work provides a detailed investigation on how Copper-Oxygen bonding configuration varies with the plasma processing parameters. XRD, FTIR, XPS and Raman spectroscopy is extensively used to identify and study the phases and phase changes in the films. The Copper-Oxygen bonding configuration was altered by varying the RF power and substrate temperature. We studied the combined effect of both RF power and substrate temperature on the Cu-O bonding configuration, which in turn affects the optical and electrical properties, which are essential to understand before the device fabrication. Films were deposited with 40, 60 and 80 W of RF power at the different growth temperatures such as RT (room temperature), 200 °C and 400 °C. Even the RT deposited films were found to be exhibiting the crystalline nature to the maximum extent. We observed a wide range of variation in the Cu-O bonding configurations with the RF power and growth temperature. Films deposited at 80 W are leaning towards Cu<sub>2</sub>O phase, whereas films deposited with 40 W is close to CuO phase. Also it is found that, for a fixed power, the films deposited at high substrate temperature are leaning towards Cu<sub>2</sub>O Phase. © 2019 Elsevier Ltd

**Publisher:** Elsevier Ltd

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

54) Thammana, A., Boddepalli, E.

### Performance analysis of wavelet transformed of dm with Plc over wimax

(2019) *International Journal of Engineering and Advanced Technology*, 8 (5), pp. 296-300.

Department of ECE, Vignan's Institute of Information Technology, Duvvada, Visakhapatnam, India

### Abstract

High PAPR is one of the main drawback for OFDM system. This paper proposes a Hybrid system of PLC (Piecewise Linear Companding) of wavelet transform to overcome this demand. Simulation results are quite encouraging in terms of reduction of PAPR, improvement of PSD and BER. ©BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

55) Raghuram, K.S., Arji, N.K., Kadregula, M., Kavva, P.S.

### Minimizing the ship exhaust radiations

(2019) *JP Journal of Heat and Mass Transfer*, 17 (1), pp. 215-225.

**DOI:** 10.17654/HM017010215

Department of Mechanical Engineering, Vignan's Institute of Information Technology, Visakhapatnam, AP, India

### Abstract

The present work is done to protect defence people platform against IR guided missile threats, by essentially cooling the funnel surfaces, such that temperature between background and platform becomes minimum. The multiring eductor/diffuser type IRSS device uses ejector action to draw in large volume of ambient air for both metal gases cooling. With the ejector action, the exhaust gases are accelerated in convergent nozzle and the resulting high velocity jet is used to entrain ambient air within a mixture. Entrainment for ambient air quantity depends on the level of cooling required for hot gas temperature to about 80% to 125% of hot gases. © 2019 Pushpa Publishing House, Prayagraj, India. All Rights Reserved.

**Publisher:** Pushpa Publishing House

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

56) Karuna, M., Sampath Dakshina Murthy, A., Thiagarajan, G., Guntur, S.R.

**Upper limb movements identification through EMG signal using artificial neural network**

(2019) *International Journal of Engineering and Advanced Technology*, 8 (5), pp. 1284-1286.

Department of Electronics and Communication Engineering, Vignan's Institute of Information Technology, Visakhapatnam, A.P, India

**Abstract**

Nowadays, analysis of electromyography (EMG) signal is one of the powerful areas of interest in medical, rehabilitation, robotic and industrial fields. The measurement refers to the recording of electric signals that appear during muscle contraction. As these signals are related to human process of action, because of uncertainty of EMG signals proper prediction of a specific motion is difficult. An Identification of a specific wrist motion by means of the EMG signal pattern will help in controlling prosthetic hand. A movement recognition technique is required to segregate different wrist movements for instance extension, flexion, pronation, supination. In this direction the EMG signal pattern recognition includes feature extraction and classification of proper EMG signals obtained from human forearm muscles using Artificial Neural Network to establish control over the prosthetic hand. Training of ANN was performed using four input neurons, four output layers, and with 10 hidden layers achieved 90% overall accuracy. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

57) Sampath Dakshina Murthy, A., Tirumala Rao, P., Usha Rani, A., Prudhvi, M.S.G.

**Novel techniques on flight maneuvering based on fuzzy logic using human edge detection**

(2019) *International Journal of Engineering and Advanced Technology*, 8 (5), pp. 301-303.

Department ECE, Vignan's Institute of Information Technology, Visakhapatnam, India

**Abstract**

Maneuvering techniques for flight have been developed using human motion detection and fuzzy logic. The need for predicting various flight paths needs a non linear approach or the situations are extremely complex and difficult to predict. Taking care of uncertainties and various human expressions, an efficient technique has been developed. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

58) Sekhar, C., Venkata Rao, K.

**Detection of vehicle intrusion using opencv**

(2019) *International Journal of Innovative Technology and Exploring Engineering*, 8 (8), pp. 1596-1599.

Dept of CSE, Vignan's Institute of Information Technology, Visakhapatnam, AP, India

**Abstract**

Detection of vehicle Intrusion may be a period of time embedded system that mechanically acknowledges the registration number plate of vehicles by victimization Optical Character Recognition. it's the potential of characteristic the unauthorized vehicles that trespass in dark areas. Several applications square measure starting from complicated security systems to

common areas and from parking admission to urban traffic control[1]. Detection of auto Intrusion (DVI) has complicated characteristics thanks to various effects like light-weight and speed. Most of the registration code Recognition systems square measure designed victimisation proprietary tools like MATLAB. during this paper, another methodology of we tend to enforced this technique victimisation Python and therefore the Open laptop Vision Library. This System can be implemented over offline video as well as on a live streaming video. Whenever a vehicle enters the zone, using OCR, the License Plate is recognized and verified over the database of allowed vehicles. If an Intruded vehicle enters a restricted area a message over a mail will be triggered to the zone in charge with the details of the intruding vehicle and the time instance of the vehicle entering the zone. These details are also stored in the database. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

59) Pasala, S., Veeramanickam, M.R.M., Vayelapalli, M.

**Automatic smart street light by intensity controller using node-MCU**

(2019) *International Journal of Innovative Technology and Exploring Engineering*, 8 (8), pp. 458-461.

Vignan's Institute of Information Technology, India

**Abstract**

India facing one of the major problem is maintenance of street lights. In India street lights are maintained manually, it is found that there is wastage of power by operating the street lights due to manual operations like switch on the lights at day time. Due to that wastage of electricity will be occurred. The methods that are working on the maintenance of street lights are not effective. In this paper a new technique is proposed to control the intensity of LED lights using LDR sensors and PWM drivers resulting in power saving and reducing the manual errors by controlling automatically. Implementation is done using NodeMCU. For effective communication, sending the status of the street lights by using Blynk App for monitoring the street lights effectively. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

60) Nageswara Rao, P.A.<sup>a</sup>, Sukanya, Y.<sup>b</sup>, Mallikarjuna Rao, P.<sup>c</sup>

**Design and performance analysis of pentagon shaped microstrip patch antenna**

(2019) *International Journal of Innovative Technology and Exploring Engineering*, 8 (8), pp. 1591-1595.

<sup>a</sup> GayatriVidyaParishad College for Degree and PG Courses, Rushikonda, Visakhapatnam, India

<sup>b</sup> Vignan's Institute of Information Technology, Duvvada, Visakhapatnam, India

<sup>c</sup> Department of Electronics and Communication Engineering, College of Engineering (A), Andhra University, Visakhapatnam, India

**Abstract**

Integration of RF circuit components is required to make the antennas more compact and robust and is a trend in wireless application now-a-days. The micro strip antenna of patch variety is able to satisfy the requirement but the disadvantage is reduced gain and reduced band width. The gain has a range of 1-2 dB. So in order to increase the gain as well as band width, the substrate with low dielectric characteristics and higher thickness can be used. However, thickness increases surface waves. So, proper thickness of the substrate is required. This paper proposes a micro strip patch antenna based on a special design (pentagon) suitable for resonant frequencies in the range of 7.6 GHz to 7.9 GHz. So the analysis has been done by means of Ansoft HFSS software V 17.0 by taking Rogers RT/Duroid 5880 (tm) as substrate material into consideration. Subsequently the gain, band width, radiation pattern and return loss has been evaluated with equivalent designs. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article  
**Publication Stage:** Final

**Source:** Scopus

- 61) Bali, S.K.<sup>a</sup>, Munagala, S.<sup>b</sup>, Gundavarapu, V.N.K.<sup>c</sup>

**Harmony search algorithm and combined index-based optimal reallocation of generators in a deregulated power system**

(2019) *Neural Computing and Applications*, 31 (6), pp. 1949-1957.

**DOI:** 10.1007/s00521-017-3177-3

<sup>a</sup> Department of EEE, GITAM University, Visakhapatnam, India

<sup>b</sup> Department of EEE, JNT University, Hyderabad, India

<sup>c</sup> Department of EEE, Vignan's Institute of Information Technology, Visakhapatnam, India

**Abstract**

It is compulsory for the electrical industry to make effective utilization of the available resources and provide a stable and reliable supply to the consumers. Optimal reallocation of generators and implementation of FACTS devices have been found to be very effective in this regard. In this paper, a combinatory strategy of optimal tuning of generators using harmony search algorithm in the presence of static VAR compensator has been proposed. The static VAR compensator has been placed on the basis of a combined index that comprises of Vi/Vo index and L-index. A multi-objective function comprising of voltage deviations, active power generation costs and line losses has been considered for proper tuning of the generators. The results obtained are compared with the genetic algorithm. The proposed method has been tested and implemented on an IEEE 30 bus system for normal loading and for severe system conditions due to line outage. © 2017, The Natural Computing Applications Forum.

**Publisher:** Springer London

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 62) Sivakoti Reddy, M.<sup>a</sup>, Murali Krishna, S.M.<sup>b</sup>

**Influential role of retail service quality in food and grocery retailing: A comparative study between traditional and multi-channel retailing**

(2019) *International Journal of Management and Business Research*, 9 (2), pp. 68-73.

<sup>a</sup> Department of Management Studies, VFSTR, Deemed to be University, Vadlamudi, Guntur, Andhra Pradesh, India

<sup>b</sup> Department of Management Studies, Vignan Institute of Information Technology, Duvvada, Visakhapatnam, Andhra Pradesh, India

**Abstract**

Retail service quality aspect is highly essential in the retail sector. The current research paper is intended to test the impact of retail service quality in both the traditional and multi-channel retailing. The service quality in the retail sectors may provide the customer satisfaction to the customers. The more satisfaction among the customers may leads to retain them for longer period and then develops the customer loyalty. The researcher adopted Dhabolkar's retail service quality dimensions to test it's impact over the customer satisfaction in the retailing sector. The researcher adopted the five dimensions such as physical aspects, reliability, personal interaction, problem solving and policy as the independent variables and the dependent variable of the study is customer satisfaction. The researcher conducted the analysis with the 560 collected samples. © 2019 Islamic Azad University.

**Publisher:** Islamic Azad University

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 63) Thirupathi Rao, N.<sup>a</sup>, Bhattacharyya, D.<sup>a</sup>, Madhusudhan Rao, V.<sup>b</sup>, Srinivasa Rao, K.<sup>c</sup>, Srinivasa Rao, P.<sup>d</sup>, Kim, T.-H.<sup>e</sup>

**Optimal analysis of a queuing model based communication network**

(2019) *International Journal of Recent Technology and Engineering*, 8 (1), pp. 1827-1833.

<sup>a</sup> Department of Computer Science and Engineering, Vignan's Institute of Information Technology (A), Visakhapatnam, AP, India

<sup>b</sup> Department of Chemical Engineering, Vignan's Foundation for Science, Technology and Research (Deemed to be University), Guntur, Vadlamudi, 522213, India

<sup>c</sup> Department of Statistics, Andhra University, Visakhapatnam, AP, India

<sup>d</sup> Department of Computer Science & Systems Engineering, AUCE (A), Andhra University, Visakhapatnam, AP, India

<sup>e</sup> Department of Computing and IT, University of Tasmania, Churchill Ave, Hobart, TAS 7005, Australia

#### Abstract

Queuing model based communication network models development was increasing a lot in the recent days. The actual setup of the network and analyzing the performance of such networks are becoming the tough part day to day observations. Hence, the authors now a day's tries to model the communication network models in the form a queuing model and trying to analyze the performance of such networks. In the similar fashion, in current article also, the authors tried to develop a communication network model such that to analyze the performance. The arrivals considered for the model are the compound Poisson arrivals and the form of the arrivals is in bulk. The current network model considered is having the two stage arrivals and the performance was analyzed in the form of tables and graphical representations. Numerical representations are displayed to examine the impact of changes in input parameters on framework execution measures. With reasonable cost contemplations, the ideal working strategies of the communication networks are determined and broke down. It is watched that the compound Poisson binomial mass landings dissemination parameters have noteworthy impact on framework execution measures. Dissecting the two phase coordinate landings enhance the system execution and diminish clog in cradles and mean postponements. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

64) Khan, P.A., Rao, N.T., Bhattacharyya, D.

#### Implementation of malicious things detection at public places using deep learning

(2019) *International Journal of Innovative Technology and Exploring Engineering*, 8 (7), pp. 2792-2798.

Department of Computer Science and Engineering, Vignan's Institute of Information Technology, Visakhapatnam, 530049, India

#### Abstract

To provide effective security in crowded or public areas in today's world is a big challenge for us. One of the major challenges is to detect or monitor potential threats such as explosive items or bombs (Abandoned luggage items). In this paper we propose an approach for automatic detection of abandoned luggage and alerting the security alliances. We use deep learning to train the system with a set of images, these images were given to the trained system which is going to visualize the objects in the image and calculate the distance between objects if the object is person and baggage or only baggage. If the distance is greater than a threshold distance limit then the system is going to raise an alarm for the security alliances. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

65) Thirupathi Rao, N.<sup>a</sup>, Bhattacharyya, D.<sup>a</sup>, Kim, T.-H.<sup>b</sup>

#### Design and development of OMPS game

(2019) *International Journal of Innovative Technology and Exploring Engineering*, 8 (7), pp. 1793-1797.

<sup>a</sup> Department of Computer Science and Engineering, Vignan's Institute of Information Technology (A), Visakhapatnam, AP 530 049, India

<sup>b</sup> Department of Computing and IT, University of Tasmania, Churchill Ave, Hobart, TAS 7005, Australia



**Abstract**

The current Model "Online Multiplayer Strategy Game" is an online multiplayer strategy game which is developed as a web application. Each player starts the game as the leader of a small undeveloped village, surrounded by undeveloped resource fields. Creating military units will allow them to attack a person or defend from enemy attacks. Players can join as a team. Allies may trade resources through trade market or send reinforcements when others are being attacked. An alliance can win the game by destroying the enemy alliance completely. The main motive of the game is to gather resources with villagers, developing village by constructing new buildings, creating as many troops as you can and destroying the enemy alliance with your alliance. The current Model is developed using mean stack. A standard java stack called MEAN is used for designing and building the dynamic web pages. Also the same software is used for MongoDB and other sources etc.,. The current work sparks the player's creativity, develops problem solving skills, and improves one's planning, management and foresight. The game is portable and can be accessed from anywhere. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

66) Rao, N.T., Bhattacharyya, D.

**Applications of artificial intelligence and ML in business**

(2019) *International Journal of Innovative Technology and Exploring Engineering*, 8 (7), pp. 2734-2738.

Department of Computer Science and Engineering, Vignan's Institute of Information Technology, Visakhapatnam, A.P, India

**Abstract**

The utilization of artificial intelligence and its related techniques is going in rapid level of growth. As the technologies are upgrading from time to time, the technologies are also increasing the utilization of these techniques such that to provide the more sophisticated facilities to the users. The utilization of various applications of artificial intelligence includes face recognition, palm recognition and other applications etc. As the technology trends going, the utilization is also increasing and in the current paper, these applications are given with a brief details. Various sectors where the current AI techniques are utilizing in a very high growth to be noted and presented in detail in the current paper. This growth has to be observed in various fields and all those areas were discussed in detail. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

67) Venkatesh, B., Srinivasa Reddy, C., Bhargavi, C.V.

**Enhancing security features for iot devices by integration with block chain technology**

(2019) *International Journal of Innovative Technology and Exploring Engineering*, 8 (6 Special Issue 4), pp. 1262-1265.

**DOI:** 10.35940/ijitee.F1259.0486S419

Department of CSE, Vignan's Institute of Information Technology Duvvada, Visakhapatnam, A.P, India

**Abstract**

System of bodily hubs or "matters" joined with hardware, programming, sensors, and linked to enact articles to move information from servers, included frameworks, or doubtlessly distinctive associated devices depending on a numerous correspondence foundations may be actualized with net of factors (IoT) version. IoT facts gathered from various sensors, hubs and government are moved to the cover over the net. The principle target of IoT protection is to ensure thriller of the statistics, and make certain the assurance of the consumer's statistics, frameworks, software program's facts substance, and smart machine's of the IoT, via manner of ensures the administrations accessibility of IoT organic gadget. The number one purpose of this exam article is to enhance protection highlights to IoT device becoming a member of with rectangular chain. The significance of Bit-coin the usage of rectangular chain innovation, which changed into at that factor set up for a few, financial nicely well worth exchanges because it have been. Anyhow, because of its Non-delivered collectively engineering, agile corruption and cryptographic defend benefits, for instance, pseudonymous personalities, statistics trustworthiness and take a look at, scientists and safety professionals round the sector are concentrating on the rectangular chain to decide coverage and protection issues of IoT. In this article, we have positioned a few right down to earth problems which can be associated with the becoming a member of of IoT devices with the square chain. At closing, we endorse a

course ahead to determine a part of the large difficulties to the rectangular chain's utilization in IoT based totally software program. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

68) Neelima, G.<sup>a</sup>, Veeramanickam, M.R.M.<sup>a</sup>, Gorbachev, S.<sup>b</sup>, Kale, S.A.<sup>c</sup>

**Extractive text summarization using deep natural language fuzzy processing**

(2019) *International Journal of Innovative Technology and Exploring Engineering*, 8 (6 Special Issue 4), pp. 990-993.

**DOI:** 10.35940/ijitee.F1203.0486S419

<sup>a</sup> Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh, India

<sup>b</sup> Candidate of Technical Sciences, National research Tomsk State University, Russian Federation

<sup>c</sup> Trinity College of Engineering and Research, Savitribai Phule Pune University, Pune, India

**Abstract**

Text summarization is most trending research areas in a modern context. The main aim of this project is to reduce text size while preserving the information underlying into it. In summary construction level, in general, given complex task which are basically will involve with deep natural language fuzzy processing methodologies. In general, an extractive based summary method is the very simple original text of subset of which will not guarantee as best narrative coherence output, because they are most conveniently representing an approximate summarized content from given text-based only on relevance judgment. In an automatic process of fuzzy summarization which is divided into the following steps: Pre-processing (sentence segmentation, tokenization, stop words removal), Feature Extraction, Sentence Scoring, Sentence Ranking and Summary Extraction. ©BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

69) Naik, K.S.<sup>a</sup>, Suneetha, P.<sup>a</sup>, Pachiyannan, M.<sup>b</sup>

**Parametric study of vivaldi antenna with different corrugated edges for microwave imaging applications**

(2019) *International Journal of Innovative Technology and Exploring Engineering*, 8 (6 C2), pp. 283-286.

<sup>a</sup> ECE Department, Vignan's Institute of Information Technology, Visakhapatnam, AP, India

<sup>b</sup> Vignan's Foundation for Science Technology & Research Vadlamudi, Guntur, AP, India

**Abstract**

For communication now days we are having so many transmission mediums in modern communication system. But may not have the security, privacy and reliability of the data what we are sending in a qualitative way. In order to achieve quality communication, this paper mainly deals with a new and innovative approach to send data via ultra-wideband antennas. A wide range of communication there are many advanced ultra-wideband antenna available such as Bow tie, Helical, Spiral, Log periodic, Horn and Bi-conical antennas. To compete with the available trending technology we concentrated on innovative Vivaldi antenna is selected. It has the capacity to communicate widely through superior broad band. This approach meets effective impedance matching to feed line and easy manufacturing process. © 2019, Blue Eyes Intelligence Engineering and Sciences Publication.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

70)

Shravani, C., Indira, G., Appalaraju, V.

**Arduino based color sorting machine using TCS3200 color sensor**

(2019) *International Journal of Innovative Technology and Exploring Engineering*, 8 (6 Special Issue 4), pp. 1259-1261.

**DOI:** 10.35940/ijitee.F1258.0486S419

Electronics and Communication Engineering, Vignan's Institute of Information Technology, Visakhapatnam, A.P, India

**Abstract**

Sorting of object is an essential mechanical process in which difficult work is quite required. Chronic manual arranging makes consistency troubles. Machines can perform mainly dreary assignments superior to human beings. Laborer exhaustion on sequential manufacturing structures can result in decreased execution, and purpose troubles in retaining up object fine. A employee who has been appearing research undertaking over and over may additionally in the end forget about to recognize the color of item, but a machine in no way. On this paper a compact records close to arranging of articles based totally on shading has been implemented making use of TCS3200 shading sensor with SERVOMOTORS associated with AURDINO UNO. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

71) Shravani, C., Das, R.P.

**Implementation of modified harris corner detector algorithm-including free parameters based on FPGA**

(2019) *International Journal of Innovative Technology and Exploring Engineering*, 8 (6 Special Issue 4), pp. 1254-1258.

**DOI:** 10.35940/ijitee.F1257.0486S419

Vignan's Institute of information TechnologyAP, India

**Abstract**

An efficient, pipelined Field Programmable Gate Arrays (FPGA) engineering of a modified Harris corner Detector is proposed. In laptop imaginative and prescient, the Harris nook encompass locator is one of the most fundamental strides in numerous precious applications, as an instance, three-D replica. in any case, inside the occasion that it's miles actualized in programming, the following code is not affordable to be achieved continuously by using minimum attempt versatile processors. device technique has been acquired for offloading the monotonous element extraction method into reason entryways with the purpose that the association is having minimal attempt to supply and low capability to paintings contrasted with its product accomplice. The framework is fabricated and attempted on a field programmable Gate Arrays(FPGA) level (Zed board). The assessments and demos exhibit that the speed and precision of the component indicator are enough for some proper applications. The results reveal an ideal concord between belongings utilization and timing execution, contrasted and previous. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

72) Laxmi Lydia, E.<sup>a</sup>, Babu, C.M.<sup>b</sup>, Shankar, K.<sup>c</sup>

**Artificial way of characterizing unsupervised data using auto-encoders with deep learning cluster analysis**

(2019) *International Journal of Recent Technology and Engineering*, 7 (6), pp. 555-559.

<sup>a</sup> Computer Science and Engineering, Vignan's Institute of Information Technology, India

<sup>b</sup> CSE Department, VFSTR deemed to be University, India

<sup>c</sup> School of Computing, Kalasalingam Academy of Research and Education, Krishnankoil, India

**Abstract**

Most data processing methods for structural, unstructural and semi-structural data are not usually trained to process Big Data. In this 21st century, processing techniques for big data have reached the advanced level of processing data through deep neural networks, which are highly sophisticated in achieving an optimized solution. Autoencoder is a dynamic approach

which also combines both supervised learning and unsupervised clustering with minimum reconstruction error. This paper advances the pattern clustering and multidimensional visualization of data. Deep Convolutional Auto-encoder, CDNN-based deep clustering algorithms comprise of multilayer perceptions improves robustness using Deep Convolutional Embedding Clustering (DCEC), Clustering Convolutional Neural Network (CCNN) clustering algorithms. The objective of this paper is to reduce the computational complexity, enhance reliability, and effective simultaneous feature learning for non-linear transformational data using autoencoders in convolutional networks. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

73) Umamaheswari, R., Barick, S., Sampath Dakshina Murthy, A.

**Analysis of SNR distribution of MIMO indoor VLC system up to second order of reflection Ashish Kumar**  
(2019) *International Journal of Innovative Technology and Exploring Engineering*, 8 (6), pp. 404-406.

Department ECE, Vignan's Institute of Information Technology, Visakhapatnam, India

**Abstract**

In this paper, analysis of distortion of signal distribution of LOS and higher order reflection up to second order reflection has been done. Through simulation result it has been found that maximum SNR is received at the receiver's position for Line-of-sight (LOS) component whereas it is uniformly distributed for second order of reflection. This analysis helps in finding the required Field of view (FOV) at the different receiver position according to SNR distribution. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

74) Laxmi Lydia, E.

**Electronic governance of housing price using boston dataset implementing through deep learning mechanism**  
(2019) *International Journal of Recent Technology and Engineering*, 7 (6), pp. 560-563.

Computer Science and Engineering, Vignan's Institute of Information Technology, India

**Abstract**

The growth of technology in our day-to-day enterprise with advanced machines are outstanding through Artificial Intelligence involving both machine learning and deep learning all over the world. As things go on the forecast of innovations to business and society applying Artificial Intelligence influence technological transformations. This will possibly lead to vulnerable with reference to security. In this paper, we intend to constitute particular prediction forms depending on deep learning to regulate the actual data of the real estate processed apartments data in Boston to predict the housing price. We construct a Linear regression prediction model related to Supervised Learning in Artificial Intelligence. In this paper, a comprehensive study on house pricing using different class labels. Finally, the supervised data was produced, which is important to estimate and prediction of the housing price in the real estate business. Connecting with Artificial Intelligence, we will acquire the capacity of composing higher intelligent predictions regarding future management and developments on smarter intelligent systems and prototypes. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

75) Premamayudu, B.<sup>a</sup>, Subbarao, P.<sup>a</sup>, VenkataRao, K.<sup>b</sup>

**Identification of natural disaster affected area precise location based on tweets**

(2019) *International Journal of Innovative Technology and Exploring Engineering*, 8 (6), pp. 119-123.

<sup>a</sup> Department of Information Technology, Vignan Foundation for Science Technology and Research Deemed be University, Guntur, Vadlamudi, Andhra Pradesh, India

<sup>b</sup> Department of Computer Science and Engineering, Vignan's Institute of Information Technology, Visakhapatnam (Dt), Gajuwaka, Andhra Pradesh, India

### Abstract

Twitter is an "in the moment" platform designed for customers to post tweets about any event, which reports any major event including natural disasters. Hence, social media creates volumes of data on an event. Therefore, during the time of natural disaster like tsunami, earthquake, floods, landside etc., people of that area require information in those situations to enable relief operations to save many lives. This paper presents the identification of natural disaster affected area based on twitter tweets using Geoparsing to mark the places of disaster on a world map. In the proposed mechanism, longitude and latitude location of twitter message can be extracted to map geographical coordinates in GoogleMapPlotter. The source of the geographical coordinates in real time is twitter messages collected based on the keyword and timeline. We can parse real time collected twitter messages for the natural disaster affected areas and locations. The collected tweets and their location information will help us to identify the exact place of disaster event. These tweets location information is stored in database or saved in CSV format to create the dataframe in python pandas. Further, the visualization is performed on the prepared dataframe using GoogleMapPlotter. This visualization is helpful for the disaster relief operations and estimates the severity of the natural disaster. The truthiness of the user tweets is evaluated using sentiment analysis for decision making. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

76) Ayyappadas, C.<sup>a b</sup>, Muthuchamy, A.<sup>b</sup>, Kumar, N.N.<sup>c</sup>, Agrawal, D.K.<sup>d</sup>, Raja Annamalai, A.<sup>e</sup>

### An investigation on tribological and electrical behaviour of conventional and microwave processed copper-graphite composites

(2019) *Materials Research Express*, 6 (6), art. no. 066573, .

**DOI:** 10.1088/2053-1591/ab1027

<sup>a</sup> Department of Mechanical Engineering, NSS College of Engineering, Palakkad, Kerala, 678008, India

<sup>b</sup> Department of Manufacturing Engineering, School of Mechanical Engineering, VIT, Vellore, Tamil Nadu, 632 014, India

<sup>c</sup> Department of Mechanical Engineering, Vignan's Institute of Information Technology, Duruvada, Visakhapatnam, 530049, India

<sup>d</sup> Materials Research Institute, Pennsylvania State University, United States

<sup>e</sup> Centre for Innovative Manufacturing Research (CIMR), VIT, Vellore, Tamil Nadu, 632 014, India

### Abstract

The effect of graphite content and sintering mode on the tribological and electrical properties of copper has been studied by incorporating varying proportions of graphite flakes (0, 8, 15, 25 and 32 vol%) following powder metallurgy route. The sintering of green compacts was accomplished by microwave and conventional processes at 900 °C with a heating rate of 5 °C min<sup>-1</sup> and 20 °C min<sup>-1</sup>, respectively, and holding time being 60 min for both processes. As expected the densification was observed higher in microwave heating than conventional process. Microstructural examination of microwave samples revealed a fine-grained microstructure. Pin-on-Disc wear test exposed excellent self-lubricating nature of these composites. Best coefficient of friction values were observed for microwave sintered composites. Microwave sintered samples exhibited better hardness, coefficient of friction (COF) and electrical conductivity as compared to their conventionally sintered counter parts. Morphologies of polished surfaces were analyzed to predict the wear mechanisms involved. © 2019 IOP Publishing Ltd.

**Publisher:** Institute of Physics Publishing

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**Source:** Scopus

Asish Vardhan, K.<sup>a c</sup>, Thirupathi Rao, N.<sup>b d</sup>, Naga Mallik Raj, S.<sup>b d</sup>, Sudeepthi, G.<sup>e</sup>, Divya<sup>f</sup>, Bhattacharyya, D.<sup>b d</sup>, Kim, T.-H.<sup>g</sup>

### Health advisory system using IoT technology

(2019) *International Journal of Recent Technology and Engineering*, 7 (6), pp. 183-187.

<sup>a</sup> Department of Information Science and Engineering, M S Ramaiah Institute of Technology, Bengaluru, India

<sup>b</sup> Department of Computer Applications, M S Ramaiah Institute of Technology, Bengaluru, India

<sup>c</sup> Department of Computer Science & Engineering, AUCE, Andhra University, Visakhapatnam, India

<sup>d</sup> Department of Computer Science & Engineering, Vignans Institute of Information Technology, Visakhapatnam, AP, India

<sup>e</sup> Department of Computer Science & Engineering, Anurag Group of Colleges, Hyderabad, India

<sup>f</sup> Centre of Postgraduate Studies, Lincoln University College, Malaysia

<sup>g</sup> Sungshin Women's University, Bomun-ro 34da-gil, Seongbuk-gu, Seoul, South Korea

### Abstract

The Internet of Things (IoT) utility in nursing will provide a new life to the human services field. It conjointly incorporates a rapid advancement of the numerous fields. One among the higher approach the specialists are fit to decidedly and rapidly ideal to utilize the important patient data's and together with the patient case history. Through the net of Things, the standard of information and consequently the patient care inside the Medical field had enhanced in a substantial manner. Thus, the web of Things offers Associate in nursing genuine stage to interconnect the every one of the assets. Semantics and metaphysics components help the PCs notwithstanding the understanding the side effects and restorative assets. By using semantics, the metaphysics instrument makes a recovery procedure and reconfigures restorative assets steady with patient's particular necessities apace and more than once. © 2019, Blue Eyes Intelligence Engineering and Sciences Publication. All rights reserved.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

78) Kakita, R.<sup>a b</sup>, Palukuri, V.<sup>c</sup>

### Dramatization practices: A proactive framework to enhance communication skills among aspirants of professional courses from rural foundation in the northern districts of Andhra Pradesh, India

(2019) *International Journal of Recent Technology and Engineering*, 7 (ICETESM18), pp. 86-90.

<sup>a</sup> Vignans Foundation for Science, Technology and Research (Deemed to be University), Vadlamudi, India

<sup>b</sup> Vignans Institute of Information Technology (A), Visakhapatnam, AP, India

<sup>c</sup> Division of English, Department of Sciences and Humanities, Vignans Foundation for Science, Technology and Research (Deemed to be University), Guntur, Vadlamudi, AP, India

### Abstract

The information and standard concerning to correspondence should join the valuation for the spirit of ideal transmittal of messages and the physical bits of non-verbal. The motivation behind adapting any language is to convey adequately. Language assumes a pivotal part in correspondence and English is the chief and most vital device of communication throughout the world. The urban foundation aspirants display a significant proportion of systems for learning English for healthy communication and arrangement to upgrade their fundamental aptitudes for learning language, though country student's hopefuls have just constrained introduction. Today, standard empowering techniques supplements with present-day framework rely on performance and media resources with the help of 'dramatization' and 'learning by doing' strategies develops a moving perspective among students to take the language. It would enable them to meet the demands of the day in imaginative. The motif to study is the keen observation on 'performance of language abilities obviously of rural learners'. The observation and discussions suggested that the 'dramatization' and 'learning by doing' method suits to enhance communication skills. This article will exemplify these techniques and present research the accomplishment of the use of theatre and dramatization works on upgrading core competence skills among rural background. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 79) Sampath Dakshina Murthy, A.<sup>a</sup>, Das, R.P.<sup>a</sup>, Karthikeyan, T.<sup>b</sup>

**Optimization of deep neural networks for modeling traffic data using GPS**

(2019) *International Journal of Recent Technology and Engineering*, 7 (6), pp. 730-735.

<sup>a</sup> Department of Electronics and Communication Engineering, Vignan's Institute of Information Technology, Visakhapatnam, A.P, India

<sup>b</sup> Departments of Electronics and Communication Engineering, KLEF, Guntur, A.P, India

**Abstract**

As accident is increasing continually.GPS created traffic data need to optimal .Deep neural networks having more number of hidden layers are the rest portable to solution .Selecting proper DNNs the main objective . By trial and error proper the selective of DNN has been achieved for optimization of traffic data. © 2019, Blue Eyes Intelligence Engineering and Sciences Publication. All rights reserved.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 80) Swathi, K.V.R.<sup>a</sup>, Kumar, G.V.N.<sup>b</sup>

**Design of intelligent controller for reduction of chattering phenomenon in robotic arm: A rapid prototyping**

(2019) *Computers and Electrical Engineering*, 74, pp. 483-497.

**DOI:** 10.1016/j.compeleceng.2017.12.010

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<sup>b</sup> Department of EEE, Vignan Institute of Information Technology, Visakhapatnam, India

**Abstract**

Robots functioning in the place of living beings is becoming more reliable as they can endure drastic physical conditions and can operate in airless conditions. Further, they can perform risky jobs and be not bothered by the job security and reputation. Sliding Mode controller (SMC) is a robust controller that has high stability, but it suffers from the problem of chattering. Power losses and severe electromagnetic interference (EMI) noises produced by the converter due to high switching frequency yields chattering. This paper puts forth the design of a hierarchal controller using differential flatness property to track the angular velocity trajectory of permanent magnet DC motor driven by a DC-DC buck converter. A cascaded control is used to regulate the DC-DC buck converter and it aids to reduce the chattering phenomenon to a minimum level. In addition, this control enhances the performance of the system by maintaining fixed switching frequency. Experimental observations show that the angular velocity is well traced under abrupt conditions. © 2017 Elsevier Ltd

**Publisher:** Elsevier Ltd

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**Publication Stage:** Final

**Source:** Scopus

- 81) Aruna, S.<sup>a</sup>, Venkatesh, S.<sup>a</sup>, Naik, K.S.<sup>b</sup>

**A low power and high speed array multiplier using on-the-fly conversion**

(2019) *International Journal of Recent Technology and Engineering*, 7 (5), pp. 345-349.

<sup>a</sup> ECE Department, Andhra University college of Engineering (A), Visakhapatnam, India

<sup>b</sup> ECE Department, Vignan's Institute of Information Technology (A), Visakhapatnam, India

**Abstract**

A low power and high speed On-The-Fly Conversion (OTFC) array multiplier is proposed with optimum design resulting in reduced delay, low power intake and dwindled silicon area. In the multiplier design (single precision truncated) recommended earlier, the product of 2N-bits produces 2N but partial products, excluding this 2N bit partial products, are

going to be divided into  $2N-(N/2)$  bits and  $N/2$  bits. As a result finally,  $2N$  bits are created by the adding of above bits using ripple carry adder. The array multiplier outlined in this paper is designed and implemented with no truncation or addition technique, instead, it is executed using a typical array multiplier scheme. The proposed array multiplier in this paper produces the high order bit (MSB) of the final product. The multiplier design outlined in this paper leverages the On the Fly Conversion converter that is implemented at the tail end of the multiplier. This is to achieve the expedited carry propagation in the last leg of the multiplication. To highlight and contrast the benefits of the proposed array multiplier we have considered the previous designs proposed for different bits (8, 16 and 32) for features and critical parameters like silicon area, delay and power. As part of the implementation, we are able to attain remarkable results with low power consumption, minimum delay, smaller area and less energy. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

82) Naik, K.S., Aruna, S., Banavathu, K., Prasad, P.V.

**Design and analysis of different patch geometry and complementary split ring resonator for X-band applications**  
 (2019) *International Journal of Recent Technology and Engineering*, 7 (5), pp. 858-869.

Department of ECE Vignan's Institute of Information Technology (A), Visakhapatnam, India

#### Abstract

In this paper, a comparative study between the probe feed and strip line feed on a circular, rectangular, triangular and hexagonal Patch Antenna are presented in this paper to compare the performance of antenna parameters. Rectangular and Circular configurations are most popular because they exhibit better characteristics but here triangular and hexagonal shapes are also taken due to advantage of compact size. At later stage, two metamaterial inspired rectangular and circular complementary split ring resonators are proposed and designed using microstrip line feeding to achieve antenna miniaturization. The proposed antennas are structured with flame retardant FR4 Epoxy substrate has thickness  $h=1.6\text{mm}$  and relative permittivity  $\epsilon_r=4.4$ . The proposed microstrip patch antennas are designed for X-band application. The proposed antennas are implemented and pretended utilizing High Frequency Structure Simulator (HFSS) software version v17.2. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

83) Aruna, S.<sup>a</sup>, Sravan, K.<sup>a</sup>, Naik, K.S.<sup>b</sup>

**Design of 9-T QSTCAM using LECTOR low power technique in 45nm CMOS technology**  
 (2019) *International Journal of Recent Technology and Engineering*, 7 (5), pp. 328-334.

<sup>a</sup> ECE Department, Andhra University college of Engineering (A), Visakhapatnam, India

<sup>b</sup> Vignan's Institute of Information Technology (A), Visakhapatnam, India

#### Abstract

Hardware search engine constitutes of an important role to enhance the speed of the process towards search of the high speed appliances. TCAM is that sort of a hardware which completes the search cycle in a single clock and it uses different mask storage and content storage. A  $128 \times 32$  bit TCAM is implemented with selective match line evaluation scheme in predictive 45nm CMOS process and in this paper a TCAM is designed using LECTOR low power technique. © BEIESP.

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**Publication Stage:** Final  
**Source:** Scopus

84)



Gangu, K.K.<sup>a c</sup>, Maddila, S.<sup>b c c</sup>, Mukkamala, S.B.<sup>b</sup>, Jonnalagadda, S.B.<sup>c</sup>

**Catalytic activity of supra molecular self-assembled Nickel (II) coordination complex in synthesis of indeno-pyrimidine derivatives**

(2019) *Polyhedron*, 158, pp. 464-470.

**DOI:** 10.1016/j.poly.2018.11.041

<sup>a</sup> Vignan's Institute of Information Technology, Duvvada, Visakhapatnam, Andhra Pradesh 530049, India

<sup>b</sup> Department of Chemistry, GITAM Institute of Science, GITAM University, Visakhapatnam, Andhra Pradesh 530045, India

<sup>c</sup> School of Chemistry & Physics, University of KwaZulu-Natal, Westville Campus, Private Bag X54001, Durban, 4000, South Africa

**Abstract**

A supra molecular self-assembled Ni(II) coordination complex, formulated as  $[Ni_2(2,6\text{-pydc})_2(\mu\text{-}4,4'\text{bpy})(H_2O)_4] \cdot 2H_2O$  (2,6-pydc: pyridine-2,6-dicarboxylic acid, 4,4'bpy:4,4'-bipyridine) was synthesized under hydrothermal condition and characterized by single crystal X-ray diffraction, elemental analysis, FT-IR, powder X-ray diffraction and thermo gravimetric analysis. Single crystal X-ray diffraction analysis reveals that the complex crystallizes in the monoclinic space group P21/c with cell parameters  $a = 10.5237(6) \text{ \AA}$ ,  $b = 20.1966(10) \text{ \AA}$ ,  $c = 7.2366(4) \text{ \AA}$ ,  $\beta = 106.96(1^\circ)$ ,  $V = 1471.22(314) \text{ \AA}^3$  and displays a 3D supramolecular network through hydrogen bond and C–H $\cdots\pi$ , C–O $\cdots\pi$  interactions. Nickel(II) metal species in the structure possess coordinately unsaturated centers, which exhibited viable catalytic properties in the synthesis of five different indeno-pyrimidine derivatives through one-pot reaction involving aldehyde, indane-1,3-dione and guanidinium chloride in a green approach. With the reaction achieved in 15 min time interval in ethanol in excellent yields (87–98%), plus the good recyclability (up to 6 times) provides advantage to this complex in heterogeneous catalysis. © 2018 Elsevier Ltd

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**Publication Stage:** Final

**Source:** Scopus

85) Rahim, R.<sup>a</sup>, Nguyen, P.T.<sup>b</sup>, Nurwita<sup>c</sup>, Lydia, E.L.<sup>d</sup>, Shankar, K.<sup>e</sup>

**Green data science in cyber security: Network security threat detection and prevention techniques [Un estudio sobre herramientas y técnicas para modelos de negocio.]**

(2019) *Opcion*, 35 (Special Issue 20), pp. 2899-2921.

<sup>a</sup> Sekolah Tinggi Ilmu Manajemen Sukma, Medan, Indonesia

<sup>b</sup> Department of Project Management, Ho Chi Minh City Open University, Viet Nam

<sup>c</sup> Universitas Pamulang, Indonesia

<sup>d</sup> Vignan's Institute of Information Technology(A), Department of Computer Science and Engineering, Visakhapatnam, Andhra Pradesh, India

<sup>e</sup> Department of Computer Applications, Alagappa University, India

**Abstract**

Nowadays a business models, supported the merchandise sales, to new product-service systems is chance for industrial corporations to realize and new advantage. Because it needs elementary changes within the structure, culture and competencies of the corporate and ne'er the less makers overtime fight with this innovation. Rarely, however industrial perceive they ought to reconfigure the weather of the business model (BM). Additionally, Product-Service System is a business models extensively and tiny support to the still offers and decision-making method relating to the service transformation. An application of the framework during a capital product manufacturer and supply analysis insights. The tools to work out the business model for any organization for the innovation of the business. The business model innovation for achieving profitable, growth of business model. Business models the method of the methodology to sensible, toolkit has been developed by the used of techniques. A business model produce, describe, creates, delivers and captures worth. The business model method is modification, operating and construction is named the business model innovation of the business strategy. © 2019, Universidad del Zulia. All rights reserved.

**Publisher:** Universidad del Zulia

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**Source:** Scopus

- 86) Syaifuddin<sup>a</sup>, Fedchenko, E.A.<sup>b</sup>, Nguyen, P.T.<sup>c</sup>, Lydia, E.L.<sup>d</sup>, Shankar, K.<sup>e</sup>

**The role of risk management and business control for a small business [El papel de la gestión de riesgos y el control comercial para una pequeña empresa]**

(2019) *Opcion*, 35 (88), pp. 2899-2921.

<sup>a</sup> Universitas Prima Indonesia, Indonesia

<sup>b</sup> Financial University under the Government of the Russian Federation, Russian Federation

<sup>c</sup> Department of Project Management, Ho Chi Minh City Open University, Viet Nam

<sup>d</sup> Vignan's Institute of Information Technology(A), Department of Computer Science and Engineering, Visakhapatnam, Andhra Pradesh, India

<sup>e</sup> Department of Computer Applications, Alagappa University, India

**Abstract**

Now a days, economic environment is growing widely, so the risk management become popular as compare to earlier year. The growth of any economy is always related to these small and medium size enterprises. Business management is most important factor in any type of business, as it relates to growth of business. Any business always comes with multiple risk factors in market place. So risk management is important for maintaining balance of our business and there growth. Business risk can destroy small business, so the risk management is important to prevent business. In the paper, the risk management process is studied and business controls are introduced to prevent small and medium size company. It has given effective solution for business control in market-place. This paper proposed the role of risk management in corporation, internal and external risk management, and project risk and business control management process. © 2019, Universidad del Zulia. All rights reserved.

**Publisher:** Universidad del Zulia

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**Publication Stage:** Final

**Source:** Scopus

- 87) Reddy, M.S.<sup>a</sup>, Krishna, S.M.M.<sup>b</sup>

**Effectiveness of CRM practices in housing finance schemes: An empirical analysis in the selected private banks**

(2019) *Journal of Advanced Research in Dynamical and Control Systems*, 11 (6), pp. 299-307.

<sup>a</sup> Department of Management Studies, Vignan's Foundation for Science Technology and Research Deemed to be University, Guntur, Vadlamudi, Andhra Pradesh, India

<sup>b</sup> Department of Management Studies, Vignan Institute of Information Technology, Duvvada, Visakhapatnam, Andhra Pradesh, India

**Abstract**

This paper is aimed to understand the customer relationship management practices followed by the private sector banks in India. In the existing excessive competition, how the banks are surviving with the implementation of CRM practices to retain the existing customers and to attract the new customers. Review of literature facilitated to understand the current CRM trends of private banks, hence the researcher found that the factors such as inter-personal communication, accessibility, convenience and customer experience are the considerable factors of effective CRM practices and the author attempted to test the impact of concerned independent variables impact over the intention to attain the housing finance in the private banks. Further it has been tested the impact of intention to attain the housing finance to take a purchase decision of housing finance. There are 575 samples drawn from the different private sector banks in the state of Andhra Pradesh. The data is analyzed by using simple linear regression analysis. The results evidenced for the existence of CRM practices in the private sector banks and necessary recommendations are provided to the banking sector with this study. © 2019, Institute of Advanced Scientific Research, Inc. All rights reserved.

**Publisher:** Institute of Advanced Scientific Research, Inc.

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**Source:** Scopus

- 88)

Rahim, R.<sup>a</sup>, Masitoh, F.<sup>b</sup>, Kuzmichev, A.B.<sup>c</sup>, Lydia, E.L.<sup>d</sup>, Shankar, K.<sup>e</sup>

**Green cloud computing ideas with security threats and solutions [Ideas de computación en la nube verde con amenazas y soluciones de seguridad]**

(2019) *Opcion*, 35 (Special Issue 20), pp. 2899-2921.

<sup>a</sup> Sekolah Tinggi Ilmu Manajemen Sukma, Medan, Indonesia

<sup>b</sup> Politeknik Penerbangan Palembang, Indonesia

<sup>c</sup> Togliatti State University, Russian Federation

<sup>d</sup> Vignan's Institute of Information Technology(A), Department of Computer Science and Engineering, Visakhapatnam, Andhra Pradesh, India

<sup>e</sup> Department of Computer Applications, Alagappa University, India

**Abstract**

Cloud Computing gives the capacity to utilize computing and capacity assets on a metered premise and lessen the interests in an associations processing foundation. Cloud computing has been on the ascent for a long time yet the threats to this innovation are currently more unambiguous than any time in recent memory. On the off chance that the business is to be legitimized by the concerned native it should initially defeat a genuine of potential threats, past just cyber-crime. Peoples are not very much aware about the security issues and the dangers worried about cloud computing. It is by all accounts a tremendous boundary to the selection of cloud administrations. The data in regards to how to oversee information security inside a cloud, information protection in the cloud, cloud security principles, the administrative and consistence ramifications of relocating to a cloud model, and so on ought to be surely known before receiving the cloud administration and arrangements. This paper introduces a comprehension of this intricate situation and explains every one of these issues by distinguishing and ordering the fundamental security concerns and arrangements in cloud computing and gives complete direction on the best way to explore the field of cloud computing to accomplish the most extreme profit for cloud ventures without bargaining data security. © 2019, Universidad del Zulia. All rights reserved.

**Publisher:** Universidad del Zulia

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

89) Rosmika, E.<sup>a</sup>, Nguyen, P.T.<sup>b</sup>, Gushchina, O.M.<sup>c</sup>, Laxmi Lydia, E.<sup>d</sup>, Shankar, K.<sup>e</sup>

**A study on tools and techniques for business models [Ciencia de datos ecológicos en ciberseguridad: Técnicas de detección y prevención de amenazas de seguridad de red]**

(2019) *Opcion*, 35 (Special Issue 20), pp. 2899-2921.

<sup>a</sup> Universitas Amir Hamzah, Medan, Indonesia

<sup>b</sup> Department of Project Management, Ho Chi Minh City Open University, Viet Nam

<sup>c</sup> Togliatti State University, Russian Federation

<sup>d</sup> Vignan's Institute of Information Technology(A), Department of Computer Science and Engineering, Visakhapatnam, Andhra Pradesh, India

<sup>e</sup> Department of Computer Applications, Alagappa University, India

**Abstract**

In this new time of digitalization, cyber-attack are constrained by inventive, wise and profoundly expert people. Continuous synchronization enables an attacker to bit by bit get familiar with the objective system, adjust to any protective measures, and advance the attack after some time. On the off chance that we have not actualized any system security risk recognition benefits from our association, it will uncover the closure of our forthcoming overwhelming voyage. System security threat identification centers around individual stages, frameworks, systems, endpoints or practically some other IT asset. System security threats recognition is juvenile (and remarkable) in real digital security tasks. By and by digital protectors by and large rebate these methodologies for mark location and instinct. The progression for this is most likely special, including getting designs, chance hunger and choice focuses. We require a total comprehension of all parts of the information age process. Information science will deliver specialized information that takes into consideration "strategic" revelation of a potential trade off on a framework that choose when to square and when to alert on something. This paper expects to actualize the idea of information science for system security risk identification. © 2019, Universidad del Zulia. All rights reserved.

**Publisher:** Universidad del Zulia

**Document Type:** Article

**Publication Stage:** Final  
**Source:** Scopus

- 90) Lestari, V.A.<sup>a</sup>, Nguyen, P.T.<sup>b</sup>, Nguyen, Q.L.H.T.T.<sup>c</sup>, Huynh, V.D.B.<sup>d</sup>, Laxmi Lydia, E.<sup>e</sup>, Shankar, K.<sup>f</sup>

**The application system to know the attendance list**

(2019) *Test Engineering and Management*, 81 (11-12), pp. 1146-1154.

<sup>a</sup> Department of Information Systems, STMIKPringsewu, Lampung, Indonesia

<sup>b</sup> Department of Project Management, Ho Chi Minh City Open University, Viet Nam

<sup>c</sup> Office of Cooperation and Research Management, Ho Chi Minh City Open University, Viet Nam

<sup>d</sup> Department of Learning Material, Ho Chi Minh City Open University, Viet Nam

<sup>e</sup> Vignan's Institute of Information Technology(A), Department of Computer Science and Engineering, Visakhapatnam, Andhra Pradesh, India

<sup>f</sup> Department of Computer Applications, Alagappa University, India

**Abstract**

SMP 1 Ambawara is one of the biggest junior high schools in this district. Among them there are many prospective students who register at junior high school. The students are enrolled in junior high school, the learning activities experience problems or problems. Some of them have problems in knowing attendance students every day. In today's modern era many advanced technologies are applied by the school. One of the application systems is to be able to know the attendance list of students. With the application system, the problems in presence can be identified quickly using the Delphi 7 application. © 2019 Mattingley Publishing. All rights reserved.

**Publisher:** Mattingley Publishing

**Document Type:** Article  
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**Source:** Scopus

- 91) Berlian, Z.<sup>a</sup>, Nguyen, P.T.<sup>b</sup>, Panyukova, E.V.<sup>c</sup>, Lydia, E.L.<sup>d</sup>, Shankar, K.<sup>e</sup>

**A dynamic business model for it industries [Un modelo de negocio dinámico para las industrias de ti]**

(2019) *Opcion*, 35 (Special Issue 20), pp. 2899-2921.

<sup>a</sup> Universitas Islam Negeri Raden Fatah Palembang, Indonesia

<sup>b</sup> Department of Project Management, Ho Chi Minh City Open University, Viet Nam

<sup>c</sup> Togliatti State University, Russian Federation

<sup>d</sup> Vignan's Institute of Information Technology(A), Department of Computer Science and Engineering, Visakhapatnam, Andhra Pradesh, India

<sup>e</sup> Department of Computer Applications, Alagappa University, India

**Abstract**

The business models is summarized into two distinct approach by the static and also the transformational. This aim of proposes a 3rd approach for business, particularly a dynamic approach to business models and the versatile and adaptive of business models is developed more supported the commercial network and structure approach. The business model is embedded system in business contents and business networks model, and relies on changes within the business setting. Because of these mutual dependent between business network peoples, and within of the recent capabilities and the business models of resources, the business model might also depend upon production and co-production, collect and share, and be utilized by the numerous actors embedded system in worth networks business of IT industries. This differs from the normal read, during which corporations produce worth severally of every different. A network model, flexible, and co-produced business model works a unique tool for business model environments. © 2019, Universidad del Zulia. All rights reserved.

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- 92) Daud, A.<sup>a</sup>, Nguyen, P.T.<sup>b</sup>, Shichiyakh, R.A.<sup>c</sup>, Laxmi Lydia, E.<sup>d</sup>, Shankar, K.<sup>e</sup>

**Impact of long term planning on revenue on business**

(2019) *Opcion*, 35 (Special Issue 19), pp. 2899-2911.

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**Abstract**

Developing a selling set up takes time. It is a in small stages method that has distinguishing and searching your goals of market, understanding your level of competitive position, rank, dividing your business from the Contention, graphing out your sale combine. Establish a selling set up is one amongst the foremost vital belongings you will do to confirm the victory and property of revenue on business. In order to make a sure fire selling set up, you first ought to outline your selling methods short and long run. Revenues area of unit bill book your company create from fees it charges for services it make or merchandise it sells. These revenues area unit divided as operative revenues, as a result of they are available from the most business and company. Revenues that come back from profit on sale of assets or profit attained on investments area unit thought about not work on revenues. Revenues area unit the highest line on an operating word. © 2019, Universidad del Zulia. All rights reserved.

**Publisher:** Universidad del Zulia

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**Publication Stage:** Final

**Source:** Scopus

- 93) Andarmoyo, S.<sup>a</sup>, Syandri, G.<sup>b</sup>, Nguyen, P.T.<sup>c</sup>, Lydia, E.L.<sup>d</sup>, Shankar, K.<sup>e</sup>

**Need of ontology based systems in healthcare system [Necesidad de sistemas basados en ontología en el sistema healthcare]**

(2019) *Opcion*, 35 (Special Issue 20), pp. 1214-1228.

<sup>a</sup> Universitas Muhammadiyah Ponorogo, Indonesia

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**Abstract**

Recently on the Semantic Web the healthcare is consider as one of the finest topic. To match the concept to the indexed documents into s set of representative the textual query is transformed. For apt documents manually the end user still has to search. In this way it becomes a crucial task to detect the information of patients. The theory of object is its relationship is considered as Ontology. In information science and computer science the ontology encompasses a definition, representation and formal naming of the relations, categories and properties between entities, concepts and data that substantiate all, many or one domains of discourse. © 2019, Universidad del Zulia. All rights reserved.

**Publisher:** Universidad del Zulia

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**Publication Stage:** Final

**Source:** Scopus

- 94) Laxmi Lydia, E.<sup>a</sup>, Sharmili, N.<sup>b</sup>, Nguyen, P.T.<sup>c</sup>, Hashim, W.<sup>d</sup>, Maseleno, A.<sup>d</sup>

**Automatic document clustering and indexing of multiple documents using KNMF for feature extraction through Hadoop and lucene on big data**

(2019) *Test Engineering and Management*, 81 (11-12), pp. 1107-1130.

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<sup>b</sup> CSE Department, GayatriVidyaParishad College of Engineering for Women, Viskahpatnam, Andhra Pradesh, India

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<sup>d</sup> Institute of Informatics and Computing Energy, UniversitiTenagaNasional, Malaysia

#### Abstract

The existence of unlabeled text data in documents has become larger and excavating such datasets is a provocative task. The objective of Big Data is to store, retrieve and analyse multiple text documents. Problem Statement: The retrieval of the identical data over large databases is of major concern. Existing Solution: Existing problem is solved by Full-Text Search (FTS) which means pattern matching technique that allows searching of multiple keywords at specific time. Proposed Solution: In this paper, we consider multiple text documents as input and processed using text mining pre-processing algorithms like Key Phrase extraction, Porter's stemming for tokenizing and TF\_IDF to obtain all non-negative values. These values further processed to get matrix data through Nonnegative matrix factorization (NMF). On performing NMF, K-means algorithm is upgraded with NMF to obtain quality clusters of data sets. Performances of the algorithms are tested using NewsGroup20 data in Open Source Hadoop software environment which also analyses the performance of the MapReduce framework. The final outcome is to generate clusters and index them for the NewsGroup20 dataset. Later on, Apache Lucene is presented for automatic document clustering with a GUI interface developed for indexing. Thus, this proposed algorithm results by improving the performance of document clustering through Map Reduce framework in Hadoop. © 2019 Mattingley Publishing. All rights reserved.

**Publisher:** Mattingley Publishing

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 95) Sai Krishnan, G.<sup>a</sup>, Ganesh Babu, L.<sup>b</sup>, Kumaran, P.<sup>c</sup>, Yoganjaneyulu, G.<sup>d</sup>, Sudhan Raj, J.<sup>e</sup>

#### Investigation of Caryota urens fibers on physical, chemical, mechanical and tribological properties for brake pad applications

(2019) *Materials Research Express*, 7 (1), art. no. 015310, .

**DOI:** 10.1088/2053-1591/ab5d5b

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<sup>d</sup> Department of Mechanical Engineering, Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh, India

<sup>e</sup> Department of Mechanical Engineering, Karunya Institute of Technology and Sciences, Coimbatore, Tamil Nadu, India

#### Abstract

The idealization of this research work is to extend the utilization of the naturally available fibers as a key ingredient in the development of a non-asbestos free brake pad. The fibers used in this work are Caryota urens, which is found all over the Asian regions and abundantly available. The compression molding machine was used to develop the non-asbestos free brake pad. The fibers were added in weight percentages of 5, 10 and 15. The various physical, chemical, and mechanical properties were evaluated. Chase test rig was used to evaluate the tribological properties. The combination of Caryota urens fiber with the barytes had a more significant influence on the tribological properties. The brake pad composites with ten weight percent of Caryota urens fibers based brake pads possessed a good coefficient of friction values with less fade values and less fluctuations. Increasing the weight percentage of Caryota urens fibers in the brake pad formulation had a decreasing trend in the wear performance but increased recovery properties. © 2019 The Author(s). Published by IOP Publishing Ltd.

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Kembauw, E.<sup>a</sup>, Soekiman, J.F.X.S.<sup>b</sup>, Lydia, E.L.<sup>c</sup>, Shankar, K.<sup>d</sup>, Huda, M.<sup>e</sup>

**Benefits of corporate mentoring for business organization**

(2019) *Journal of Critical Reviews*, 6 (5), pp. 101-106.

**DOI:** 10.22159/jcr.06.05.17

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**Abstract**

In today's business world it require high-quality and low-cost arrangements. Beginning a mentoring program in the business enables to exploit the most prominent asset, representatives. Deliberately building up their ability adds to the organization's development, advancement, and main concern. It shows the executives' help, intrigue, and worry for a worker's potential with the organization. It shows to representatives that administration is happy to contribute the time and assets important to assist workers with prevailing in their vocations. Consequently, employees are bound to be progressively gainful and faithful to the organization. © 2019 BY ADVANCE SCIENTIFIC RESEARCH.

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**Source:** Scopus

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**Labor disputes prevention and resolution for healthy environment of business organization**

(2019) *Journal of Critical Reviews*, 6 (5), pp. 107-110.

**DOI:** 10.22159/jcr.06.05.18

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**Abstract**

In the employment relationship conflicts and grievances are consider as the inevitable part. The goal of open strategy is to promote sound labor relations and manage conflict by making a system for settlement of labor disputes and effective prevention. Labor administrations normally build up labor dispute methods in national enactment. A key goal of powerful frameworks is to guarantee that at every possible opportunity, the gatherings to the dispute settle it through an accord based procedure, for example, mediation and conciliation, before returning to adjudication and arbitration through a labor or tribunal court.. © 2019 BY ADVANCE SCIENTIFIC RESEARCH. THIS IS AN OPEN-ACCESS ARTICLE UNDER THE CC BY LICENSE ([HTTP://CREATIVECOMMONS.ORG/LICENSES/BY/4.0/](http://creativecommons.org/licenses/by/4.0/)).

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**Publication Stage:** Final

**Source:** Scopus

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**The increasing market of ecommerce and its impact on retailer**

(2019) *Journal of Critical Reviews*, 6 (5), pp. 122-127.

**DOI:** 10.22159/jcr.06.05.21

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#### Abstract

In our routine life internet plays an important role. We use web day by day nearly for each and every work. Before e-commerce purchasing and selling were managed without internet physically in the business sectors however after the appearance of web based business in our life has become increasingly helpful on account of its number of points of interest. The motivation behind this examination is to discover the impact and development of e-commerce and its effect on national and worldwide market. this exploration is for to see how E-Commerce as a part blasted and acquired a change the inclinations of the shopper along these lines contacting every one of their lives. © 2019 by Advance Scientific Research.

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**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

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**Concept of electronic document management system (EDMS) as an efficient tool for storing document**  
(2019) *Journal of Critical Reviews*, 6 (5), pp. 85-90.

**DOI:** 10.22159/jcr.06.05.14

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<sup>e</sup> Universiti Pendidikan Sultan Idris, Malaysia

#### Abstract

In multiple formats for managing the use, storage and creation of documents that are made all through an association a framework of tools is consider as electronic document management system (EDMS). For managing and capturing the both images and digital files of scanned documents the document management generally consider as a centralized software system. With enterprise content management (ECM) system the Electronic document management systems share numerous comparable features, be that as it may, the software system of document management center around the optimization of structured and active documents and utilization of data, like emails and other defined formats, PDF files, PowerPoint, Word documents, Excel spreadsheets, though ECM frameworks additionally oversee rich media formats and manage unstructured content.. © 2019 by Advance Scientific Research.

**Publisher:** Innovare Academics Sciences Pvt. Ltd

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

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**How data analytics and survey data is important for the long term decision of business**  
(2019) *Journal of Critical Reviews*, 6 (5), pp. 117-121.

**DOI:** 10.22159/jcr.06.05.20

<sup>a</sup> Bali tourism polytechnic, Bali, Indonesia

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<sup>c</sup> Universitas Pattimura, Indonesia

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Andhra Pradesh, India

<sup>e</sup> Department of Computer Applications, Alagappa University, India

**Abstract**

In today's tumultuous business environment it is very difficult to have the ability to make the efficient and effective decisions. To make informed choices and to evaluate alternatives in order for firms they should have timely and reliable information upon which they make their decisions. To an organization the effective data management techniques development is of significant importance, with nearly overwhelming quantity of information as they find themselves inundated many organizations are learning that this is not an easy work. Keywords- data management, organization, techniques. © 2019 by Advance Scientific Research.

**Publisher:** Innovare Academics Sciences Pvt. Ltd

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

101) Alam, S.<sup>a</sup>, Mustapa, T.<sup>b</sup>, Lydia, E.L.<sup>c</sup>, Shankar, K.<sup>d</sup>, Abadi, S.<sup>e</sup>

**A study on managing fake customer review and order claim using loop holes in e-commerce strict consumer friendly policies**

(2019) *Journal of Critical Reviews*, 6 (5), pp. 133-137.

**DOI:** 10.22159/jcr.06.05.23

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**Abstract**

ECommerce has changed the lives of individuals around the globe and its development isn't giving any indications of backing off. In our routine life internet plays an important role. We use web day by day nearly for each and every work. The points of interest offered by e-commerce are online shopping of anything whenever and at wherever, clients can discover the items on web based business sites which is no accessible in physical markets, it decreases cost and time, without venturing out from home it can get our item at home. It have most likely been blamed for selling fake things by a client despite the fact that it can vouch that it got items straightforwardly from the producer or was preferred choice to get from their apparatus when it was made. © 2019 by Advance Scientific Research.

**Publisher:** Innovare Academics Sciences Pvt. Ltd

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

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**The role of decision support system and risk management**

(2019) *Journal of Critical Reviews*, 6 (5), pp. 111-116.

**DOI:** 10.22159/jcr.06.05.19

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<sup>e</sup> Department of Computer Applications, Alagappa University, India

**Abstract**

A computer based information framework that supports organizational or business decision-making activities is known as

decision support system (DSS). For risk managers decision support system would be useful. Decision support system serve the operations, planning and management levels of an organization and help to decide, which might be quickly changing and not effectively determined ahead of time. In distributed software development risk management is a well-inquired about territory, giving various techniques to suggesting and assessing control procedures. Numerous concentrates in chance the executives have been centered around the management procedure, contract connection, and risk examination in the previous decade, however not many contemplates have tended to extend dangers from the viewpoint of hazard effectiveness. Risk management decision models are chosen from a broad writing survey. Into a decision support system these models are incorporated. © 2019 by Advance Scientific Research. This is an open-access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>)

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103) Hermawati, A.<sup>a</sup>, Lydia, E.L.<sup>b</sup>, Shankar, K.<sup>c</sup>, Hashim, W.<sup>d</sup>, Maseleno, A.<sup>d</sup>

**Concept of telemarketing study and its type and importance**  
 (2019) *Journal of Critical Reviews*, 6 (5), pp. 138-142.

**DOI:** 10.22159/jcr.06.05.24

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<sup>d</sup> Institute of Informatics and Computing Energy, Universiti Tenaga Nasional, Malaysia

#### **Abstract**

The telemarketing thought covers superb technique of telemarketing all over world. This technique is additionally called the within sales. It practices marketing, a technique wherever a sales person calls on to prospective customers and patrons to sell and gift the businesses' merchandise and services within the use of telephones and therefore the web. The telemarketing thought has been a rave technique within the business arena owing to the positive outcome and several other advantages. Many Businesses produce their own centre company to try to to the telecommerce task. These decision centres will either be in outward-bound or arriving calls. Either way, an enormous revenue come back comes by through these processes. The telemarketing thought has stunned folks within the business domain in many ways. This has several method of telemarketing coaching. These trainings area unit designed for various jobs. For a business to thrive, it is necessary for the top of workplace to follow a precise methodology or technique. A bit like in enjoying games, businesses would like a technique that's constant in manufacturing a positive outcome. Businesses have planned many strategies simply to seek out the proper approach for fulfilment. Through years of discovering and experimenting what methodology would satisfy these businessmen's desires and necessities, the selling construct has been born. © 2019 by Advance Scientific Research.

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**Document Type:** Article  
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**Source:** Scopus

104) Zulaikha<sup>a</sup>, Lydia, E.L.<sup>b</sup>, Shankar, K.<sup>c</sup>, Gunardi<sup>d</sup>, Wahyudi, A.<sup>e</sup>

**An integrated management system for online shopping portals**  
 (2019) *Journal of Critical Reviews*, 6 (5), pp. 128-132.

**DOI:** 10.22159/jcr.06.05.22

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<sup>b</sup> Vignan's Institute of Information Technology(A), Department of Computer Science and Engineering, Visakhapatnam, Andhra Pradesh, India

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**Abstract**

Presently days the way of life of the individuals is unique. People feel awkward and tedious for going swarmed markets. In this way, online Shopping is a help as it spares parcel of time. Online shopping is the procedure whereby buyers straightforwardly purchase services or goods from a vender progressively, without go-between services, over the web. Likewise with most online exercises, there are unmistakable tradeoffs in online shopping between cost savings, privacy, convenience, and choice. Presently Consumers are progressively receiving electronic channels for obtaining their day by day required items. © 2019 by Advance Scientific Research.

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**Source:** Scopus

- 105) Jermsittiparsert, K.<sup>a b</sup>, Nguyen, P.T.<sup>c</sup>, Nguyen, Q.L.H.T.T.<sup>d</sup>, Huynh, V.D.B.<sup>e g</sup>, Shankar, K.<sup>f</sup>

**Public-private partnership: A bridge between public and private sector [Asociación público-privada: Un puente entre el sector público y el privado]**

(2019) *Opcion*, 35 (Special Issue 20), pp. 2899-2921.

<sup>a</sup> Department for Management of Science and Technology Development, Ton Duc Thang University, Ho Chi Minh City, Viet Nam

<sup>b</sup> Faculty of Social Sciences and Humanities, Ton Duc Thang University, Ho Chi Minh City, Viet Nam

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<sup>g</sup> Department of Computer Applications, Alagappa University, India

**Abstract**

To operate, finance and develop a project like convention centers, parks and public transportation networks the collaboration of company of private sector and government agency is known as Public-private partnerships (PPP). A project can take less time when it financing through public private network. This Public private network provides a bridge between public and private sectors. This partnership is important for developing several business aspects. © 2019, Universidad del Zulia. All rights reserved.

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**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 106) Nguyen, P.T.<sup>a</sup>, Nguyen, Q.L.H.T.T.<sup>b</sup>, Huynh, V.D.B.<sup>c</sup>, Lydia, E.L.<sup>d</sup>, Shankar, K.<sup>e</sup>

**From a business point of view study the importance of event management services of specific company [Desde un punto de vista comercial, estudie la importancia de los servicios de gestión de eventos de una empresa específica]**

(2019) *Opcion*, 35 (Special Issue 19), pp. 2899-2921.

<sup>a</sup> Department of Project Management, Ho Chi Minh City Open University, Viet Nam

<sup>b</sup> Office of Cooperation and Research Management, Ho Chi Minh City Open University, Viet Nam

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<sup>e</sup> Department of Computer Applications, Alagappa University, India

**Abstract**

Organizing, planning and execution of live events are including in event management. In current days a number of event

management services are available, it include a conference, a product or brand launch, a concert, an exhibition, a wedding planning and many more. It can consider that event management is the extended type of advertisement so it will become more attractive. With a survey it is projected that as separate industry it grows 30% per annum. This paper studies the different factors of event management and importance of with business point of view. © 2019, Universidad del Zulia. All rights reserved.

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**Source:** Scopus

- 107) Jermsittiparsert, K.<sup>a b</sup>, Nguyen, P.T.<sup>c</sup>, Nguyen, Q.L.H.T.T.<sup>d</sup>, Huynh, V.D.B.<sup>e g</sup>, Shankar, K.<sup>f</sup>

**A framework of brand management to build business strategies as a function of market [Un marco de gestión de marca para construir estrategias comerciales en función del mercado]**

(2019) *Opcion*, 35 (Special Issue 21), pp. 2899-2921.

<sup>a</sup> Department for Management of Science and Technology Development, Ton Duc Thang University, Ho Chi Minh City, Viet Nam

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**Abstract**

TIn the market how a brand is perceived the planning and analysis in marketing is known as brand management. For brand management with the target market develop a good relationship is very necessary. The product itself include in tangible elements like packaging, price and looks in brand management. The relationships with the brand and experiences that the consumers share are known as the intangible elements. Relationship with members of the supply chain and all aspects of the brand association of consumer are analyzed by a brand manager. © 2019, Universidad del Zulia. All rights reserved.

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**Publication Stage:** Final

**Source:** Scopus

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**Biotechnology in veterinary medicine**

(2019) *Journal of Environmental Treatment Techniques*, 7 (Special Issue), pp. 1157-1160.

<sup>a</sup> Universitas Muhammadiyah Prof. Dr. HAMKA, Indonesia

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**Abstract**

In various areas of medicine biotechnology is consider as already established approach, but to revolutionize veterinary practice with the potential in veterinary medicine field it has only begun to emerge. For animal breeding and veterinary medicine it has proposed new dimensions with the continuous growth of modern biotechnology. To discard any possible genetic disorder it ultimately permits to consequently and detect through genome analysis of important breeding species. It can also detect more reliably and easily the infectious diseases. With improved productivity and health it opens the

possibility to generate animals with the production of transgenic livestock and it introduced a less time taking program of breeding. © 2019, Dorma Journals. All rights reserved.

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**Publication Stage:** Final

**Source:** Scopus

- 109) Sulaeman, R.<sup>a</sup>, Saprudin<sup>b</sup>, Nguyen, P.T.<sup>c</sup>, Lydia, E.L.<sup>d</sup>, Shankar, K.<sup>e</sup>

**Clinical decision support and predictive analytics**

(2019) *Journal of Environmental Treatment Techniques*, 7 (Special Issue), pp. 1209-1214.

<sup>a</sup> Poltekkes Kemenkes Mataram, Indonesia

<sup>b</sup> Sekolah Tinggi Ilmu Administrasi Menara Siswa, Indonesia

<sup>c</sup> Department of Project Management, Ho Chi Minh City Open University, Viet Nam

<sup>d</sup> Vignan's Institute of Information Technology(A), Department of Computer Science and Engineering, Visakhapatnam, Andhra Pradesh, India

<sup>e</sup> Department of Computer Applications, Alagappa University, India

**Abstract**

Every year millions of people are dying because of the not getting treatment on time or the treatment is very expensive. But the CDS and PA may play a vital role in order to identify the disease and treatment may be provided in the early stage of disease. Such way may help to reverse the growing of disease. If the disease is identified at the early stage then antimicrobial therapy may reversal the disease. For this purpose a large number of experiments and research is required. The data sets are required obtained from many health organizations, hospitals and other previous research data. The trials of such experiments required decision support tools, self analyzed reports the experts in clinical predictors for self-performance evaluations and performance depends on neurocognitive tests are very expensive and takes too much time. Although the experiments are not strong enough to take a decision as every person may have different immunity and his body may react differently on every experiment. But CDS and Predictive analysis helps the researchers to reach the closest to predict the treatment.. © 2019, Dorma Journals. All rights reserved.

**Publisher:** Dorma Journals

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 110) Lydia, E.L.<sup>a</sup>, Moses, G.J.<sup>b</sup>, Sharmili, N.<sup>c</sup>, Shankar, K.<sup>d</sup>, Maseleno, A.<sup>e</sup>

**Image classification using deep neural networks for malaria disease detection**

(2019) *International Journal on Emerging Technologies*, 10 (4), pp. 66-70.

<sup>a</sup> Vignan's Institute of Information Technology, India

<sup>b</sup> Raghu Engineering College (Autonomous), Viskahpatnam, Andhra Pradesh, India

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<sup>e</sup> Institute of Informatics and Computing Energy, University Tenaga National, Malaysia

**Abstract**

Since the 19th century, Malaria has become a terrifying life-threatening disease in most of the countries. Its been identified that five countries namely Nigeria with 25%, Congo with a ratio of 11%, Mozambique with ratio of 5%, India with ratio of 4% and Uganda with ratio of 4%. World Health Organization stated that above 90% of malaria death cases were recorded every year. Most of the Indian states like Odisha, Madhya Pradesh, Maharashtra, northern countries, Chhattisgarh got affected by Malaria. India spotted death cases of malaria from millions to thousands that have reduced in recent years. Directorate of National vector Bore disease control program has started malaria control strategies using early case detection and treatments, vector control, protective measures against mosquito bites and management of Environment. The major challenge was to identify the disease at early stage. The key contributions avoid malaria disease is to provide antimalaria drugs, using indoor spray with residual insecticides, mosquito nets. For the treatment, medical technologies, deep learning architectures related to Convolutional Neural Networks to train and test performing different combinations for image

classification using ResNet34 which helps patient go through prior examination for microscopic diagnosis. For patients examination, this paper considers Malaria Cell Images dataset with Parasitized and uninfected images. Thus, this clearly shows that one can easily identify person's condition whether he is infected or uninfected by enabling open-source Artificial Intelligence. It shows the start-of-the-art accuracy by checking individual details. © 2019, Research Trend. All rights reserved.

**Publisher:** Research Trend

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

111) Lydia, E.L.<sup>a</sup>, Sharmil, N.<sup>b</sup>, Shankar, K.<sup>c</sup>, Maselena, A.<sup>d</sup>

**Analysing the performance of classification algorithms on diseases datasets**

(2019) *International Journal on Emerging Technologies*, 10 (3), pp. 224-230.

<sup>a</sup> Department of Computer Science and Engineering, Vignan's Institute of Information Technology (A), Visakhapatnam, Andhra Pradesh, India

<sup>b</sup> Gayatri Vidya Parishad College of Engineering for Women, Viskahpatnam, Andhra Pradesh, India

<sup>c</sup> Department of Computer Applications, Alagappa University, Karaikudi, India

<sup>d</sup> Institute of Informatics and Computing Energy, University Tenaga Nasional, Malaysia

**Abstract**

Change in regular food habits and physical activities of the human body, some of the genetic diseases were inherited from generation to generation. The most common hereditary diseases that stay lifetime are thyroid, diabetics, cancer. Predicting cancer-like diseases consumes time; cure for such hereditary diseases can be identified at an early stage. Medical technology has been improved for the prognosis of healthcare. Healthcare using prediction analysis enhances medical technology. Researchers have advanced Prediction modelling under three phases. In the first state, they define the issue, collection of data and progress the data. In the second state, they choose a model and perform training and testing and in the third state, they apply the model in real-world. This has become a crucial task in the medical field for immediate disease diagnosis. To advance such automatic healthcare prediction system, modern Artificial Intelligent technology has been developed an easy way to identify the existence of the diseases. The proposed research papers examine the diseases through the disease parameters and classify them using various developed intense classification algorithms such as Support Vector Machine, Decision tree, Logistic Regression, K-nearest neighbor, Naive Bayes. The proposed classification algorithms measure the diseases using the disease datasets which estimates the accurate prediction. The experimental analyses have been carried out over three disease datasets namely Thyroid dataset, diabetics data set, cancer dataset. © 2019, Research Trend. All rights reserved.

**Publisher:** Research Trend

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

112) Padhi, S.N.<sup>a</sup>, Rout, T.<sup>a</sup>, Ram, K.S.R.<sup>b</sup>

**Parametric instability and property variation analysis of a rotating cantilever FGO beam**

(2019) *International Journal of Recent Technology and Engineering*, 8 (1), pp. 2921-2925.

<sup>a</sup> Dept.of Mechanical Engg., Koneru Lakshmaiah Education Foundation, Guntur, India

<sup>b</sup> Dept. of Mechanical Engg., Vignan's Institute of Information Technology, Visakhapatnam, India

**Abstract**

This report is presented on the parametric excitation and dynamic stability of functionally graded ordinary (FGO) rotating cantilever Timoshenko beam. The equation of motion is derived using Finite element method in conjunction with Hamilton's principle. Floquet's theory is used to establish the stability boundaries. It is assumed that the properties along the depth of the FGO material beam follows the power law with different indices as well as exponential distribution law. The elastic property variation using power law at different indices and a comparison of elastic property variation between using power law at n=0.5 and exponential law along the thickness of FGO beam have been investigated. The properties drawn by Exponential distribution confirms better stability compared to properties drawn by power law. © 2019 Blue Eyes Intelligence Engineering and Sciences Publication. All rights reserved.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

113) Raghunath, K.M.K.<sup>a</sup>, Patro, C.S.<sup>b</sup>, Sirisha, K.<sup>c</sup>

**Paraphernalias of entrepreneurship - A contemplating outlook**

(2019) *International Journal of E-Entrepreneurship and Innovation*, 9 (1), pp. 47-62.

**DOI:** 10.4018/IJEEI.2019010105

<sup>a</sup> School of Management, National Institute of Technology, Warangal, India

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<sup>c</sup> Department of Basic Sciences and Humanities, Vignan's Institute of Information Technology, Visakhapatnam, India

**Abstract**

Entrepreneurship is the impetus for development of any nation. Entrepreneurship has been the modern way of the industrialisation process which revolutionised the present day of living. In today's world, entrepreneurship has become an act of inspiration which eventually has had a compounding effect on society, and nations as a whole, benefiting mankind. The world is going through a new phase where people no longer just depend on industries to thrive, but come up with an idea reinventing themselves, eventually establishing a start-up. The act of reinventing oneself is nothing but an act of entrepreneurship which is believed to all businesses. The present article deals with ubiquitous issues ranging from entrepreneurial outlook in India and globally, factors influencing entrepreneurship, Global scenario of ease of doing business and many more issues which needs to be prioritised to set the pace for entrepreneurship to flourish. Copyright © 2019, IGI Global.

**Publisher:** IGI Global

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

114) Lydia, E.L.<sup>a</sup>, Pandiselvam, R.<sup>b</sup>, Saranya, R.<sup>c</sup>, Kirutikaa, U.S.<sup>d</sup>, Ilayaraja, M.<sup>e</sup>, Shankar, K.<sup>e</sup>, Maselena, A.<sup>f</sup>

**Data integration and data privacy through "Pay-As-You-Go" approach**

(2019) *International Journal on Emerging Technologies*, 10 (2), pp. 167-173.

<sup>a</sup> Vignan's Institute of Information Technology(A), Department of Computer Science and Engineering, Visakhapatnam, Andhra Pradesh, India

<sup>b</sup> PG Department of Computer Science, Ananda College, Devakottai, India

<sup>c</sup> Department of Computer Science, Dr. Umayal Ramanathan College for Women, Karaikudi, India

<sup>d</sup> Department of Information Technology, Dr. Umayal Ramanathan College For Women, Karaikudi, India

<sup>e</sup> School of Computing Kalasalingam Academy of Research and Education, Krishnankoil, India

<sup>f</sup> Institute of Informatics and Computing Energy, University Tenaga Nasional, Malaysia

**Abstract**

Data Analytics has taken important and demanding problems in the research areas such as computer science, biology, medicine, finance, and homeland security. This research paper has resolved the problem of Entity resolution(ER) which recognizes the database records, which referred to the same real-world entity. The latest explosion of data made ER a impeach problem in a large range of applications. This paper proposed a scalable ER approach, used on-board datasets. Our latest approaches are simple because they consider either the entire ER process or the function, which are matching, and merging records as a black box procedure and used in a large range of ER applications. Pay-as-you-go approach for ER was a limit on the resources (e.g., work, runtime). This made the maximum progress as possible as required. This paper suggests scalable ER methods and new ER functionalities that have been not studied in the previous. Entity Resolution as a black-box operation provides general mechanisms which be used across applications. Further, the issue of managing information leakage, where one must try to avoid important bits of data from resolved by Entity Resolution, to sage against the loss of data privacy. As more of our sensitive data gets unprotected to various merchants, health care providers, employers, social sites and so on, there is a large chance that an adversary can "connect the dots" and piece together our

data, which leads to even more damage of privacy. Thus to measure the quantifying data leakage, we use "disinformation" as a device which containing data leakage. © 2019, Research Trend. All rights reserved.

**Publisher:** Research Trend

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

- 115) Lydia, E.L.<sup>a</sup>, Selvam, R.P.<sup>b</sup>, Kirutikaa, U.S.<sup>c</sup>, Saranya, R.<sup>d</sup>, Ilayaraja, M.<sup>e</sup>, Shankar, K.<sup>e</sup>, Maselena, A.<sup>f</sup>

**Transforming health care big data implementing through Aprior-Mapreduce**  
 (2019) *International Journal on Emerging Technologies*, 10 (2), pp. 71-77.

<sup>a</sup> Vignan's Institute of Information Technology(A), Department of Computer Science and Engineering, Visakhapatnam, Andhra Pradesh, India

<sup>b</sup> Department of Computer Science, Ananda College, Devakottai, India

<sup>c</sup> Department of Information Technology, Dr. Umayal Ramanathan College For Women, Karaikudi, India

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<sup>e</sup> School of Computing Kalasalingam Academy of Research and Education, Krishnankoil, India

<sup>f</sup> Institute of Informatics and Computing Energy, Universiti Tenaga Nasional, Malaysia

#### Abstract

The healthcare industry routinely has generated massive quantities of knowledge, pushed by way of using record preserving, compliance & regulatory specifications, and patient care. The proposed paper specializes in designing of the radical Framework which consists of components and these accessories can be utilized to perform quick analysis by way of connecting clusters which is designed in this work. The proposed paper implements BigData Analytics capabilities as a part of a "Novel Framework" structure that can meet the wants of Health care vendors searching for to strengthen effects and efficiencies at the same time increasing profitability. This paper will help to establish today's and most confirmed techniques that leverage wellness care knowledge enabling corporations to attain excessive first-rate, cost-effective care. The "Novel Framework for health Care massive data" paper is constituted of members from the provider, well-being a procedure, health expertise technological know-how, academic, and wellness policy domains. This numerous staff is well-versed in information evaluation, patient-centered care, health knowledge science, determination support method, and the vital to transform health care supply with revolutionary makes use of wellness knowledge. © 2019, Research Trend. All rights reserved.

**Publisher:** Research Trend

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

- 116) Lydia, E.L.<sup>a</sup>, Prasad, B.<sup>a</sup>, Chevuru, M.B.<sup>b</sup>, Shankar, K.<sup>c</sup>, Kumar, K.V.<sup>d</sup>

**An unsupervised deep learning methods for fabricating text mining analysis based on topic modeling and document clustering techniques**  
 (2019) *International Journal on Emerging Technologies*, 10 (2), pp. 103-1039.

<sup>a</sup> Department of Computer Science Engineering, Vignan's Institute of Information Technology Andhra Pradesh, India

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<sup>c</sup> School of Computing, Kalasalingam Academy of Research and Education, Krishnankoil, Tamil Nadu 626126, India

<sup>d</sup> Department of Computer Science Engineering, Vignan's Institute of Information Technology for Women Andhra Pradesh, India

#### Abstract

The complex-manufacturing digital and textual knowledge is further moved into the web in the form of unstructured text. Problem Statement: To organize and search vast data better computational tools are required and extract them by understanding the knowledge patterns invisible and unlabeled in the data. To notify various decision-making activities all over the product value chain and manufacturing areas, it evolves a challenging way to identify important information taken away through the web. This was the problem identified by many of the organizations. Proposed Solution: In this proposed research paper, a novel approach to provoke the progress of the Search and Organize text documents as well as extract patterns in manufacturing corpus by applying unsupervised document clustering and topic modeling which is statistical



modeling technique through Deep Learning are proposed. Topic modelling is an effective technique for both classifying and characterizing hidden patterns in corpora. Topic modeling implements processing of data similar to text mining. The proposed method choose LDA technique and topic modeling algorithm, where web pages of various manufacturing service providers are used to construct the corpus and manufacture suppliers are used to generating the area of application. For complex unstructured and unsupervised data, use of Document Clustering in association with topic modeling aids the progress for automated annotation and web pages classification. This improves the domain supplier search and information retrieval tools. Moreover, the terms that are extracted from topic modeling process are collaborated with other reference models such as Thesauri and Ontologies of manufacturing industry to enable bottom-up Knowledge Extraction. © 2019, Research Trend. All rights reserved.

**Publisher:** Research Trend

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

117) Lavanya Rekha, P., Vinay Anand, D., Veena, P.

**An experimental study to determine the compaction characteristics and california bearing ratio of soil mixed with fly ash and discrete fibre**

(2019) *International Journal of Mechanical and Production Engineering Research and Development*, 9 (3), art. no. IJMPERDJUN2019182, pp. 1705-1712.

**DOI:** 10.24247/ijmperdjun2019182

Vignan Institute of Information Technology (Autonomous), Duvvada, Visakhapatnam, Andhra Pradesh, India

**Abstract**

Expansive soils have the ability to swell and shrink, which causes lots of structural damages. In the present scenario, soil is stabilized using different waste materials in order to improve its strength. In this study, fly ash and fibers were mixed with soil to investigate the relative strength gain in terms of California bearing ratio tests. The effect of fly ash and fibre on geotechnical characteristics of soil – fly ash and soil-fly ash- fibre mixtures was investigated by conducting standard proctor compaction tests, CBR tests. The tests were performed as per Indian standard specifications. The soil used for the study was brought from Doultabad of Medak district. The physical properties of the soil were determined as per IS specifications. Fly ash for the study was brought from Raichur, Karnataka. An experimental study was carried out to determine the compaction characteristics and California bearing ratio of soil and fly ash mixed with discrete fibre of 12mm length. The results obtained from the study indicate that the addition of fly ash and fibre to soil increases the California bearing ratio values when compared to that of unreinforced soil. © TJPRC Pvt. Ltd.

**Publisher:** Transstellar Journal Publications and Research Consultancy Private Limited (TJPRC)

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

118) Sowjanya, P.

**Computer aided software integrated automated safety system**

(2019) *International Journal of Computer Aided Engineering and Technology*, 11 (4-5), pp. 561-577.

**DOI:** 10.1504/IJCAET.2019.100456

Department of Computer Science, Vignan's Institute of Information Technology, India

**Abstract**

Software for safety-critical systems must deal with the hazards identified by safety analysis in order to make the system safe. Building a safety-critical software requires special procedures to be used in all phases of the software development process. In this work, we have dealt with safety analysis techniques such as failure modes and effects analysis (FMEA) and fault tree analysis (FTA)-based safety-critical approach towards to development of an integrated automotive safety critical system from a safety perspective. A proposal of software safety architecture and software safety lifecycle has developed here using some important safety techniques. A new software development lifecycle with an integration approach, i.e., Agile-V model is proposed. Driver assistance system like ACCS is a safety critical system which is helpful to prevent accidents by reducing the workload on the driver. The basic design and functionality of ACCS is done with the safety command of bypassing to braking system when needed. As a safety approach for some limitations we have introduced an integrated architecture using fuzzy logic which has less failure cases and improves efficiency. The basic design and

functionality of braking system is done with ABS and without ABS so that stopping distance also decreases. Copyright © 2019 Inderscience Enterprises Ltd.

**Publisher:** Inderscience Publishers

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

119) Anitha, J.<sup>a</sup>, Prasad Reddy, P.V.G.D.<sup>b</sup>, Prasad Babu, M.S.<sup>b</sup>

**Error tolerant global search incorporated with deep learning algorithm to automatic Hindi text summarisation**  
(2019) *International Journal of Business Intelligence and Data Mining*, 14 (3), pp. 359-380.

**DOI:** 10.1504/IJBIDM.2019.098841

<sup>a</sup> Vignan's Institute of Information Technology, Duvvada, Vishakhapatnam, India

<sup>b</sup> Andhra University, Vishakhapatnam, India

#### **Abstract**

There is an exponential growth in the available electronic information in the last two decades. It causes a huge necessity to quickly understand high volume text data. This paper describes an efficient algorithm and it works by assigning scores to sentences in the document which is to be summarised. It also focuses on document extracts; a particular kind of computed document summary. The proposed approach uses fuzzy classifier and deep learning algorithm. Fuzzy classifier produces score for each sentence and the deep learning (DL) also produces score for each sentence. The combination of score from both fuzzy classifier and DL produces the hybrid score. Finally, the summarised text can be generated based on this hybrid score. In our proposed approach, we have achieved an average precision rate of 0.92 and average recall rate of 0.88 and the compression rate is 10% according to the experimental analysis. Copyright © 2019 Inderscience Enterprises Ltd.

**Publisher:** Inderscience Publishers

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

120) Thirupathi Rao, N.<sup>a</sup>, Bhattacharyya, D.<sup>a</sup>, Madhusudhan Rao, V.<sup>b</sup>, Kim, T.-H.<sup>c</sup>

**Water quality testing and monitoring system**  
(2019) *International Journal of Innovative Technology and Exploring Engineering*, 8 (5), pp. 162-166.

<sup>a</sup> Department of Computer Science and Engineering Vignan's Institute of Information Technology (A), Visakhapatnam, AP, India

<sup>b</sup> Department of Convergence Security, Sungshin Women's University, Seoul, South Korea

<sup>c</sup> Department of Chemical Engineering, Vignan's Foundation for Science, Technology and Research (Deemed to be University), Guntur, Vadlamudi, 522213, India

#### **Abstract**

Traditional methods of drinking water quality parameters like turbidity, pH, conductivity and temperature etc., may consume time as samples are tested manually in the laboratory. To overcome this, in the current article an attempt has been made for developing the smart and low-cost IoT system. The parameters considered to test the quality of water are Temperature, Turbidity, pH, Conductivity. Sensors immersed in sampled water are used to measure the above said parameters. The sensed data from the sensors was sent to the Raspberry Pi Unit. The sensed data parameters compared with the standard values which already exist in Raspberry Pi Unit. The data stored in Raspberry Pi accessed from the IOT (cloud). If any change in the standard values was observed, a message or a mail will be sent to the Smartphone through Wi-Fi. In the current work, samples of water were collected to test the purity of water. Also to check the variety of particles those were present in the water. In this work, we use sensors for testing purity of water. The current developed model will detect the particles that are present in the water and also the level of purity in the water. The results were displayed in the form of the numerical values at the display unit that was fixed on the IoT unit. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article  
**Publication Stage:** Final

**Source:** Scopus

121) Umamaheswari, R.<sup>a</sup>, Sumanth Kumar, C.<sup>b</sup>

**Optimization of training sequence based sparse channel estimation for mmwave communications in 5G**  
(2019) *International Journal of Innovative Technology and Exploring Engineering*, 8 (4), pp. 577-581.

<sup>a</sup> Vignan's Institute of Information Technology, Visakhapatnam, India

<sup>b</sup> GITAM University, Visakhapatnam, India

**Abstract**

In this paper to achieve higher data rates with high spectral efficiency and high accuracy we designed training sequence sparse channel estimation based on BAT, Cuckoo and Firefly algorithms. By using the above techniques we design a Training sequence channel estimation to reduce the bit error rate, mean square error and accurate recovery of data. The firefly optimization is the promising technique to reduce the bit error rate and to increase the signal to noise ratio to achieve high spectral efficiency Gbps. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

122) Lakshmi, K., Suresh, A., Gubbala, A.

**Development of FPGA based multi-channel temperature controller using thermistors for under water vehicles**  
(2019) *International Journal of Innovative Technology and Exploring Engineering*, 8 (4), pp. 360-364.

Department of ECE, Vignan Institute of Information Technology, Visakhapatnam, India

**Abstract**

Under water vehicles with electrical propulsion such as underwater autonomous vehicles are designed to propel with high energy batteries. These batteries are the main source of power to motor and other electronic subsystems. Temperature of the batteries is one of the critical parameter that gives the information about the health of the battery and whether the battery is able to deliver the required power to other subsystems. In case of any abnormality such as battery short circuit or other reasons, the temperature of the battery may shoot up to the alarm levels at various places of the battery and other sub sections near to the battery because the temperature is transferred from battery to the nearby shell and other subsystems. For this application, Multi-channel temperature controller is designed, verified and tested in the battery assembly. The proposed system can monitor and control up to the 32 temperature channels by integrating thermistors in the complete test set-up and it is designed in such a way that the battery is disconnected from the other subsystems in case of any abnormality or temperature is increased beyond the safety limit. In this paper, design, calibration and integration and testing of multi-channel Temperature controller using FPGA with thermistors is discussed and the system has internal memory and it can store the temperature at various channels in flash memory so that the system is well suited for not only self-controlled underwater vehicles but also thermal engine based systems. The system can also monitor and control the temperature in harsh environment even also in industrial applications. The system is designed in Spartan 3FPGA using VHDL and verification of the design is done Xilinx chip-scope-pro. The front end Graphical User Interface (GUI) is designed for online monitoring, data downloading and processing using visual C++ and MATLAB. © BEIESP.

**Publisher:** Blue Eyes Intelligence Engineering and Sciences Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

123) Kannam Naidu, Ch.<sup>a</sup>, Vasudeva Rao, Ch.<sup>b</sup>, Madhusudhana Rao, T.V.<sup>c</sup>

**Land use and land cover classification for Visakhapatnam using fuzzy C means clustering and adaptive neuro-fuzzy inference system**  
(2019) *International Journal of Civil Engineering and Technology*, 10 (1), pp. 382-395.

<sup>a</sup> Civil Engineering Department, Vignan's Institute of Information Technology (VIIT), Visakhapatnam, Andhra Pradesh 530049, India

<sup>b</sup> Civil Engineering Department, Aditya Institute of Information Technology (AITAM), Tekkali, Srikakulam, Andhra Pradesh 532201, India

<sup>c</sup> Department of Computer Science Engineering, Vignan's Institute of Information Technology (VIIT), Visakhapatnam, Andhra Pradesh 530049, India

### Abstract

In current decades, Land Use (LU) and Land Cover (LC) classification is the most challenging research area in the field of remote sensing. This research helps in understanding the environmental changes for ensuring the sustainable development. In this research, LU and LC classification assessed for Visakhapatnam city. After collecting the satellite images, Hybrid Directional Lifting (HDL) technique was used to remove the saturation and blooming effects in the input images. The pre-processed satellite images were used for segmentation by applying Fuzzy C means (FCM) clustering. Then, Local Binary Pattern (LBP) and Gray-level co-occurrence matrix (GLCM) features were utilized to extract the features from the segmented satellite images. After obtaining the feature information, a multi-class classifier: Adaptive Neuro-Fuzzy Inference System (ANFIS) was used to classify the LU and LC classes; water-body, vegetation, settlement, and barren land. The experimental outcome showed that the proposed system effectively distinguishes the LU and LC classes by means of sensitivity, specificity, and classification accuracy. The proposed system enhances the classification accuracy up to 7% compared to the existing systems. © IAEME Publication.

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Conference Papers

## Documents

1) Kumar Pedapenki, K.

**Power Quality with ANN and Hysteresis controllers**

(2019) *2019 2nd International Conference on Intelligent Computing, Instrumentation and Control Technologies, ICICICT 2019*, art. no. 8993197, pp. 328-334.

**DOI:** 10.1109/ICICICT46008.2019.8993197

Vignan's Institute of Information Technology, Department of Electrical and Electronics Engineering, Visakhapatnam, Andhra Pradesh, India

**Abstract**

The advantages of converting and controlling the huge electrical power by power electronic converter, lead the entire world to use them enormously. As the nonlinear nature semiconductor devices which are used in power electronic converters has the generation of harmonics to distort the Supply current. In controlling application, the firing angle is applied for switching on of Power Electronic devices leading to a phase difference between voltage and current. This phenomenon draws the reactive power from the Supply. To wipe out these two problems, Shunt Active Power Filters are designed. In this paper, modeling and design of APF parameters are discussed. The two controller viz. voltage controller and current controller are used. PI and advanced ANN are utilized for voltage controller. The hysteresis controller is utilized as current controller to provide proper switching pattern to MOSTETs of APF. The detailed simulation study of the system, results and the discussions for balanced and unbalanced loads have been presented. The comparison between the PI and ANN used as voltage controller for various firing angle has been reported. This work is validated by the hardware implementation using dSPACE 1004 for developing the switching pattern by joining the MATLAB Simulation and Hardware Set Up. © 2019 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

2) Sathish<sup>a</sup>, Shaik, H.<sup>b</sup>, Rafi, S.M.<sup>a c</sup>, Madhavi, P.<sup>d</sup>, Kosuri, Y.R.<sup>e</sup>, Sattar, S.A.<sup>a</sup>, Kumar, K.N.<sup>a</sup>

**Growth temperature influenced electrical properties of copper-oxide thin films**

(2019) *AIP Conference Proceedings*, 2105, art. no. 020027, .

**DOI:** 10.1063/1.5100712

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<sup>c</sup> Division of Advanced Materials Engineering, Institute for Rare Metals, Kongju National University, Chungnam, 31080, South Korea

<sup>d</sup> Plasma Processing Laboratory, Department of Instrumentation and Applied Physics, Indian Institute of Science, Bangalore, 560012, India

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**Abstract**

Copper-oxide thin films are deposited by using reactive magnetron sputtering at different temperatures and investigated the variation in the bonding configuration. We in-turn investigated how this bonding configuration influences its optical and electrical properties such as bandgap, resistivity mobility etc. Even the room temperature (RT) deposited films are crystalline in nature. Bandgap of 2.3 eV has been observed for the films deposited at 400°C. A decreasing trend was observed in hole concentration from  $2 \times 10^{18}$  to  $7 \times 10^{16}$  per  $\text{cm}^3$  with increase in substrate temperature from RT to 400°C. XPS investigations were also done to understand the bonding behavior. © 2019 Author(s).

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**Publication Stage:** Final

**Source:** Scopus

- 3) Sathish<sup>a</sup>, Shaik, H.<sup>b</sup>, Shaik, M.R.<sup>a c</sup>, Madhavi, P.<sup>d</sup>, Kosuri, Y.R.<sup>e</sup>, Sheik, A.S.<sup>f</sup>, Naveen Kumar, K.<sup>a</sup>

**Growth temperature influenced electrical properties of copper-oxide thin films**

(2019) *AIP Conference Proceedings*, 2105, art. no. 020007, .

**DOI:** 10.1063/1.5100692

<sup>a</sup> Department of Physics, Nitte M Eenakshi Institute of Technology, Yelahanka, Bangalore, 560064, India

<sup>b</sup> Centre for Nanomaterials and MemS, Nitte M Eenakshi Institute of Technology, Yelahanka, Bangalore, 560064, India

<sup>c</sup> Division of Advanced Materials Engineering, Institute for Rare Metals, Kongju National University, Chungnam, 31080, South Korea

<sup>d</sup> Plasma Processing Laboratory, Department of Instrumentation and Applied Physics, Indian Institute of Science, Bangalore, 560012, India

<sup>e</sup> Department of Physics, Vignan's Institute of Information Technology, Visakhapatnam, 530049, India

<sup>f</sup> Department of Physics, NitteM Eenakshi Institute of Technology, Yelahanka, Bangalore, 560064, India

**Abstract**

Copper-oxide thin films are deposited by using reactive magnetron sputtering at different temperatures and investigated the variation in the bonding configuration. We in turn investigated how this bonding configuration influences its optical and electrical properties such as bandgap, resistivity mobility etc. Even the room temperature (RT) deposited films are crystalline in nature. Bandgap of 2.3 eV has been observed for the films deposited at 400°C. A decreasing trend was observed in hole concentration from  $2 \times 10^{18}$  to  $7 \times 10^{16}$  per cm<sup>3</sup> with increase in substrate temperature from RT to 400°C. XPS investigations were also done to understand the bonding behavior. © 2019 Author(s).

**Publisher:** American Institute of Physics Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 4) Vani, S., Rao, T.V.M.

**An experimental approach towards the performance assessment of various optimizers on convolutional neural network**

(2019) *Proceedings of the International Conference on Trends in Electronics and Informatics, ICOEI 2019*, art. no. 8862686, pp. 331-336.

**DOI:** 10.1109/ICOEI.2019.8862686

Department of Computer Science Engineering, Vignan's Institute of Information Technology(Autonomous), Visakhapatnam, India

**Abstract**

Artificial Intelligence is a technique of modeling a computer, a computer administered-robot, in the indistinguishable manner the acute humans reflect. Machine Learning is a mechanism of data evaluation that automatizes rational model development. It is a branch of Artificial Intelligence based on the objective that systems can imbibe from the input, discover patterns and resolve with nominal human intrusion. Deep Learning is a sub-discipline of Machine Learning where Layers are used in it to create Artificial Neural Network (ANN). Convolutional Neural Network (CNN), a Deep Learning Architecture has been the most influential innovations in the discipline of Computer Vision. Optimizers shape and mold the model into its most accurate form by futzing with the weights. In this paper, seven optimizers namely Stochastic Gradient Descent (SGD), RMSProp, Adam, Adamax, Adagrad, Adadelat, and Nadam are implemented in CNN on Indian Pines Dataset and accuracy comparison results are shown graphically where Adamax outperforms with 99.58% accuracy. © 2019 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 5) Samatha, B.<sup>a</sup>, Raja Kumar, K.<sup>a</sup>, Karyemsetty, N.<sup>b</sup>

**Performance Analysis of a novel equalizer for vehicular communication**

(2019) *2nd International Conference on Signal Processing and Communication, ICSPC 2019 - Proceedings*, art. no. 8976742, pp. 49-53.

**DOI:** 10.1109/ICSPC46172.2019.8976742

<sup>a</sup> Andhra University College of Engineering (A), Andhra University (A), Dept. of CS &E, Visakhapatnam, India

<sup>b</sup> Vignan Institute of Information Technology (A), Dept. of Information Technology, Visakhapatnam, India

**Abstract**

Intelligent Transport Systems (ITS) are high speed data communication system. In wireless communication, the signals transmitted through the channel are get effected by the physical characteristic and causes many different paths between the transmitter and the receiver. This always leads to phase shift, attenuation, delays, and distortion of the received signals arriving at the receiver end. In high speed digital data communication systems, equalizers are key components. Demodulating actual data from the noisy transmitted signal corrupted with interference among symbols, equalizers are the filters that can undo the channel noise. Adaptive equalizers utilized in vehicular communication to reduce the interference signal processing. The recent high speed digital communication systems need channel equalizers with a fast converging rate that cannot be met by conventional filters. In this paper we propose a novel linear MMNF equalization techniques using orthogonal frequency division multiplexing (OFDM). The simulation results are obtained using Python. We have conducted an experimental setup with real case measurements using the Raspberry Pi 3 B+ boards. The simulation results show that the equalizer at the receivers is good for noise free channel and is successful in removing ISI when compared to baseline model (standardized one). © 2019 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 6) Suvarnam, B., Viswanadha Sarma, C.H.

**Combination of CNN-GRU Model to Recognize Characters of a License Plate number without Segmentation**

(2019) *2019 5th International Conference on Advanced Computing and Communication Systems, ICACCS 2019*, art. no. 8728509, pp. 317-322.

**DOI:** 10.1109/ICACCS.2019.8728509

Department of Computer Science Engineering, Vignan Institute of Information Technology, Visakhapatnam, India

**Abstract**

Recognition is a genre of manipulation of digitized image automation for discovering the number plate details from a given image. Due to various factors, it is difficult to achieve great recognition results for the license plate. In general, human beings can easily read characters in license plate, but the machine cannot do until it is trained to do so. Now a day's vehicles are increasing day by day, to note down every vehicle plate number manually is difficult. To avoid that, optical character recognition (OCR) technology is used which extracts the license plate directly. In this paper, CNN (convolution neural network) -GRU (gated recurrent unit) model is developed. CNN is used for feature extraction and GRU is used for sequencing without using any segmentation methods. Finally, the character is recognized by utilizing a model design which is prepared on the dataset by GRU unit. A deep learning technique increases performance than traditional approaches like template matching. The testing precision of the proposed framework is 100% and training accuracy is 90%. © 2019 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 7) Vani, S.<sup>a</sup>, Madhusudhana Rao, T.V.<sup>a</sup>, Kannam Naidu, C.<sup>b</sup>



**Comparative Analysis on variants of Neural Networks: An Experimental Study**

(2019) *2019 5th International Conference on Advanced Computing and Communication Systems, ICACCS 2019*, art. no. 8728327, pp. 429-434.

**DOI:** 10.1109/ICACCS.2019.8728327

<sup>a</sup> Department of Computer Science Engineering, Vignan's Institute of Information Technology, Visakhapatnam, India

<sup>b</sup> Department of Civil Engineering, Vignan's Institute of Information Technology, Visakhapatnam, India

**Abstract**

Neural Networks, with their remarkable capacity to get significance from convoluted information can be utilized to remove patterns that are too composite to be in any way seen by humans. A prepared neural network can be thought of as a specialist in the classification of data which is given to analyze. There are different kinds of Neural Networks like Artificial Neural Network (ANN), Feedforward Neural Network, Recurrent Neural Network(RNN), Recursive Recurrent Neural Network (RRNN), Convolutional Neural Network(CNN), Modular Neural Network (MNN), Restricted Boltzmann Machine (RBM) etc. In this paper, we have discussed the performance of ANN, CNN, RNN, and RBM where CNN has outplayed the remaining with accuracy of 97.81%. © 2019 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

8) Pudi, S., Kishore, P.S.V., Lakshmi Vasamsetti, V.

**A Study on Power Sharing between Parallel Inverters in Micro grid under Mismatched Feeder Impedances**

(2019) *Proceedings of 2019 3rd IEEE International Conference on Electrical, Computer and Communication Technologies, ICECCT 2019*, art. no. 8869443, .

**DOI:** 10.1109/ICECCT.2019.8869443

Dept. of EEE, Vignan's Institute of Information Technology, Visakhapatnam, India

**Abstract**

In a micro grid with multiple DGs, the system experience the issue of active and reactive power sharing between the inverters. In this context, this paper presents the implementation of droop control method to equally share the active and reactive power in a micro grid with inverters operating in parallel. Further this paper also addresses the issues pertaining to the feeder impedance mismatch effecting the sharing of P and Q. To realize its operation the system is designed in PSCAD software. Further this paper also addresses a future scope for a possible solution. © 2019 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

9) Shravani, C.<sup>a</sup>, Balaji, N.<sup>b</sup>

**Feature Extraction and Matching using Gabor wavelets and Hessian detector**

(2019) *Proceedings of the 4th International Conference on Devices, Circuits and Systems, ICDCS 2018*, art. no. 8605177, pp. 297-300.

**DOI:** 10.1109/ICDCSyst.2018.8605177

<sup>a</sup> ECE Dept., Vignan's Institute of Information Technology, Visakhapatnam, AP, India

<sup>b</sup> JNTUK-UCEN, ECE Dept, Narsaraopet, Guntur, AP, India

**Abstract**

The research work involves the use of two dimensional Gabor wavelets in image processing. The key idea is to utilize a Gabor wavelet as a feature extractor. By using Gabor wavelets the image is reconstructed and required features are only represented. The corners of the input image are obtained and are matched to that of the rotated image of the input. A powerful feature extractor Hessian interest point detector is compared to detectors like Derivative of Gaussian function. Most of research applications like navigation, tracking, optical flow demand perfect feature extraction and matching though

the image is rotated. In the present work while capturing the image the camera is calibrated at an angle of 25 °. It is observed that the features can be perfectly extracted even after the rotation of the images. A real-time system can be developed by implementing the proposed approach on a SoC and hence the area, power and delay can be optimized © 2018 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

10) Sharma, S.K., Rao, M.S., Rao, L.P.C., Chaitanya, P.

**Integrated Cryptography for Internet of Things Using TBF Approach**

(2019) *Advances in Intelligent Systems and Computing*, 882, pp. 41-52.

**DOI:** 10.1007/978-981-13-5953-8\_4

Department of MCA, Vignan Institute of Information Technology, Visakhapatnam, 530049, India

**Abstract**

In current trends, Internet-based portable system is on the huge demand, and in coming future, it will be the most demanded technology among the smart society. It is very difficult to say that entire world will use the smart technology but majority of the developed and developing countries will base on smart work, using smart technology. The people can control their smart devices from remote location and can be causation free with security issues, which is associated with their valuables and other belongings. But all these are not so easy to implement practically to solve security pitfall and other issues to maintain reliable usage of smart devices. Here, in our proposed system, we are providing data security on data layer by using the concept of excessive cryptography and implementing the integrated approach of two cryptography techniques, i.e. TBF-transposition and blowfish cryptography techniques which can make powerful security barrier against the vulnerability and can stop the illegal usage of data. Here first of all, the plain text will go through transposition after that blowfish block cipher technique will be applied on consequential value from transposition outcome. This application will use in highly sensitive security purpose over the smart secure communication as we know that security issues are major challenges among smart devices where the data is more sensitive, and if it will go to wrong hands, there will be loss of human life in some cases. Finally, our work will contribute to integrate the crypto techniques for maintaining more security without breach of services. © 2019, Springer Nature Singapore Pte Ltd.

**Publisher:** Springer Verlag

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

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**Book Chapters**

## Documents

Veeramanickam, M.R.M.<sup>a b</sup>, Mohana Sundaram, N.<sup>a</sup>, Raja, L.<sup>c</sup>, Kale, S.A.<sup>d</sup>, Mithapalli, U.P.<sup>e</sup>

**'i-Campus': Internet of Things Based Learning Technologies for E-Learning**

(2019) *Lecture Notes on Data Engineering and Communications Technologies*, 26, pp. 1225-1232.

**DOI:** 10.1007/978-3-030-03146-6\_143

<sup>a</sup> Department of Computer Science Engineering, Karpagam Academy of Higher Education, (Deemed to be University), Coimbatore, India

<sup>b</sup> Department of Computer Science Engineering, Vignan's Institute of Information Technology(A), Duvvada, Visakhapatnam, India

<sup>c</sup> Karpagam Institute of Technology, Coimbatore, India

<sup>d</sup> Trinity College of Engineering and Research, Pune, India

<sup>e</sup> MIT Academy of Engineering, Pune, India

**Abstract**

E-learning application is growing rapidly to adopt on every learning platform. I-campus is about the modern campus with IoT infrastructure set up for learning environments. Classroom Notes in an effectual way of making use of IoT technology with E-learning platform. The learning system is built for the benefit of the students with a smart system for handwritten notes sharing. The problems, objectives are to create a medium which easily shares notes through the platform. Applications which can collect notes from classroom teaching and is used for sharing through the Internet of Things-enabled, medium for students accessing within the network limit. This helps to figure out limitation issues and improving individual's personalization, learning profile and outcomes of learning platform. © 2019, Springer Nature Switzerland AG.

**Publisher:** Springer Science and Business Media Deutschland GmbH

**Document Type:** Book Chapter

**Publication Stage:** Final

**Source:** Scopus



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## Research Publications- 2020

*Source: Scopus database*



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Articles

## Documents

- 1) Sivaiah, P.<sup>a</sup>, Singh M, M.<sup>a</sup>, Venkatesu, S.<sup>b</sup>, Yoganjaneyulu, G.<sup>c</sup>

**Investigation on turning process performance using hybrid-textured tools under dry and conventional cooling environment**

(2020) *Materials and Manufacturing Processes*, 35 (16), pp. 1852-1859.

**DOI:** 10.1080/10426914.2020.1813893

<sup>a</sup> Department of Mechanical Engineering, Madanapalle Institute of Technology Science, Madanapalle, Andhra Pradesh, India

<sup>b</sup> Department of Mechanical Engineering, Sree Vidyanikethan Engineering College, Tirupathi, Andhra Pradesh, India

<sup>c</sup> Department of Mechanical Engineering, Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh, India

**Abstract**

In the context of the surface texture of the tool, turning process performance is sensitively affected by the surface texture geometry, design, and working environment. Therefore, present work focused on the fabrication of new texture design tools (an amalgamation of linear microgrooves and circular pit holes) and machinability evaluation of so developed tools in turning of AISI 304 material under dry and conventional cutting environment, respectively. Machinability measures considered in the work are cutting zone temperature (T), average surface roughness (Ra), and tool wear (Vb). Results indicated that the machinability of AISI 304 was significantly improved with the hybrid tools under conventional cooling compared to dry cutting conditions, respectively. Further, Scanning Electron Microscope (SEM) analysis revealed that adhesion wear is identified as the major tool wear mechanism in hybrid tools under both cutting environments. Furthermore, observed few surface defects in machined samples under conventional cooling conditions, respectively. © 2020 Taylor & Francis.

**Publisher:** Bellwether Publishing, Ltd.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 2) Shabana<sup>a</sup>, Syed, K.<sup>b</sup>, Jajimoggala, S.<sup>a</sup>, Lakshmi, V.V.K.<sup>a</sup>

**"Multi objective optimization of the tribological responses of cermet and alloy based blended coatings using response surface methodology coupled with principal component analysis"**

(2020) *Surfaces and Interfaces*, 21, art. no. 100655, .

**DOI:** 10.1016/j.surfin.2020.100655

<sup>a</sup> Assistant Professor, Department of Mechanical Engineering, GIT, GITAM University, Visakhapatnam, India

<sup>b</sup> Professor, Department of Mechanical Engineering, Vignan's Institute of Information Technology, Visakhapatnam, India

**Abstract**

The objective of the present work is focused towards the reduction of wear in industrial applications. This can be overcome by applying layers of the protective coatings on the surface of the substrate, thereby improving surface properties. Here in the present work three powders WC-12%Co, NiCrBSi, Cr3C2-25wt%NiCr are taken, from which three types of blended powders are prepared taking in proper wt% by means of mechanical blending. The powders prepared are (30wt%WC[sbnd]Co12+70wt%NiCrBSi), (30wt%WC[sbnd]Co12+70wt%Cr3C2[sbnd]NiCr25) and (30wt%WC[sbnd]Co12+35wt%NiCrBSi+35wt%Cr3C2[sbnd]NiCr25). These powders are sprayed using High Velocity Oxy Fuel (HVOF) process on to the substrate. The coatings are tested for mechanical and tribological properties. From the results found, the blend of (30wt%WC[sbnd]Co12+70wt%NiCrBSi) showed good wear resistance and NiCrBSi as minimum Coefficient of Friction. Multiobjective optimization was done and the blend of WC[sbnd]Co and NiCrBSi was found to exhibit superior results at high temperature (3500C), high load (30 N) and for the distance of (15,000 m). © 2020 Elsevier B.V.



**Publisher:** Elsevier B.V.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 3) Alla, S.K.<sup>a b</sup>, Meena, S.S.<sup>c</sup>, Gupta, N.<sup>d</sup>, Mandal, R.K.<sup>a</sup>, Prasad, N.K.<sup>a</sup>

**Ferromagnetic Bismuth-Substituted CeO<sub>2</sub> Nanostructures and Prevalence of Antiferromagnetic Clusters**

(2020) *Journal of Superconductivity and Novel Magnetism*, 33 (12), pp. 3941-3947.

**DOI:** 10.1007/s10948-020-05658-0

<sup>a</sup> Department of Metallurgical Engineering, Indian Institute of Technology (BHU), Varanasi, 221005, India

<sup>b</sup> Department of Physics, Vignan's Institute of Information Technology, Visakhapatnam, 530049, India

<sup>c</sup> Solid State Physics Division, Bhabha Atomic Research Centre, Mumbai, 400085, India

<sup>d</sup> Technical Physics Division, Bhabha Atomic Research Centre, Mumbai, 400085, India

**Abstract**

Bismuth-substituted CeO<sub>2</sub> (Bi<sub>0.05</sub>Ce<sub>0.95</sub>O<sub>2</sub>) nanostructured material have displayed room temperature ferromagnetic behavior. The substitution of Ce ions with Bi<sup>3+</sup> ions decreased the saturation magnetization (MS) value of CeO<sub>2</sub>. UV-Vis and photoluminescence spectroscopic analyses revealed the occurrence of defect states i.e. surface oxygen vacancies in the sample, which facilitated ferromagnetic interactions in the Bi-substituted CeO<sub>2</sub> nanostructures. Further, the clusters in the sample could provide antiferromagnetic interaction amongst ions, which reduced the MS value of CeO<sub>2</sub>. The clusters in the annealed sample was substantiated from its ZFC/FC curve. X-ray photoelectron spectroscopy analysis revealed the presence of Bi<sup>3+</sup>, Ce<sup>3+</sup>, and Ce<sup>4+</sup> ions in the sample. High-resolution transmission electron microscopy (HRTEM) images suggested the spherical and rod-shaped morphology for the particles. © 2020, Springer Science+Business Media, LLC, part of Springer Nature.

**Publisher:** Springer

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 4) Lydia, E.L.<sup>a</sup>, Moses, G.J.<sup>b</sup>, Varadarajan, V.<sup>c</sup>, Nonyelu, F.<sup>d</sup>, Maseleno, A.<sup>e</sup>, Perumal, E.<sup>f</sup>, Shankar, K.<sup>f</sup>

**CLUSTERING AND INDEXING OF MULTIPLE DOCUMENTS USING FEATURE EXTRACTION THROUGH APACHE HADOOP ON BIG DATA**

(2020) *Malaysian Journal of Computer Science*, 2020 (Special Issue 1), pp. 108-123.

**DOI:** 10.22452/mjcs.sp2020no1.8

<sup>a</sup> Professor and Big Data Consultant, Computer Science and Engineering, Vignan's Institute of Information Technology, India

<sup>b</sup> Professor, Computer Science and Engineering, Raghu Engineering College (Autonomous), Visakhapatnam, Andhra Pradesh, India

<sup>c</sup> School of Computer Science and Engineering, The University of New South Wales, Australia

<sup>d</sup> Chief Executive, Briteyellow Ltd, United Kingdom

<sup>e</sup> STMIK Pringsewu, Lampung, Indonesia

<sup>f</sup> Department of Computer Applications, Alagappa University, Karaikudi, India

**Abstract**

Bigdata is a challenging field in data processing since the information is retrieved from various search engines through internet. A number of large organizations, that use document clustering, fails in arranging the documents sequentially in their machines. Across the globe, advanced technology has contributed to the high speed internet access. But the consequences of useful yet unorganized information in machine files seem to be confused in the retrieval process. Manual ordering of files has its own complications. In this paper, application software like Apache Lucene and Hadoop have taken a lead towards text mining for indexing and parallel implementation of document clustering. In organizations, it identifies the structure of the text data in computer files and its arrangement from files to folders, folders to subfolders, and to higher folders. A deeper analysis of document clustering was performed by considering various efficient algorithms like LSI, SVD and was compared with the newly proposed updated model of Non-Negative Matrix Factorization. The parallel implementation of hadoop developed automatic clusters for similar documents. MapReduce framework enforced its approach

using K-means algorithm for all the incoming documents. The final clusters were automatically organized in folders using Apache Lucene in machines. This model was tested by considering the dataset of Newsgroup20 text documents. Thus this paper determines the implementation of large scale documents using parallel performance of MapReduce and Lucenethat generate automatic arrangement of documents, which reduces the computational time and improves the quick retrieval of documents in any scenario. © 2020 All rights reserved.

**Publisher:** Faculty of Computer Science and Information Technology

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 5) Sai, K.V.<sup>a</sup>, Rao, K.M.<sup>b</sup>, Rajasekhar, E.<sup>c</sup>, Rao, D.R.<sup>a</sup>, Seetharaman, D.<sup>a</sup>, Kamiseti, V.<sup>a</sup>

**Precision Measurements of Internal Conversion Coefficients of Low Energy Transitions in 169Tm for Efficiency Calibration of Electron Detectors**

(2020) *Physics of Atomic Nuclei*, 83 (6), pp. 796-801.

**DOI:** 10.1134/S1063778820660084

<sup>a</sup> Laboratories for Nuclear Research, Department of Physics, Sri Sathya Sai Institute of Higher Learning, Prasanthi Nilayam, India

<sup>b</sup> Vignan's Institute of Information Technology, Visakhapatnam, India

<sup>c</sup> Department of Physics, Rayalaseema University, Kurnool, India

**Abstract**

Abstract: The 32.018 d beta decay of 169Yb is studied with a high resolution precisely calibrated 8\$K\$ PC based Multi-Channel Analyzer coupled HPGe gamma spectrometer system and liquid nitrogen cooled Si(Li) detector coupled to a well calibrated Mini-Orange magnetic spectrometer. Precise energies and relative intensities of gamma transitions and conversion electron intensities of gamma transitions have been determined for the first time with better accuracy. The experimental internal conversion coefficients of the gamma transitions in 169Tm have been determined using Normalized Peak to Gamma method and compared with the theoretical values adopted by Nuclear Data Sheets to assign multipolarities of all the transitions. The precise internal conversion electron intensities of the low energy transitions can be used as standards for calibration purposes of electron detectors and spectrometers. © 2020, Pleiades Publishing, Ltd.

**Publisher:** Pleiades journals

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 6) Muthuchamy, A.<sup>a</sup>, Boggupalli, L.P.<sup>a</sup>, Yadav, D.R.<sup>a</sup>, Naveen Kumar, N.<sup>b</sup>, Agrawal, D.K.<sup>c</sup>, Raja Annamalai, A.<sup>d</sup>

**Particulate-Reinforced Tungsten Heavy Alloy/Yttria-Stabilized Zirconia Composites Sintered Through Spark Plasma Sintering**

(2020) *Arabian Journal for Science and Engineering*, 45 (11), pp. 9283-9291.

**DOI:** 10.1007/s13369-020-04732-y

<sup>a</sup> Department of Manufacturing Engineering, School of Mechanical Engineering, VIT Vellore, Vellore, Tamil Nadu 632 014, India

<sup>b</sup> Department of Mechanical Engineering, Vignan's Institute of Information Technology (Autonomous), Besides VSEZ, Duvvada, Vadlapudi Post, Visakhapatnam, 530049, India

<sup>c</sup> Materials Research Institute, The Pennsylvania State University, University Park, PA 16802, United States

<sup>d</sup> Centre for Innovative Manufacturing Research, VIT Vellore, Vellore, Tamil Nadu 632 014, India

**Abstract**

The current work investigates the mechanical properties of W–Ni–Fe tungsten heavy alloy (WHA) composites reinforced with 0.25, 0.5, 0.75 and 1.0 wt% of yttria-stabilized zirconia (YSZ). The composites were fabricated through spark plasma sintering (SPS) technique. Detailed microstructural characterization of the sintered samples, including contiguity, grain size and matrix volume fraction, was carried out. It was found that the W–W contiguity was decreasing with increasing amount of YSZ. Hardness and yield strength of the sintered samples were found to be decreasing with the increasing amount of YSZ. The WHA with 0.25 wt% YSZ exhibited the highest mechanical properties among all compositions chosen for this study.

Fractography revealed W–W intergranular fracture indicating a brittle mode failure. © 2020, King Fahd University of Petroleum & Minerals.

**Publisher:** Springer Science and Business Media Deutschland GmbH

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 7) Partha Saradhi, G.<sup>a</sup>, Mukund, D.<sup>b</sup>

**Reduction of carbon emissions and planning of signal system for smart corridor in Vishakhapatnam suitable for travel time reduction by using PTV visum software**

(2020) *Journal of Green Engineering*, 10 (10), pp. 9291-9305.

<sup>a</sup> Department of Civil Engineering, GITAM (Deemed to be University), Visakhapatnam, Andhra Pradesh, India

<sup>b</sup> Department of Civil Engineering, Vignan's Institute of Information Technology, Duvvada, Visakhapatnam, Andhra Pradesh, India

**Abstract**

For the smart city of Vishakhapatnam, the effective transport corridor has been planned for NAD junction to car-shed junction. Detailed signal system for planning is necessary for reduction of travel time and avoidance of accidents. This has been done by the selection of intersection and using stimulated software. The results of analysis have been affective reduction of travel time with and without infrastructure. © 2020 Alpha Publishers. All rights reserved.

**Publisher:** Alpha Publishers

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 8) Bhattacharyya, D.<sup>a</sup>, Mandhala, V.N.<sup>a</sup>, Dinesh Reddy, B.<sup>b</sup>, Rao, N.T.<sup>b</sup>

**An intelligent traffic light controller (TLC) system using iot model**

(2020) *Journal of Green Engineering*, 10 (10), pp. 7457-7470.

<sup>a</sup> Department of Computer Science and Engineering, Koneru Lakshmaiah Education Foundation, Guntur, Vaddeswaram, AP, India

<sup>b</sup> Department of Computer Science and Engineering, Vignan's Institute of Information Technology, Visakhapatnam, AP, India

**Abstract**

Traffic problems in cities and developing cities are proliferating. Several methods are being followed to reduce the congestion on city roads. In the current article, an attempt has been made to identify the number of vehicles on city roads and based on the number of vehicles on city roads, the traffic lights are controlled automatically such that to reduce the congestion on city roads. Identifying vehicles on different lanes at traffic signals and trying to control the signals based on the number of vehicles. The current model was developed and implemented on the platform of Python, and the testing of the current model was done with four cases. The results observed for the four test cases are excellent and encouraging. The exact method and it's functioning and the results are displayed in the results and discussions sections in detail. © 2020 Alpha Publishers. All rights reserved.

**Publisher:** Alpha Publishers

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 9) Sampath Dakshina Murthy, A.<sup>a b</sup>, Karthikeyan, T.<sup>c</sup>, Omkar Lakshmi Jagan, B.<sup>d</sup>

**Clinical model machine learning for gait observation cardiovascular disease diagnosis**

(2020) *International Journal of Pharmaceutical Research*, 12 (4), pp. 3373-3378.

**DOI:** 10.31838/ijpr/2020.12.04.460

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**Abstract**

Heart replacement and nearly 80% of the significant complications or deaths of elderly patients are associated with medical treatment. The potential for predicting mortality and high morbidity in older patients considering cardiac surgery would be improved by conventional risk models if frailty is included in their gait frequency estimation. The current priorities for cardiovascular diagnosis are MRI scans, ultra scans and ECG device examination. Ultrasound imaging is used in this clinical research to classify cardiovascular problems. Specialized methodologies have been used in feature extraction and classification in this segmentation. This research is specifically suited to heart disorders for scientists and physicians. Finally, the performance measurement, i.e. Know, F1, real effectiveness, strong prices. The outputs challenge existing models and improve cardiac diagnostic accuracy. © 2020, Advanced Scientific Research. All rights reserved.

**Publisher:** Advanced Scientific Research

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 10) Bhattacharyya, D.<sup>a</sup>, Doppala, B.P.<sup>b</sup>, Thirupathi Rao, N.<sup>b</sup>

**Prediction and forecasting of persistent kidney problems using machine learning algorithms**

(2020) *International Journal of Current Research and Review*, 12 (20), pp. 134-139.

**DOI:** 10.31782/IJCRR.2020.122031

<sup>a</sup> Department of Computer Science and Engineering, K L Deemed to be University, KLEF, Guntur, 522502, India

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**Abstract**

Persistent Kidney Illness is an extremely hazardous health problem that has been spreading in addition to expanding due to diversification in lifestyle such as food routines, modifications in the environment, and so on. Aim and Objective: The field of health science generates substantial amounts of information from Electronic Wellness Records. According to the wellness data of India, 63538 cases have been registered on persistent kidney condition. The average age of male and female prone to renal problems occurs within the variety of Mid Forty and Seventy year age groups. Conclusion: This paper's original idea is to make a comparative study on various classification techniques and their performance. © IJCRR.

**Publisher:** Radiance Research Academy

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 11) Mandhala, V.N.<sup>a</sup>, Bhattacharyya, D.<sup>a</sup>, Vamsi, B.<sup>b</sup>, Thirupathi Rao, N.<sup>b</sup>

**Object detection using machine learning for visually impaired people**

(2020) *International Journal of Current Research and Review*, 12 (20), pp. 157-167.

**DOI:** 10.31782/IJCRR.2020.122032

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<sup>b</sup> Department of Computer Science and Engineering, Vignan's Institute of Information Technology (A), Vishakhapatnam, AP, India

**Abstract**

In this challenging evolution, the primary task in detecting the objects requires a computer vision that deals over indoor and outdoor classes. Over the past decades, this zeal requires more attentiveness. Previous implementation techniques involve in object detection with a strategy of single labelling. Aim and Objectives: In this regard, a multi-label approach using machine learning and vision technologies, and accurate response can be acknowledged based on its accuracy and effectiveness. In the proposed work, we solve the existing system problem by using classification/clustering techniques that are used to reduce the recognize time of multi objects in less time with best time complexities. Model: The model used to assist the visually impaired people can independently recognize objects which are near to them. The reverence, combined with the study, confounded the inception of these machine learning algorithms for visually impaired persons in assisting the accurate navigation, including indoor and outdoor circumstances. Conclusion: In this connection, an indoor and outdoor architecture on Retina Net is implemented for its detection techniques, and also neural network technologies support this framework. Based on the effectiveness and implementation time, ResNet and FPN act as a crucial module for its accuracy. © 2020, Radiance Research Academy. All rights reserved.

**Publisher:** Radiance Research Academy

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 12) Mandhala, V.N.<sup>a</sup>, Bhattacharyya, D.<sup>a</sup>, Sushma, D.<sup>b</sup>

**Identification of parasite presence on thin blood splotch images**

(2020) *International Journal of Current Research and Review*, 12 (19), pp. 2-8.

**DOI:** 10.31782/IJCRR.2020.121928

<sup>a</sup> Department of Computer Science and Engineering, Koneru Lakshmaiah Education Foundation, Guntur, Vaddeswaram, AP, India

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**Abstract**

Parasite is a bacterium that lives in a separate organism that functions as a host known as plasmodium. The parasite is vulner-able to malaria, dengue, typhoid diseases, etc. The presence of the parasite in blood smears can often lead to human death for some times. So, detecting and recognizing the parasite in blood splotch images at the early stages is very important to save human life. Aim and Objective: The primary consideration in this article is to detect the parasite which occurs in red blood cells through blood splotch images in early stages in less time using a new image processing method. Method: The method which is followed identifies the presence of parasite on blood smear images, was done in several steps. The first step of the method is to collect the input image from a laboratory taken through an electronic microscope. Then the image is further sent by converting the input image to the grayscale image using the standard method. Once the grayscale is obtained, the output image is further converted to the monochrome image. The pixel values of the image consist of only binary values using the "Otsu Threshold form." Then this monochrome image is converted to a matrix model and printed with the binary values. Conclusion: The presence of parasites on the images will be displayed with the binary values by either one or zero on the output matrix model. Suppose the entire image is displayed as all zeros, In that case, it can be concluded to no parasite presence, and if any one's presence on the matrix model, then it can be observed that there is a presence of parasite on the blood smear blotch images. © 2020, Radiance Research Academy. All rights reserved.

**Publisher:** Radiance Research Academy

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 13) TVSPV, S.G.<sup>a</sup>, Gangu, K.K.<sup>a b</sup>, Maddila, S.<sup>b c</sup>, Jonnalagadda, S.B.<sup>b</sup>

**Excellent catalytic activity of ethylenediamine stabilised oxalate ligated aluminium coordination complex for synthesis of novel benzoquinolines**

(2020) *Polyhedron*, 189, art. no. 114734, .

**DOI:** 10.1016/j.poly.2020.114734

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<sup>b</sup> School of Chemistry & Physics, University of KwaZulu-Natal, Westville Campus, Private Bag X54001, Durban, 4000,

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<sup>c</sup> Department of Chemistry, GITAM University, Visakhapatnam, 530045, India

### Abstract

Two-dimensional supramolecular structure of oxalate ligated Al(III) coordination complex,  $(C_2H_{10}N_2)_2[Al_2(\mu-O_2)(oxalate)_4] \cdot 2H_2O$  (Al-Ox) was synthesised hydrothermally and determined the structural features with single-crystal X-ray diffraction studies. Unique oxo bridged dinuclear Al(III) clusters were established and each Al(III) atom bonded with two units of oxalate ligand. In the dinuclear Al(III) structure, two Al(III) atoms were separated with a bond distance of 2.8702 Å. Unsaturated metal centres creation upon activation acts as Lewis acid sites and ethylenediamine with a strong basic character in the structure remarkably facilitate an efficient and economic strategy for better organic transformations. The Lewis acid-base character catalytic efficacy of the complex is explored in the tandem multi-component synthesis of benzoquinoline-2-carbonitrile moieties. The synergy between the exceptional Lewis acidic and basic properties of Al-Ox contributed to its excellent catalytic activity in the generation of five new benzoquinoline-2-carbonitriles in impressive yields (92–96%) in short reaction time (ca. 15 min) in a simple one-pot protocol, in ethanol. Recyclability with consistent activity (>5 times) is the added advantage. © 2020 Elsevier Ltd

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- 14) Gangu, K.K.<sup>a, b</sup>, Pothala, V.<sup>a</sup>, TVSPV, S.G.<sup>a</sup>, Maddila, S.<sup>b, c</sup>, Jonnalagadda, S.B.<sup>b</sup>

### A study on the catalytic behaviour of Cd(II) and Sm(III) coordination complexes towards the four-component synthesis of quinoline-3-carboxylates

(2020) *Inorganic Chemistry Communications*, 119, art. no. 108084, .

**DOI:** 10.1016/j.inoche.2020.108084

<sup>a</sup> Vignan's Institute of Information Technology, Duvvada, Visakhapatnam, 530049, India

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### Abstract

We report the synthesis two 3-dimensional coordination complexes namely,  $[Cd(2,5-Pydc)_2(H_2O)_2] \cdot H_2O$  (1)  $[Sm(2,5-Pydc)(NO_3)(H_2O)] \cdot (H_2O)$  (2) using 2,5-Pyridine dicarboxylic acid (2,5-Pydc) as ligand by simple hydrothermal method. Nitrogen and oxygen atoms of 2,5-Pydc provided more scope for the coordination of Cd(II) and Sm(III) ions to the ligand in both the complexes with high dimensionality. The 3D networks of complexes 1 and 2 possessed attractive structures of supramolecular assemblies with good rigidity and high thermal stability. The coordinatively unsaturated metal sites in both 1 and 2 upon activation process generate a Lewis acidic environment. The Lewis acidic nature of complexes 1 and 2 was promptly utilised in the synthesis of novel quinoline-3-carboxylate moieties from the four-component single-pot fusion. Both 1 and 2 showed impressive catalytic activity in the formation of the products in high yield (92–96%) and in a short interval of time (15–25 min). The complexes 1 and 2 catalysed the Knoevenagel condensation between aldehyde and active methylene group, leading to the generation of the reaction intermediate and target products with high selectivity. Optimisation studies confirmed that compound 2 showed superior catalytic activity over 1 due to the strong Lewis-acidic character of Sm(II). The method has potential as a low-cost, high-performance, green protocol for futuristic catalytic applications. © 2020 Elsevier B.V.

**Publisher:** Elsevier B.V.

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**Publication Stage:** Final

**Source:** Scopus

- 15) Varadala, A.B.<sup>a</sup>, Gurugubelli, S.N.<sup>b</sup>, Bandaru, S.<sup>c</sup>

### Severe plastic deformation of AA 5083 and copper bimetallic metal

(2020) *SN Applied Sciences*, 2 (9), art. no. 1562, .

**DOI:** 10.1007/s42452-020-03384-9

<sup>a</sup> Department of Mechanical Engg., Vignan's Insti. of Engg. for Women, Visakhapatnam, 530046, India

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### Abstract

The purpose of the present study is to investigate the effect of Cu casing and wall thickness of the drilled copper bars on uniform distribution of imposed strain in terms of structural homogeneity and distribution of micro-hardness in the severely deformed AA 5083 after equal channel angular extrusion (ECAE). In this study, AA 5083 cylindrical inserts of 6 mm, 8 mm and 10 mm diameter with 100 mm length are tightly inserted in the 16 mm square copper bars having the respective diameter holes. The square cross sectioned AA 5083 billets of 16 mm × 16 mm and 100 mm length are also considered as feedstock. The longitudinal surfaces of the bimetallic metals are polished and annealed at 530 °C for 1 h and then processed by ECAE up to four passes in route A (same sense after every pass without any rotation) at room temperature using a die with square cross-sectioned channels having channel intersection angle ( $\phi$ ) 105° and outer corner angle ( $\Psi$ ) 30°. The initial grain size of 60  $\mu\text{m}$  has been greatly refined and the ultrafine grains of the sizes in the range of 400–700 nm are formed in the extruded AA 5083 inserts after the four passes. The microhardness of extruded AA 5083 significantly increased from 69 to 134 VHN, 132, 176 and 157 respectively for the square billets without Cu casing and cylindrical inserts with the diameters of 6, 8 and 10 mm covered with Cu casing after the four passes. The variations in the microhardness measurements at different regions on the sectioned surfaces are also investigated in this study. The requirement of pressing force is very significantly reduced by using copper casing which is having more ductile nature and the frictional forces between the copper and steel die are very less as compared to the Aluminium and steel. The chances of formation of dead metal zone are avoided by filling the corner gap by copper metal during the ECAE process. The uniform distribution of strain imposed on the severely deformed billets develops the homogeneous ultrafine grain structure and significantly improves the micro-hardness of the processed material. © 2020, Springer Nature Switzerland AG.

**Publisher:** Springer Nature

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 16) Bhattacharyya, D.<sup>a</sup>, Thirupathi Rao, N.<sup>b</sup>, Meeravali, S.K.<sup>c</sup>, Srinivas Rao, K.<sup>d</sup>

### Performance of a parallel communication network having non-homogeneous binomial bulk arrivals with phase type transmission for dynamic resource allocation

(2020) *Journal of Green Engineering*, 10 (9), pp. 7155-7177.

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<sup>b</sup> Department of CSE, Vignan's Institute of Information Technology (A), Visakhapatnam, AP, India

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<sup>d</sup> Department of Statistics, Andhra University, Visakhapatnam, AP, India

### Abstract

In the current article, a parallel communication network model in which three nodes are connected in a tandem fashion with binomial bulk arrivals developed. The messages arrived at the network are transformed into packets for forwarding transmission. After completing the transmission at first node, the packet may join buffer 2 or 3, parallel and connected to node 1 with specific probabilities. The inter transmission time of packets in each node follows the Poisson process. The transient behavior of the network is assessed by obtaining the unambiguous expression for various performance metrics of the network model, like utilizing buffers at nodes, the throughput of each node, delay at each node, and the total number of packets at each node, etc. It is observed that the current model can model the traffic under burstness and non-smooth conditions. The non-homogeneous bulk arrival process considered for the current model is compared with the homogeneous bulk arrival process. The comparative results had been given separately for a better understanding of the current model performance. © 2020 Alpha Publishers. All rights reserved.

**Publisher:** Alpha Publishers

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 17) Partha Saradhi, G.<sup>a b</sup>, Mukund, D.<sup>a</sup>

### Modern traffic enforcement and elimination of carbon emissions in intelligent corridors from nad junction to car shed junction at Visakhapatnam using PTV visum software

(2020) *Journal of Green Engineering*, 10 (9), pp. 5266-5282.

<sup>a</sup> Department of Civil Engineering, GITAM (Deemed to be University), Visakhapatnam, Andhra Pradesh, India

<sup>b</sup> Department of Civil Engineering, Vignan's Institute of Information Technology, Duvvada, Visakhapatnam, Andhra Pradesh, India

#### Abstract

Traffic management plays an important role in the day to day affairs of smart cities including Visakhapatnam. Parametric models and non-parametric models are available for such cases, Kalman filter also plays a significant role. For solving the problem of intersection parts of Vishakhapatnam specialized software has been closed to implement the traffic rules according to state of the standards. Improvement of traffic flow, reduction in jam and running time are the main objection of research. VISUM software has been selected due to its versatility and the implementation has been done it car shed unction. The results have been quite encouraging in improving and controlling parts of entry and exit. The estimated travel time for NAD to car- shed junction will be reduced from 72 min to 55 min for bus and 55 min to 40 min by car. © 2020 Alpha Publishers. All rights reserved.

**Publisher:** Alpha Publishers

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

18) Rao, L.V.V.G.<sup>a</sup>, Narayanan, S.<sup>b</sup>

**Optimal response of half car vehicle model with sky-hook damper using LQR with look ahead preview control**  
(2020) *Journal of the Brazilian Society of Mechanical Sciences and Engineering*, 42 (9), art. no. 471, .

**DOI:** 10.1007/s40430-020-02552-7

<sup>a</sup> Department of Mechanical Engineering, Vignan's Institute of Information Technology, Duvvada, Visakhapatnam, 530 049, India

<sup>b</sup> Department of Mechanical Engineering, Indian Institute of Information Technology, Design and Manufacturing, Kancheepuram, Chennai, 600 127, India

#### Abstract

This paper addresses the problem of determining the optimal parameters of a sky-hook damper type suspension in the control of the stationary random response of half car vehicle models traversing a rough road with constant velocity. The feedback control scheme is realized by approximating the sky-hook damper strategy, and the optimal parameters of the sky-hook damper are obtained by equating the sky-hook damper suspension force with that of a fully active suspension force using linear quadratic regulator with preview control (LQR with preview control). Results show that the overall performance of the sky-hook damper approximately 99% matches with performance of LQR with preview control (look ahead preview control) over a specified vehicle velocity range. © 2020, The Brazilian Society of Mechanical Sciences and Engineering.

**Publisher:** Springer

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

19) Kondaiah, P.<sup>a</sup>, Jagadeesh Chandra, S.V.<sup>b</sup>, Fortunato, E.<sup>d</sup>, Chel Jong, C.<sup>e</sup>, Mohan Rao, G.<sup>a</sup>, Koti Reddy, D.V.R.<sup>f</sup>, Uthanna, S.<sup>g</sup>

**Substrate temperature influenced ZrO<sub>2</sub> films for MOS devices**  
(2020) *Surface and Interface Analysis*, 52 (9), pp. 541-546.

**DOI:** 10.1002/sia.6775

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<sup>e</sup> School of Semiconductor and Chemical Engineering, Semiconductor Physics Research Center, Chonbuk National University, Jeonju, South Korea

<sup>f</sup> Department of Instrument Technology, Andhra University, Visakhapatnam, Andhra Pradesh, India

<sup>g</sup> Department of Physics, Sri Venkateswara University, Tirupati, India

### Abstract

The effect of substrate temperature on the direct current magnetron-sputtered zirconium oxide (ZrO<sub>2</sub>) dielectric films was investigated. Stoichiometric of the ZrO<sub>2</sub> thin films was obtained at an oxygen partial pressure of  $4.0 \times 10^{-2}$  Pa. X-ray diffraction studies revealed that the crystallite size in the layer was increased from 4.8 to 16.1 nm with increase of substrate temperature from 303 to 673 K. Metal-oxide-semiconductor devices were fabricated on ZrO<sub>2</sub>/Si stacks with Al gate electrode. The dielectric properties of ZrO<sub>2</sub> layer and interface quality at ZrO<sub>2</sub>/Si were significantly influenced by the substrate temperature. The dielectric constant increased from 15 to 25, and the leakage current density decreased from  $0.12 \times 10^{-7}$  to  $0.64 \times 10^{-9}$  A cm<sup>-2</sup> with the increase of substrate temperature from 303 to 673 K. © 2020 John Wiley & Sons, Ltd.

**Publisher:** John Wiley and Sons Ltd

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**Publication Stage:** Final

**Source:** Scopus

- 20) Gorle, S.<sup>a</sup>, Gangu, K.K.<sup>c</sup>, Maddila, S.<sup>a b</sup>, Jonnalagadda, S.B.<sup>b</sup>

**Synthesis and anticancer activity of novel pyrazolo[4',3':5,6]pyrano[2,3-d] pyrimidin-5(2H)-one derivatives**  
(2020) *Chemical Data Collections*, 28, art. no. 100471, .

**DOI:** 10.1016/j.cdc.2020.100471

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<sup>c</sup> Vignan's Institute of Information Technology (VIIT), Duvvada, Visakhapatnam, Andhra Pradesh 530049, India

### Abstract

A novel sequence of pyrazole connected pyrano[2,3-d]-pyrimidin-5(2H)-one derivatives (6a-j) were designed, prepared and screened for their cytotoxicity against four human cancer cell lines like MCF-7 (breast), HeLa (cervical), CaCo2 (colorectal) and HepG2 (liver) by MTT assay. Most of the tested molecules were exhibited good to excellent cytotoxicity against all tested cell lines when compared to the standard drug Doxorubicin. Amongst all the synthesized target compounds, the molecules (7e & 7d) exhibited the excellent anticancer activity against all the human MCF-7, HeLa, CaCo2 and HepG2 tumor cell lines, with the inhibitory concentration (IC<sub>50</sub>) values of 14, 14, 13, & 16 µg mL<sup>-1</sup> and 16, 14, 15 & 17 µg mL<sup>-1</sup>, respectively, while, molecules (7f & 7i) revealed good inhibitory activity against all screened cell lines with the IC<sub>50</sub> values of 22, 25 & 24 µg mL<sup>-1</sup> and 21, 20, 21, & 20 µg mL<sup>-1</sup>. All the novel target molecules were determined and characterized by various spectroscopic (1H NMR, 13C NMR and HR-MS) analysis. © 2020

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**Source:** Scopus

- 21) Devaraj, A.F.S.<sup>a</sup>, Elhoseny, M.<sup>b</sup>, Dhanasekaran, S.<sup>a</sup>, Lydia, E.L.<sup>c</sup>, Shankar, K.<sup>d</sup>

**Hybridization of firefly and Improved Multi-Objective Particle Swarm Optimization algorithm for energy efficient load balancing in Cloud Computing environments**  
(2020) *Journal of Parallel and Distributed Computing*, 142, pp. 36-45.

**DOI:** 10.1016/j.jpdc.2020.03.022

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**Abstract**

Load balancing, in Cloud Computing (CC) environment, is defined as the method of splitting workloads and computing properties. It enables the enterprises to manage workload demands or application demands by distributing the resources among computers, networks or servers. In this research article, a new load balancing algorithm is proposed as a hybrid of firefly and Improved Multi-Objective Particle Swarm Optimization (IMPSO) technique, abbreviated as FIMPSO. This technique deploys Firefly (FF) algorithm to minimize the search space where as the IMPSO technique is implemented to identify the enhanced response. The IMPSO algorithm works by selecting the global best (gbest) particle with a small distance of point to a line. With the application of minimum distance from a point to a line, the gbest particle candidates could be elected. The proposed FIMPSO algorithm achieved effective average load for making and enhanced the essential measures like proper resource usage and response time of the tasks. The simulation outcome showed that the proposed FIMPSO model exhibited an effective performance when compared with other methods. From the simulation outcome, it is understood that the FIMPSO algorithm yielded an effective result with the least average response time of 13.58ms, maximum CPU utilization of 98%, memory utilization of 93%, reliability of 67% and throughput of 72% along with a make span of 148, which was superior to all the other compared methods. © 2020 Elsevier Inc.

**Publisher:** Academic Press Inc.

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**Publication Stage:** Final

**Source:** Scopus

- 22) Ramisetty, U.M.<sup>a</sup>, Chennupati, S.K.<sup>b</sup>

**Optimization of number of base station antennas in downlink massive MIMO and analysis of imperfect channel state information by perfection factor**

(2020) *Engineering Science and Technology, an International Journal*, 23 (4), pp. 851-858.

**DOI:** 10.1016/j.jestch.2019.10.009

<sup>a</sup> Vignan's Institute of Information Technology, Visakhapatnam, India

<sup>b</sup> GITAM University, Visakhapatnam, India

**Abstract**

In the present days, there is a rapid growth of data rates in wireless communication but suffers from channel state errors due to imperfections in channel state information (CSI) which leads to a decrease in energy and spectral efficiency. In this paper, the perfection factor has been proposed to optimize the number of base station antennas in massive MIMO and also for the reduction of channel estimation errors in CSI. This perfection factor calculates the achievable sum-rate which in turn determines the ratio of the number of base station antennas with respect to the number of users and further critical reliability. As critical reliability decreases the transmitted power reduces and the number of base station antennas is decreased. Simulation is carried out Massive MIMO System and the degree of perfection, energy efficiency, spectral efficiency are been evaluated. The effectiveness of the proposed method is tested with a different number of base station antennas and the number of users and also on with the increase imperfection CSI. The results obtained are presented and analyzed. © 2019 Karabuk University

**Publisher:** Elsevier B.V.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 23) Le Nguyen, B.<sup>a</sup>, Lydia, E.L.<sup>b</sup>, Elhoseny, M.<sup>c</sup>, Pustokhina, I.V.<sup>d</sup>, Pustokhin, D.A.<sup>e</sup>, Selim, M.M.<sup>f</sup>, Nguyen, G.N.<sup>g</sup>, Shankar, K.<sup>h</sup>

**Privacy preserving blockchain technique to achieve secure and reliable sharing of IoT data**

(2020) *Computers, Materials and Continua*, 65 (1), pp. 87-107.

**DOI:** 10.32604/cmc.2020.011599

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### Abstract

In present digital era, an exponential increase in Internet of Things (IoT) devices poses several design issues for business concerning security and privacy. Earlier studies indicate that the blockchain technology is found to be a significant solution to resolve the challenges of data security exist in IoT. In this view, this paper presents a new privacy-preserving Secure Ant Colony optimization with Multi Kernel Support Vector Machine (ACOMKSVM) with Elliptical Curve cryptosystem (ECC) for secure and reliable IoT data sharing. This program uses blockchain to ensure protection and integrity of some data while it has the technology to create secure ACOMKSVM training algorithms in partial views of IoT data, collected from various data providers. Then, ECC is used to create effective and accurate privacy that protects ACOMKSVM secure learning process. In this study, the authors deployed blockchain technique to create a secure and reliable data exchange platform across multiple data providers, where IoT data is encrypted and recorded in a distributed ledger. The security analysis showed that the specific data ensures confidentiality of critical data from each data provider and protects the parameters of the ACOMKSVM model for data analysts. To examine the performance of the proposed method, it is tested against two benchmark dataset such as Breast Cancer Wisconsin Data Set (BCWD) and Heart Disease Data Set (HDD) from UCI AI repository. The simulation outcome indicated that the ACOMKSVM model has outperformed all the compared methods under several aspects. © 2020 Tech Science Press. All rights reserved.

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**Source:** Scopus

24) Yoganjaneyulu, G.<sup>a</sup>, C, R.<sup>b</sup>, Manikandan, N.<sup>c</sup>, Sathiy Narayanan, C.<sup>d</sup>

**Investigations on multi-sheets single point incremental forming of commercial pure titanium alloys**  
(2020) *Materials and Manufacturing Processes*, 35 (9), pp. 1002-1009.

**DOI:** 10.1080/10426914.2020.1753882

<sup>a</sup> Department of Mechanical Engineering, Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh, India

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<sup>c</sup> Micro machining research center, Department of Mechanical Engineering, Sree Vidyanikethan Engineering College (Autonomous), Tirupati, Andhra Pradesh, India

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### Abstract

The rate of production in single point incremental forming (SPIF) approach for the sheet metals is comparatively low when comparing to multiple sheet incremental forming process (MSSPIF). This increase in production rate comes with a trade-off of reduced formability in MSSPIF. The aspiration of the current paper is to analyze the formability, the strain distribution, and the void coalescence variables as per the strain triaxiality (Formula presented.) during the MSSPIF process of the available commercially pure (CP) titanium sheets. The forming limit diagrams (FLDs) and the strain distribution analysis have been carried out for multiple sheets of two, three, and four sheets bunch while they were formed together. The outcomes proved that the uppermost sheets achieved the higher limiting principal true strain and the limiting values of the principal true strain of bottom sheets decreased in accordance with the position of the sheet and the same was reported in FLDs. The void coalescence in the fractured specimen exhibited an enhanced fracture resistance for CP sheets of titanium. The size of void ( $\mu\text{m}$ ), thickness of ligament (LT), void (L/W) ratio, d-factor, strain triaxiality, and other void coalescence parameters also have been compared when two, three, and four sheets were formed together during MSSPIF process. © 2020, © 2020 Taylor & Francis.

**Publisher:** Taylor and Francis Inc.

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**Publication Stage:** Final

**Source:** Scopus

- 25) Raju, K.<sup>a</sup>, Murthy, A.S.D.<sup>b</sup>, Rao, B.C.<sup>c</sup>, Bhargavi, S.<sup>d</sup>, Rao, G.J.<sup>e</sup>, Madhu, K.<sup>f</sup>, Saikumar, K.<sup>g</sup>

**A robust and accurate video watermarking system based on svd hybridation for performance assessment**  
(2020) *International Journal of Engineering Trends and Technology*, 68 (7), pp. 19-24.

**DOI:** 10.14445/22315381/IJETT-V68I7P204S

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#### **Abstract**

In modern days, multimedia technology plays an important role. Various Wireless channels are available for encouraging the communication systems; in that internet has an important and trending channel for sharing of multimedia information. This facility has dual objectives like positives and controversies related to multimedia digital industry. The positive evaluation tends to improve the revenue and quality of the organization. Coming to controversy, Excessive allotment of large multimedia information through internet causes the loss. An audio, image and videos etc. are has been taken as multimedia information. The controversies which are mentioned above solve by different ways and implements a solution called as water marking. In this work various implementations are compared and suggest the perfect technique for video watermarking. Using this increases the efficiency by 97.86% and throughput by 96.78% this is good achievement compared to existed methods. © 2020 SSRG International Journal of Engineering Trends and Technology. All rights reserved.

**Publisher:** Seventh Sense Research Group

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 26) Dhanalakshmi, B.<sup>a e</sup>, Sekhar, B.C.<sup>b</sup>, Vivekananda, K.V.<sup>c</sup>, Rao, B.S.<sup>d</sup>, Rao, B.P.<sup>e</sup>, Rao, P.S.V.S.<sup>e</sup>

**Enhanced dielectric and magnetic properties in Mn-doped bismuth ferrite multiferroic nanoceramics**  
(2020) *Applied Physics A: Materials Science and Processing*, 126 (7), art. no. 557, .

**DOI:** 10.1007/s00339-020-03745-6

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<sup>e</sup> Department of Physics, Andhra University, Visakhapatnam, 530003, India

#### **Abstract**

Multiferroic nanoparticles of manganese doped bismuth ferrite with the chemical formula,  $\text{Bi}_{1-x}\text{Mn}_x\text{FeO}_3$ , with x values of 0, 0.025, 0.05, 0.075 and 0.1, were synthesized by sol-gel autocombustion method. X-ray diffraction measurements and Rietveld structural refinements were performed on the samples to ensure the formation of rhombohedrally distorted perovskite phase for all the samples. Dielectric measurements of the samples have been carried out in a wide range of frequencies from 1 to 40 MHz and at different temperatures in the range from 30° to 450 °C. Temperature-dependent dielectric anomalies were observed and the same were attributed to structural inhomogeneities at around 150°–270 °C, and to typical free charge carrier hopping mechanisms and anomalies at around 270°–420 °C. Impedance analysis of the samples provides indirect support for the reasons discussed in the dielectric properties and the corresponding electrical conductivity behaviour in these samples. Magnetic measurements were carried out to understand the influence of Mn ions on the magnetic behaviour of the studied multiferroics. The results of all these measurements are well discussed, and they indicate a considerable enhancement in the magnetic order with Mn doping and also a decrease in the dielectric loss with an evidence magnetoelectric coupling and thus making them useful for device applications. © 2020, Springer-Verlag GmbH Germany, part of Springer Nature.

**Publisher:** Springer

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

27) Ramisetty, U.M.<sup>a</sup> , Chennupati, S.K.<sup>b</sup>

**Optimal transmit power allocation for maximizing the channel capacity and sinr in mu-mimo system using dirty paper coding**

(2020) *International Journal of Electrical Engineering and Technology*, 11 (4), pp. 281-289.

**DOI:** 10.34218/IJEET.11.4.2020.032

<sup>a</sup> Department of Electronics and Communications Engineering, Vignan's Institute of Information Technology, Visakhapatnam, India

<sup>b</sup> Department of Electronics and Communications Engineering, GITAM - Gandhi Institute of Technology and Management (Deemed to be University), Visakhapatnam, India

**Abstract**

Massive MIMO is the emerging technology to design 5G wireless communication systems. Perfect channel state information(CSI) is the essential condition to design the performance metrics for MU-MIMO system since the inaccuracies present in the CSI reduces data rates and channel capacity. The objective of this paper is to design a optimum power allocation scheme for MU-MIMO using dirty paper coder precoding. An expression is derived to determine the optimum power allocation and the ambient condition with degree of perfection factor under channel reliability at the base station to reduce the transmit power and the results obtained are presented and analysed. 2018 The Korean Institute of Communications and Information Sciences. Publishing Services by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>). © IAEME Publication Scopus Indexed

**Publisher:** IAEME Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

28) Mohanty, S.N.<sup>a</sup> , Lydia, E.L.<sup>b</sup> , Elhoseny, M.<sup>c</sup> , Al Otaibi, M.M.G.<sup>d</sup> , Shankar, K.<sup>e</sup>

**Deep learning with LSTM based distributed data mining model for energy efficient wireless sensor networks**

(2020) *Physical Communication*, 40, art. no. 101097, .

**DOI:** 10.1016/j.phycom.2020.101097

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**Abstract**

Wireless sensor network (WSN) comprises a collection of sensor nodes employed to monitor and record the status of the physical environment and organize the gathered data at a central location. This paper presents a deep learning based distributed data mining (DDM) model to achieve energy efficiency and optimal load balancing at the fusion center of WSN. The presented DMM model includes a recurrent neural network (RNN) based long short-term memory (LSTM) called RNN-LSTM, which divides the network into various layers and place them into the sensor nodes. The proposed model reduces the overhead at the fusion center along with a reduction in the number of data transmission. The presented RNN-LSTM model is tested under a wide set of experimentation with varying number of hidden layer nodes and signaling intervals. At the same time, the amount of energy needed to transmit data by RNN-LSTM model is considerably lower than energy needed to transmit actual data. The simulation results indicated that the RNN-LSTM reduces the signaling overhead, average delay and maximizes the overall throughput compared to other methods. It is noted that under the signaling interval of 240 ms, it can be shown that the RNN-LSTM achieves a minimum average delay of 190 ms whereas the OSPF and DNN models shows average delay of 230 ms and 230 ms respectively. © 2020 Elsevier B.V.

**Publisher:** Elsevier B.V.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

29) Deepika, K.K.<sup>a b</sup>, Vijaya Kumar, J.<sup>c</sup>, Kesava Rao, G.<sup>d</sup>

**Enhancement of voltage regulation using a 7-level inverter based electric spring with reduced number of switches**  
(2020) *International Journal of Power Electronics and Drive Systems*, 11 (2), pp. 555-565.

**DOI:** 10.11591/ijpeds.v11.i2.pp555-565

<sup>a</sup> Department of Electrical and Electronics Engineering, Vignan's Institute of Information Technology, India

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<sup>c</sup> Department of Electrical and Electronics Engineering, Anil Neerukonda Institute of Technology & Science, India

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**Abstract**

Electric Springs has been testified recently to enhance voltage regulation in distribution systems using demand side management. In this paper, a 7-level Multilevel Inverter (MLI) with a resonant switched capacitor Converter based on sinusoidal PWM, is implemented to analyze the performance of an electric spring under voltage variations at PCC. By the proposed MLI based ES, voltage regulation of critical load voltage is studied for voltage sag and swell conditions. Remarkable features of the proposed topology are maintaining voltage balance in input capacitors and reduction of power components. Simulations have been done in MATLAB/ Simulink on distribution system with DGs equipped with MLI based ES under line voltage anomalies. Tested results are analyzed with THD% in critical load voltage. © 2020, Institute of Advanced Engineering and Science. All rights reserved.

**Publisher:** Institute of Advanced Engineering and Science

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

30) Gopala Rao, L.V.V.<sup>a</sup>, Narayanan, S.<sup>b</sup>

**Optimal response of half car vehicle model with sky-hook damper based on LQR control**  
(2020) *International Journal of Dynamics and Control*, 8 (2), pp. 488-496.

**DOI:** 10.1007/s40435-019-00588-9

<sup>a</sup> Department of Mechanical Engineering, Vignan's Institute of Information Technology, Duvvada, Visakhapatnam, 530 049, India

<sup>b</sup> Professor Emeritus, Department of Mechanical Engineering, Indian Institute of Information Technology, Design and Manufacturing, Kancheepuram, Chennai, 600 127, India

**Abstract**

This paper addresses the problem of determining the optimal parameters of a sky-hook damper type suspension in the control of the stationary response of half car vehicle models traversing a rough road. The optimal values of the sky-hook damper suspension parameters are obtained by equating the active suspension control force using linear quadratic regulator (LQR) with that of the sky-hook damper suspension force. Results show that the performance of half car model with optimal sky-hook damper suspension is almost close to the performance of half car model with LQR control. © 2019, Springer-Verlag GmbH Germany, part of Springer Nature.

**Publisher:** Springer

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

31) Laxmi Lydia, E.<sup>a</sup>, Krishna Kumar, P.<sup>b</sup>, Shankar, K.<sup>c</sup>, Lakshmanaprabu, S.K.<sup>d</sup>, Vidhyavathi, R.M.<sup>e</sup>, Maselena, A.<sup>f</sup>

**Charismatic Document Clustering Through Novel K-Means Non-negative Matrix Factorization (KNMF) Algorithm Using Key Phrase Extraction**  
(2020) *International Journal of Parallel Programming*, 48 (3), pp. 496-514.

**DOI:** 10.1007/s10766-018-0591-9

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### Abstract

The tedious challenging of Big Data is to store and retrieve of required data from the search engines. Problem Defined There is an obligation for the quick and efficient retrieval of useful information for the many organizations. The elementary idea is to arrange these computing files of organization into individual folders in an hierarchical order of folders. Manually, to order these files into folders, there is an ardent need to know about the file contents and name of the files to give impression of files, so that it provides an alignment of certain set of files as a bunch. Problem Statement Manual grouping of files has its own complications, for example when these files are in numerous amounts and also their contents cannot be illustrious by their labels. Therefore, it's an intense requirement for Document clustering with data processing machines for enthusiastic results. Existing System A couple of analyzers are impending with dynamic algorithms and comprehensive analogy of extant algorithms, but, yet, these have been restricted to organizations and colleges. After recent updated rules of NMF their raised a self interest in document clustering. These rules gave trust in its performances with better results when compared to Latent Semantic Indexing with Singular Value Decomposition. Proposed System A new working miniature called Novel K-means Non-Negative Matrix Factorization (KNMF) is implemented using renovated guidelines of NMF which has been diagnosed for clustering documents consequently. A new data set called Newsgroup20 is considered for the exploratory purpose. Removal of common clutter/stop words using keywords from Key Phrase Extraction Algorithm and a new proposed Iterated Lovin stemming will be utilized in preprocessing step in assisting to KNMF. Compared to the Porter stemmer and Lovins stemmer algorithms, Iterative Lovins algorithm is providing 5% more reduction. 60% of the document terms are been minimized to root as remaining terms are already root words. Eventually, an appeal to these processes named "Progressive Text mining radical" is developed in lateral exertion of K-Means algorithm from the defined Apache Mahout Project which is used to analyze the performance of the MapReduce framework in Hadoop. © 2018, Springer Science+Business Media, LLC, part of Springer Nature.

**Publisher:** Springer

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 32) Madhusudhana Rao, T.V.<sup>a</sup>, Srinivasa Rao, P.<sup>b</sup>, Latha Kalyampudi, P.S.<sup>c</sup>

### Iridology based vital organs malfunctioning identification using machine learning techniques

(2020) *International Journal of Advanced Science and Technology*, 29 (5), pp. 5544-5554.

<sup>a</sup> Department of CSE, Vignan's Institute of Information Technology, Visakhapatnam, India

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### Abstract

This paper proposes a non-invasive method based on computerized iridology that can identify the malfunctioning of vital organs like the heart, lung and pancreas. Data of 100 patients suffering either from diabetes, heart disease or lung disease is collected. The data is used to develop an algorithm that can identify vital organ malfunctioning based on iridology. Measures like accuracy, error rate, precision, recall, specificity and F-measure are applied on the algorithm for evaluation. The results show an accuracy of 0.9166, which shows the effectiveness of the proposed algorithm. © 2020 SERSC.

**Publisher:** Science and Engineering Research Support Society

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 33) Satyanarayana, V.S.V.<sup>a</sup>, Sateesh, B.<sup>a</sup>, Rao, N.M.<sup>b</sup>

**Passive suspension optimization of a quarter car using preview control with the spectral decomposition method**  
(2020) *International Journal of Dynamics and Control*, 8 (1), pp. 218-228.

**DOI:** 10.1007/s40435-018-0496-x

<sup>a</sup> Department of Mechanical Engineering, Vignan's Institute of Information Technology, Visakhapatnam, A.P, India

<sup>b</sup> Department of Mechanical Engineering, Jawaharlal Nehru Technological University, Kakinada, A.P, India

#### **Abstract**

In this paper, control of a quarter car vehicle model with optimized passive suspension elements is presented. The vehicle is considered to travel on a rough road which is modeled as the power spectral density of the random road excitation given by integrated white noise that can be approximated by a deterministic step input. The weighted sum of the control force, suspension travel and road holding is minimized by using the optimal preview control law and the spectral decomposition method is used for obtaining the response. The parameters of a passive suspension system, namely spring stiffness and damping coefficient are optimally determined by the mean square equivalence of control force of the passive suspension to control force obtained by the stochastic optimal preview controller. The optimal parameters are also calculated by coordinating the passive suspension performance with the performance of the active preview control and the results show that the optimized passive system performance closely tracks the active system performance. © 2018, Springer-Verlag GmbH Germany, part of Springer Nature.

**Publisher:** Springer

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 34) Chandra Sekhar, B.<sup>a</sup>, Dhanalakshmi, B.<sup>b</sup>, Srinivasa Rao, B.<sup>c</sup>, Ramesh, S.<sup>d</sup>, Subba Rao, P.S.V.<sup>e</sup>, Parvatheeswara Rao, B.<sup>e</sup>

**Structural and electrical properties of Nd<sup>3+</sup> doped ferroelectric barium sodium niobate ceramics**  
(2020) *Ferroelectrics*, 572 (1), pp. 158-163.

**DOI:** 10.1080/00150193.2020.1869514

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<sup>d</sup> School of Technology, GITAM University, Bengaluru, India

<sup>e</sup> Department of Physics, Andhra University, Visakhapatnam, India

#### **Abstract**

Ferroelectric polycrystalline samples of Ba<sub>4</sub>Na<sub>2</sub>Nb<sub>10</sub>O<sub>30</sub> with rare earth neodymium ion, member of the family of TB, were prepared using a high temperature solid state reaction technique and studied their electrical properties in a range of temperature (RT-to 300 °C) at 1KHz. X-ray diffraction analysis of these compounds shows the formation of single phase tetragonal structure at room temperature. Detailed studies of the dielectric properties suggest that they have undergone diffuse ferroelectric–paraelectric phase transition well above the room temperature. It has also been found that as the concentration of the neodymium increases, Curie temperature observed to be decreased. Measurements of electrical DC Conductivity as a function of temperature suggest that the compounds have semi conductivity properties the temperature, with positive temperature coefficient of resistance (PTCR) behavior. © 2021 Taylor & Francis Group, LLC.

**Publisher:** Bellwether Publishing, Ltd.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 35) Hait, P.<sup>a b</sup>, Sil, A.<sup>b</sup>, Choudhury, S.<sup>b</sup>

**Damage assessment of low to mid rise reinforced concrete buildings considering planner irregularities**  
(2020) *International Journal for Computational Methods in Engineering Science and Mechanics*, 22 (2), pp. 150-168.



**DOI:** 10.1080/15502287.2020.1856971

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**Abstract**

Structural damage index (SDI) is determined to implement damage-based design (DBD) which is a useful design philosophy in terms of safety and reliability nowadays. Literature is available to determine DI using different methods. Park-Ang damage assessment method is popular among them. In this method, first member damage is calculated then storey damage index is determined. From the calculated SDI, global damage index (GDI) is estimated. Park-Ang method requires three steps to estimate DI of structure which is tedious and time-consuming procedure for a multi-storied building. To avoid this complexity, a simplified DI model has been proposed which can estimate global DI directly. In the proposed model, three most influential engineering demand parameters (EDPs) have been combined to estimate GDI directly. For this purpose, 27 typical samples of 4-, 8-, and 12-storey reinforced concrete (RC) buildings with rectangular-shape, L-shape, and U-shape planner geometry were considered to account the effect of planner irregularities. It has been found that the proposed model established a good agreement with Park-Ang DI. The proposed model effectively estimates reliable GDI and can be used as a powerful tool for estimating seismic damage of buildings especially for massive structures. © 2021 Taylor & Francis Group, LLC.

**Publisher:** Bellwether Publishing, Ltd.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

36) Adilakshmi, S.<sup>a</sup>, Ravi Shankar, N.<sup>b</sup>

**Implemented modified dijkstra's algorithm to find project completion time**

(2020) *Advances in Mathematics: Scientific Journal*, 9 (12), pp. 10787-10795.

**DOI:** 10.37418/amsj.9.12.62

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<sup>b</sup> Department of Mathematics, Gitam Institute of Science Gitam Deemed To Be University IndiaAP 530045, India

**Abstract**

Longest path problems in network analysis provide an important functional method for planning and managing broad projects in the architecture, medical and different sectors. We may use PERT / CPM approaches to calculate the project completion time or the longest path in the diagram in question. Calculation of traditional Dijkstra's algorithm has been commonly used in the shortest path problems. Indeed, it's one of the most referenced. In this paper, traditional PERT compared to Modified Dijkstra's algorithm and calculate earliest and latest times. © 2020, Research Publication. All rights reserved.

**Publisher:** Research Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

37) Raghunathan, V.<sup>a</sup>, Palani, K.<sup>b</sup>, Shinu, P.<sup>c</sup>, Dhilip, J.D.J.<sup>d</sup>, Yoganjaneyulu, G.<sup>e</sup>, Ganesh, S.<sup>f</sup>

**Influence of Parthenium Hysterophorus and Impomea Pes-caprae Fibers Stacking Sequence on the Performance Characteristics of Epoxy Composites**

(2020) *Journal of Natural Fibers*, .

**DOI:** 10.1080/15440478.2020.1863292

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<sup>b</sup> Department of Mechanical Engineering, Wolaita Sodo University, Wolaita Sodo, Ethiopia

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<sup>f</sup> Department of Mechanical Engineering, Rajalakshmi Institute of Technology, Chennai, Tamil Nadu, India

### Abstract

The application suitability of natural fibers is increased by the method of hybridization. The current study deals with the development and characterization of four different tri-layer composites by varying the stacking sequence of Parthenium hysterophorus and Impomea pes-caprae fibers with epoxy as a matrix, by using the conventional hand layup process. The mechanical properties, namely tensile, flexural, impact, Shore D hardness, and water absorption properties, were analyzed as per ASTM. The test results show that composites with upper layers of Impomea pes-caprae and a core layer of Parthenium hysterophorus fibers showed enhanced mechanical properties and reduced water absorption, thereby proving its suitability for lightweight medium load applications. Morphological studies using Scanning Electron Microscope elucidated the fiber bonding and void characteristics of the tested composites. © 2020 Taylor & Francis.

**Publisher:** Bellwether Publishing, Ltd.

**Document Type:** Article

**Publication Stage:** Article in Press

**Source:** Scopus

- 38) Aylapogu, P.K.<sup>a</sup>, Donga, M.S.<sup>b</sup>, Venkatachari, D.<sup>c</sup>, RamaDevi, B.<sup>c</sup>

### High gain switched beam Yagi-Uda antenna for millimeter wave communications

(2020) *International Journal of Pervasive Computing and Communications*, 17 (3), pp. 288-300.

**DOI:** 10.1108/IJPCC-07-2020-0079

<sup>a</sup> Department of Electronics and Communication Engineering, Vardhaman College of Engineering, Hyderabad, India

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<sup>c</sup> Department of Electronics and Communication Engineering, Lendi Institute of Engineering and Technology Andhra Pradesh, India

### Abstract

**Purpose:** The suggested antenna has a switched mechanism among the successive elements of the radiating patch. The purpose of this paper is to develop high gain and less interference at higher frequencies. **Design/methodology/approach:** The design geometry of the suggested high gain switched beam Yagi-Uda antennas. The constructed antenna has been developed with Rogers Substrate, relative permittivity ( $\epsilon_r$ ) of 4.4, tangent of loss 0.0009 and with height of 1.6 mm. The proposed antenna has an input impedance of 50, and it is connected to input feed line with 2 mm. **Findings:** In forthcoming life, the antennas play key role in all the wireless devices, because these devices perform with high gain and high efficacy. **Originality/value:** The pivotal principle of this paper is to accomplish the gain as high, high directivity and interference is low at higher frequencies. Therefore, it is more applicable to 5G mobile communications and millimeter wave communications. © 2020, Emerald Publishing Limited.

**Publisher:** Emerald Group Holdings Ltd.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 39) Raju, K.D.<sup>a b</sup>, Rao, M.P.V.V.B.<sup>c</sup>, Aditya, Y.<sup>d</sup>, Vinutha, T.<sup>e</sup>, Reddy, D.R.K.<sup>e</sup>

### Kantowski–sachs universe with dark energy fluid and massive scalar field

(2020) *Canadian Journal of Physics*, 98 (11), pp. 993-998.

**DOI:** 10.1139/cjp-2019-0563

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**Abstract**

This study is mainly concerned with a spatially homogeneous and anisotropic Kantowski–Sachs cosmological model with anisotropic dark energy fluid and massive scalar field. We solve the field equations using (i) the shear scalar proportionality to the expansion scalar and (ii) a mathematical condition that is a consequence of the power law between the scalar field and the average scale factor of the universe, and the corresponding dark energy model is presented. The cosmological parameters of the model are computed and discussed, as well as the relevance of its dynamical aspects to the recent scenario of the accelerated expansion of the universe. © Canadian Science Publishing. All rights reserved.

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**Source:** Scopus

40) Malathi, S.<sup>a</sup>, Kethavathu, S.N.<sup>b</sup>, Aruna, S.<sup>c</sup>

**V band frequency reconfigurable antenna for millimeter wave applications**

(2020) *Telecommunications and Radio Engineering (English translation of *Elektrosvyaz and Radiotekhnika*)*, 79 (15), pp. 1315-1325.

**DOI:** 10.1615/telecomradeng.v79.i15.20

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**Abstract**

A compact V band frequency reconfigurable microstrip patch antenna is introduced in this paper. The introduced antenna is a Psi shaped patch designed to operate at 48 GHz. This basic structure is modified by introducing p-i-n diodes, radiating slots, and resistors on the surface of the patch which exhibits multi-band operation at 63 GHz, 68 GHz, 69 GHz, and 70 GHz and is well suitable for 5G applications. The compactness of the introduced antenna is 8 mm×8 mm×0.254 mm and operates at the millimeter-wave range, i.e., (30 GHz - 300 GHz). The two p-i-n diodes are arranged on either side of the feeder and two symmetric slots with resistors are placed on the substrate which controls the feed line and this structure achieves the frequency reconfigurability. The patch is made of copper material and the antenna is designed on a material known as ROGERS R03003 substrate with properties of  $\zeta = 3$  and  $\delta = 0.0013$  and due to the dielectric loss for high-frequency performance, used an EM simulator which is HFSSv16. The simulated results show optimum gain and wide bandwidth at the operating frequency. © 2020 by Begell House, Inc.

**Publisher:** Begell House Inc.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

41) Lydia, E.L.<sup>a</sup>, Kannan, S.<sup>b</sup>, SumanRajest, S.<sup>c</sup>, Satyanarayana, S.<sup>d</sup>

**Correlative study and analysis for hidden patterns in text analytics unstructured data using supervised and unsupervised learning techniques**

(2020) *International Journal of Cloud Computing*, 9 (2-3), pp. 150-162.

**DOI:** 10.1504/IJCC.2020.109373

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**Abstract**

Two-third of the data generated by the internet is unstructured text in the form of e-mails, audio, video, pdf files, word documents, text documents. Extraction of these unstructured text patterns using mining techniques achieve quick access to outcomes. Textual data available at online contains different patterns and when those huge incoming unstructured data enters into the system creates a problem while organising those documents into meaningful groups. This paper discusses

document classification using supervised learning by focusing on the concept-based algorithm and also deals with the hidden patterns in the documents using unsupervised clustering technique and topic-based modelling for the analysis and improvement of systematic arrangement of documents by applying k-means and LDA algorithm. Finally, this presents comparative study and importance of clustering than classification for unstructured documents. © 2020 Inderscience Enterprises Ltd.. All rights reserved.

**Publisher:** Inderscience Publishers

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

- 42) Kartini, I.A.N.<sup>a</sup>, Herningsih<sup>b</sup>, Susilawati, S.<sup>c</sup>, Laxmi Lydia, E.<sup>d</sup>, Shankar, K.<sup>e</sup>

**Study of different types of experience competencies to enhance the environment**  
(2020) *Journal of Environmental Treatment Techniques*, 8 (3), pp. 857-860.

<sup>a</sup> Economic and Business Faculty, Universitas 17 Agustus 1945, Surabaya, Indonesia

<sup>b</sup> Universitas Muhammadiyah Sorong, Papua, Indonesia

<sup>c</sup> Universitas Islam Negeri Maulana Malik Ibrahim Malang, Indonesia

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#### **Abstract**

As a major aspect of an activity to make the experience of customer into the organization for improving the integration of the environment a phased and organized methodology is needed. Around the globe with scores of customers on the basis of working, the REAL world methodology is used. At "customer experience" when the operation and company become proficient the structure will "demystify" the end state and activities that should be able to recognize. © 2020, Dorma Journals. All rights reserved.

**Publisher:** Dorma Journals

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

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**Strengthening environment resistance for improving quality growth**  
(2020) *Journal of Environmental Treatment Techniques*, 8 (3), pp. 853-856.

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#### **Abstract**

In line with the development of the digital economy, various environment resources at this time can be utilized with the speed of distribution and increasingly good quality. The fast and dynamic digital economy penetration has shaped the landscape of the digital economy in Indonesia to help the environment. Nowadays, Indonesia does not only cover the demand services for environment, e-commerce and financial technology (Fintech), but they also provide internet of things (IoT) services. The projection of digital economy development in Indonesia is shown by the growth of value of e-commerce environment by 1,625 percent to USD 130 billion in the 2013-2020 period. Since economics is an open system, the three main processes (extraction, processing, or production and consumption) all involve the generation of waste that is ultimately disposed of to the environment (air, water or land). Excessive waste in inappropriate locations and time will cause biological changes in the environment, which in turn damages animals, plants and ecosystems. If environmental damage to human health or adversely affect human welfare, economists believe that economic pollution has occurred. © 2020, Dorma Journals. All rights reserved.

**Publisher:** Dorma Journals

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 44) Karwade, A.<sup>a</sup>, Thombre, S.<sup>a</sup>, Bhiogade, G.<sup>b</sup>

**Investigations on premixed charge compression ignition type combustion using butanol-diesel blends**

(2020) *Journal of Thermal Science and Technology*, 15 (3), art. no. 20-00230, pp. 1-11.

**DOI:** 10.1299/jtst.2020jtst0026

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**Abstract**

Renewable biodegradable butanol blended to diesel fuel was used in an engine that operates on PCCI mode shows excellent combustion characteristics and offer efficient high load performance with minimum exhaust emissions. Its higher octane number prevents engine knock, higher cooling effects have potential to reduce the NOX emissions and well-mixing ability with air substantially reduces the smoke emission. In the present experimentation, n-butanol and diesel blend B10, B20, B30 and B40 were tested on PCCI mode which was mainly accomplished by DI timing 20 degree CA bTDC and injection pressure 400 bar. For high load operation, B40 blend provided 6.9%, 8.1%, 12.9% and 13.7% higher brake thermal efficiency over B30, B20, B10 and neat diesel respectively at the cost of small increment in brake specific fuel consumptions. Smoke and CO emissions reduction were observed. However, NO and HC emissions produced were higher than the B30, B20, B10 and diesel respectively. Considering the benefits in terms of higher high load efficiency and lower emissions, in addition, delayed CA50 (50% burn at crank angle) than all fuel blends, B40 blend was preferred for higher premixing to attain higher performance. © 2020 The Japan Society of Mechanical Engineers.

**Publisher:** Japan Society of Mechanical Engineers

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

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**Dichotomy and well conditioning of two-point boundary value problems on time scale dynamical systems**

(2020) *International Journal of Knowledge-Based and Intelligent Engineering Systems*, 24 (2), pp. 107-115.

**DOI:** 10.3233/KES-200034

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**Abstract**

In this paper, we establish close relationships between the stability constants on one hand and the global behaviour of fundamental matrices on the other hand to the two-point boundary value problems on time-scale dynamical systems. We introduce the concept of conditioning number  $k$  and show that conditioning number is the right criteria in estimating the global error due to small perturbations of two point boundary value problems on time scale dynamical systems. Further, the moderate stability constants imply a dichotomy with moderate  $k$ -bound will be developed. Further, the exponential behaviour of solutions of the Green's matrix will be investigated. We also investigate the conditions under which strong dichotomy exists for two-point boundary value problems when the boundary conditions are separable. © 2020 - IOS Press and the authors. All rights reserved.

**Publisher:** IOS Press

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

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**An Optimal Least Square Support Vector Machine Based Earnings Prediction of Blockchain Financial Products**  
(2020) *IEEE Access*, 8, art. no. 9127981, pp. 120321-120330.

**DOI:** 10.1109/ACCESS.2020.3005808

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### Abstract

The booming applications of bitcoin Blockchain technologies made investors concerned about the return and risk of financial products. So, the return rate of bitcoin must be foreseen in prior. This research article devises an effective return rate prediction technique for Blockchain financial products based on Optimal Least Square Support Vector Machine (OLS-SVM) model. The parameter optimization of the LS-SVM model was performed using hybridization of Grey Wolf Optimization (GWO) with Differential Evolution (DE), called optimal GWO (OGWO) algorithm. The hybridization process is performed to eliminate the local optima problem of GWO and enhance the diversity of the population. To verify the goodness of the proposed model, the Ethereum (ETH) return rate was chosen as the target and experimental analysis was performed on it to verify the predictive results on the time series. The experimental outcome was analyzed in terms of two performance measures namely Mean Squared Error (MSE) and Mean Absolute Percentage Error (MAPE). The obtained simulation outcome infers that the OLS-SVM model yielded better predictive outcome of the return rate of financial products. © 2013 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

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**A comparative assessment on implementation of human resource development practices impact on employee productivity in public and private banks-an empirical study on banks in India**

(2020) *Journal of Advanced Research in Dynamical and Control Systems*, 12 (7), pp. 686-696.

**DOI:** 10.5373/JARDCS/V12I7/20202051

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### Abstract

The "Human Resource Development (HRD)" will be developing perception today that no organization with long term objectives might give to ignore in instance it requires to attain the principles of quality. The HRD will be a significant element for achievement of any organization. The effective organization of human assets behaves an important part in "management of sound" is a central sub framework of modern management framework. The HRD in banks, under current situation in country will be significant to know bank's contemporary HRD philosophy, preparation and result with a view to provide ideas for formulation of right viewpoint and HRD practices in Banks. The current survey is undertaken considering the nonappearance of organized studied on subject. The nationalization has transformed dimensions & complexion have located the changing responsibilities on shoulders of commercial banks like development branch offices to unbanked and remote rural regions on a enormous scale so as to cover artisans, self-employed persons, small scale sector, cottage and rural industries, weaker sections of the society, small traders and other persons of small means. This manuscript covers all significant regions of HRD in banks. These regions incorporate theoretical explanation about Human Resource and HRD in Banks, fundamentals of HRD, the sub-system of HRD such as Training & Development, Organization Development,

Performance Appraisal, Career Planning and Development, Participative Management, Quality Circles etc. It also efforts to know the observation of employees to HRD Climate and how is a bank faring in OCTAPACE culture regarding experience & age. These main regions of HRD are surveyed systematically to most amounts through means of accounts, discussions, reports, and observations etc. © 2020, Institute of Advanced Scientific Research, Inc.. All rights reserved.

**Publisher:** Institute of Advanced Scientific Research, Inc.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 48) Vavilapalli, S.<sup>a</sup>, Tentu, S.<sup>b</sup>, Kundrapu, D.<sup>c</sup>, Rajesh Kumar, B.<sup>d</sup>, Laxmi, V.<sup>b</sup>

**A study on public assistance and its impact on women workers for achieving work life balance with reference to it sector**

(2020) *Journal of Advanced Research in Dynamical and Control Systems*, 12 (7), pp. 697-706.

**DOI:** 10.5373/JARDCS/V12I7/20202052

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**Abstract**

The economic pressure, education alongside varying trends within the value system and lifestyle has confident more number of girls to hitch the company environment Women are India has always been the one within the family to be the only caretaker since ages and work-life stability of women employees has always been the research focus for several researchers, Hence the researcher deliberates work-family balance with reference to family, domestic and colleagues among working married and unmarried women in Hyderabad, which is India's largest IT hub. Motivation of selection of this subject is how social support assists the ladies employees to satisfy out demands of labor also as family life in Information technology sector. The scope of the study is restricted to women employees with reference to Information technology sector alone. Main theme of preparation of this dissertation is to walk around the life of working married and unmarried women who balance work and family tasks and identify impact thereon. The study adopts correlation analysis to spot the impact of social network in harmonizing work and family tasks. The reading considers three variables which include family, domestic and colleague. It is observed from the study that family, domestic and colleague support has an impression on married women employees to realize work and family life balance. Whereas family and domestic doesn't impact on unmarried women employees but colleague support does impact to realize work family balance. As a result Changes in family automatically affects the social network which in turn affects the work and family balance. © 2020, Institute of Advanced Scientific Research, Inc.. All rights reserved.

**Publisher:** Institute of Advanced Scientific Research, Inc.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 49) Gullipalli, N.<sup>a</sup>, Rodda, S.<sup>b</sup>

**Enhanced dbscan with hierarchical tree for web rule mining**

(2020) *Scalable Computing*, 21 (2), pp. 189-202.

**DOI:** 10.12694/scpe.v21i2.1645

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**Abstract**

Like other mining, web mining is also necessary to increase the power of web search engine to identify the intended web page and web document. While processing with large datasets, there arises several issues associated with space availability, similarity relationships between different webpage's and running time. Hence, this paper intends to develop an enhanced web mining model based on two contributions. At first, the hierarchical tree is framed, which produces different categories of the searching queries (different web pages). Next, to hierarchical tree model, enhanced Density-Based Spatial Clustering of Applications with Noise (DBSCAN) technique model is developed by modifying the traditional DBSCAN. This

technique results in proper session identification from raw data. Moreover, this technique offers the optimal level of clusters necessitated for hierarchical clustering. After hierarchical clustering, the rule mining is adopted. The traditional rule mining technique is generally based on the frequency; however, this paper intends to enhance the traditional rule mining based on utility factor as the second contribution. Hence the proposed model for web rule mining is termed as Enhanced DBSCAN-based Hierarchical Tree (EDBHT). It benefits in providing the search results depending on high level information (e.g., location), so that the ability of search engine in providing the interesting association rules can be improved. Next, to the implementation, the performance of proposed EDBHT is found to be enhanced when compared over several traditional models. © 2020, West University of Timisoara.

**Publisher:** West University of Timisoara

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

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**Influence of Stacking Sequence on the Mechanical and Water Absorption Characteristics of Areca Sheath-palm Leaf Sheath Fibers Reinforced Epoxy Composites**

(2020) *Journal of Natural Fibers*, pp. 1-11.

**DOI:** 10.1080/15440478.2020.1787921

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<sup>d</sup> Department of Production Engineering, National Institute of Technology, Tiruchirappalli, India

<sup>e</sup> Department of Mechanical Engineering, K. Ramakrishnan College of Engineering, Tiruchirappalli, India

**Abstract**

Hybridization of natural fibers in polymeric composites is used in various applications due to its many advantages. The present study deals with the development of four different tri-layer composites by varying the stacking sequence of areca sheath and palm leaf sheath fibers with epoxy as a matrix by conventional hand lay-up process. The assessment of the developed composite's properties was done by analyzing tensile, flexural, compression, impact, shore D hardness, water absorption as per ASTM (D 638-14, D790-10, D695-15, D256-10, D2240-15, D570-96, respectively). It was found from the test results that the composites with skin layers of areca sheath and a core layer of palm leaf sheath fibers showed better mechanical properties with a higher ultimate tensile strength of 46 MPa, ultimate flexural strength of 51 MPa, ultimate compression strength of 54 MPa, and reduced water absorption proving its suitability for lightweight applications. A scanning Electron Microscope highlighted the fiber bonding, and void characteristics of the tested composites. © 2020, © 2020 Taylor & Francis.

**Publisher:** Taylor and Francis Inc.

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**Source:** Scopus

- 51) Srinivasa Rao, M.<sup>a</sup>, Sekhar, C.<sup>a</sup>, Sunayana, B.<sup>a</sup>, Tejaswi, P.<sup>b</sup>, Kumari, P.R.<sup>c</sup>

**Predictive model for abnormality in blood pressure**

(2020) *Journal of Advanced Research in Dynamical and Control Systems*, 12 (6), pp. 2005-2011.

**DOI:** 10.5373/JARDCS/V12I2/S20201406

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<sup>c</sup> Dept of CSE, Raghu Engineering College(A), Visakhapatnam, A.P., India

**Abstract**

In the previous hardly any years, there have been critical improvements in how Machine Learning can be utilized in different industries and research. A health service is one of the quickest developing segments today and is right now in the center of a total worldwide upgrade and change. In this paper we have structured a model which will take previously existing clinical information Blood pressure is the power applied in the corridors by blood as it flows. It is isolated into systolic and diastolic



weights. It has been estimated that an expanded hemoglobin level lifts circulatory strain and the other way around bringing about hypertension and hypotension separately. While epidemiological examinations have improved our comprehension of ecological factors comparable to pulse, particularly with respect to abstain from food and exercise, the specific job of hereditary qualities in this setting has been trying to prod separated from the common condition frequently found in families and networks. Considering every one of these elements we construct a forecast model that can be utilized to foresee the anomaly in the pulse here we utilize hereditary family coefficient, BMI, physical movement, feelings of anxiety as free factors, information will be removed from wellbeing records and different ML characterization algorithms will be applied the best performing model will be tuned and last execution surveyed utilizing split-set approval. © 2020, Institute of Advanced Scientific Research, Inc. All rights reserved.

**Publisher:** Institute of Advanced Scientific Research, Inc.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

52) Samatha, B.<sup>a</sup>, Raja Kumar, K.<sup>a</sup>, Karyemsetty, N.<sup>b</sup>

**Channel estimation and equalization for vehicular network by novel pilot**

(2020) *International Journal of Vehicle Structures and Systems*, 12 (1), pp. 45-49.

**DOI:** 10.4273/ijvss.11.6.09

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**Abstract**

In this paper, we proposed a new technique for channel estimation using Orthogonal Frequency Division Multiplexing, (OFDM). Channel estimation is an integral part of the OFDM system based on the latest high speed transmission technology. Channel estimation is a vital technique used at the receiver side in order to estimate actual transmitted signal which gets affected by Interference. In OFDM, the known pilot signal is inserted to get a channel estimate and then the channel response is obtained by interpolation algorithms. We propose two algorithms and studied their characteristics qualities in channel estimation by simulation in NS-2. Firstly, the channel estimation scheme named Frequently Constructed Pilot Based Channel Estimation (FCPCE), which fully utilizes the pilot symbols is used to estimate the channel response and then the equalizer technique Maximum Minimizing Null Adaptive filters (MMNF) is used to completely remove the inter-symbol interference (ISI) and noise at the receiver side. Further, analysis and simulations show better performance of the proposed techniques based on 802.11p standard. © 2020 MechAero Foundation for Technical Research & Education Excellence.

**Publisher:** MechAero Found. for Techn. Res. and Educ. Excellence

**Document Type:** Article

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**Source:** Scopus

53) Kartini, I.A.N.<sup>a</sup>, Herningsih<sup>b</sup>, Susilawati, S.<sup>c</sup>, Lydia, E.L.<sup>d</sup>, Shankar, K.<sup>e</sup>

**Taking the business organizations into account in improving environment**

(2020) *Journal of Environmental Treatment Techniques*, 8 (2), pp. 664-668.

<sup>a</sup> Economic and Business Faculty, Universitas 17 Agustus 1945, Surabaya, Indonesia

<sup>b</sup> Universitas Muhammadiyah Sorong, Papua, Indonesia

<sup>c</sup> Universitas Islam Negeri Maulana Malik Ibrahim Malang, Indonesia

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**Abstract**

The links between the economy and the environment are manifold: the environment provides resources to the economy, and acts as a sink for emissions and waste. ... Poor environmental quality in turn affects economic growth and wellbeing by lowering the quantity and quality of resources or due to health impacts, etc. Environmental impact of economic growth. Economic growth means an increase in real output (real GDP). Therefore, with increased output and consumption we are

likely to see costs imposed on the environment. Also, economic growth caused by improved technology can enable higher output with less pollution. This study aims to investigate the consequences of interfering economic organizations into activities which help the environmental treatment. Based on researches done through this study the slope of the number of such companies which their works are in tune with positive environmental activities is increasing. © 2020, Dorma Journals. All rights reserved.

**Publisher:** Dorma Journals

**Document Type:** Article  
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**Source:** Scopus

- 54) Lydia, E.L.<sup>a</sup>, Vidhyavathi, R.M.<sup>b</sup>, Pustokhina, I.<sup>c</sup>, Pustokhin, D.A.<sup>d</sup>

**Comparative performance analysis of apache spark and map reduce using k-means**  
 (2020) *International Journal on Emerging Technologies*, 11 (2), pp. 198-204.

<sup>a</sup> Department of Computer Science and Engineering, Vignan's Institute of Information Technology (A), Visakhapatnam, Andhra Pradesh, India

<sup>b</sup> Department of Bioinformatics, Alagappa University, India

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#### Abstract

All around the globe, computer science grabbed its interest in Big Data that has developed extremely high with its continuous raise of data generation in social media and the aim for industrial and borstal Hercules institutions to facilitate additional investigation of their knowledge. This paper provides a deliberate correlation regarding two Apache frameworks such as Apache Hadoop MapReduce and Apache Spark (advanced). The two frameworks present a design structure to partition the tremendous data to appropriate information. Although these preferences rely on the BigData objective, individual achievement conflict from collective perspective utilization and its implementation purpose. Such an idea alternates the two commendable analyses for the variation and selection of BigData in dynamic possibilities. In this paper, we contradict the mentioned two designed framework structures together and offer effectiveness in evaluating through handling an approved machine learning approaches for data assembling using K-Means. From the beginning, the observations of this working paper determine the relative performance measures and approximating specifications for MapReduce such as velocity, throughput, and dynamism consumption of energy. © 2020, Research Trend. All rights reserved.

**Publisher:** Research Trend

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**Publication Stage:** Final  
**Source:** Scopus

- 55) Jyothi, B.<sup>a</sup>, Vinnakoti, S.<sup>b</sup>, Varma, P.S.<sup>c</sup>, Pushpa Latha, B.M.<sup>d</sup>

**Power quality improvement of wind and solar hybrid energy sources interface to the grid using upqc**  
 (2020) *Journal of Advanced Research in Dynamical and Control Systems*, 12 (2), pp. 1334-1342.

**DOI:** 10.5373/JARDCS/V12I2/S20201171

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#### Abstract

In distribution systems with non-conventional energy sources, power electronic converters are being utilized. The enhancement of power quality characteristics for the wind, solar energy systems merge with grid connected system is predominantly concentrated in this paper. The wind, solar energy power plant is designed by using the corresponding equations. The inverter is used to feed the power in to transmission grid and it is used as a power converter based shunt active power filter. Every function may be accomplishing either separately or concurrently. The UPQC is regulated based on

the PWM controller and is formulated depending on the conviction of PQ theory. Nevertheless in the existence of non-linear load also balanced load currents are acquired by using this control. This work is done in MATLAB and simulation results are verified. © Institute of Advanced Scientific Research, Inc.. All rights reserved.

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**Publication Stage:** Final

**Source:** Scopus

56) Vamsi, B.<sup>a</sup>, Midhunchakkaravarthy, D.<sup>a</sup>, Bhattacharyya, D.<sup>b</sup>

**Analysis of brain stroke and its occurrences**

(2020) *Asia Life Sciences*, 29 (1), pp. 21-38.

<sup>a</sup> Department of Computer Science and Multimedia, Lincoln University College, Malaysia

<sup>b</sup> Department of Computer Science and Engineering, Vignan's Institute of Information Technology, Visakhapatnam, 530049, India

**Abstract**

The physiological functioning of human brain involve in processing the input with sensory nerves, combing the existed information with new one, decision making power, human intelligence, emotions and daily activities. The neural processing unit is responsible to for carry out all human activities in various regions of the brain. If the stroke takes place immediately the flow of oxygen level decreases along wherein also reducing the blood flow from heart to brain and to other organs will be affected simultaneously. This results more death mortality. For every brain stroke: Ischemic and Hemorrhagic, one need to go through various medical treatments to find out the affected region in brain which takes time delay for processing the better results. In this paper, we propose the various stroke diagnosis results with slender parameters that which can be used to identify the severity of the stroke that has occurred in the brain. © Rushing Water Publishers Ltd. 2020.

**Publisher:** Rushing Water Publishers Ltd.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

57) Deepika, K.K.<sup>a</sup>, Rao, G.K.<sup>b</sup>, Kumar, J.V.<sup>c</sup>, Sankar Rai, S.R.<sup>d</sup>

**Investigation of a 7-level inverter-based electric spring subjected to distribution network dynamics**

(2020) *International Journal of Advanced Computer Science and Applications*, (2), pp. 176-180.

**DOI:** 10.14569/ijacsa.2020.0110223

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**Abstract**

This paper aims to provide solution to mitigate the voltage variations in critical load caused by the high penetration of DGs into distribution system using Electric Springs (ES). In this regard, there is a need for its exploration with various converter circuits. The improvised topology opens new avenues in the renewable energy powered micro grids for the implementation of ES with a Multi-Level Inverter (MLI) comprising a voltage balancing circuit providing a better quality of power system stability and voltage regulation. This paper captures the voltage dynamics of distribution system dominated by Renewable variability for varying reactive power of the DGs and constantly changing consumer demands. These are analyzed and explained using voltage profiles and power flows in Matlab/Simulink environment. It is practically shown that with the developed ES topology %THD in the system is conspicuously reduced and voltage regulation is seamlessly improved. © Science and Information Organization.

**Publisher:** Science and Information Organization

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 58) Purnomo, B.R.<sup>a</sup>, Srifitriani, A.<sup>b</sup>, Shichiyakh, R.A.<sup>c</sup>, Laxmi Lydia, E.<sup>d</sup>, Shankar, K.<sup>e</sup>

**Main assumption for treatment the natural resources in environment**

(2020) *Journal of Environmental Treatment Techniques*, 8 (1), pp. 551-555.

<sup>a</sup> Department of Management, Universitas Dr Soetomo, Surabaya, Indonesia

<sup>b</sup> Faculty of Teacher Training and Education, Universitas Prof Dr Hazairin SH, Bengkulu, Indonesia

<sup>c</sup> Kuban State Agrarian University named after I.T. Trubilin, Krasnodar, Russian Federation

<sup>d</sup> Vignan's Institute of Information Technology(A), Department of Computer Science and Engineering, Visakhapatnam, Andhra Pradesh, India

<sup>e</sup> Department of Computer Applications, Alagappa University, India

**Abstract**

The limited natural resource is a real challenge that can hinder the achievement of the goal of Environmental treatment. Holistic and integrated efforts from various sectors are needed to overcome the challenges of limited natural resources. In addition, the development planning needs to pay attention to balance the use of natural resources and the achievement of development targets and to pay attention to the reaction that the environment may depict against using its natural resources. In this regard, economists are taught that long-term economic growth should be maximized. However ecologists and environmentalists believe we can have too much of a good thing. The models used by mainstream economists do not properly take into account a few details – such as melting iceberg, shrinking resource stocks, or the opinions on all this of future generations. In fact, the real credit crunch is not the one involving banks, but the one involving the environment. For centuries we have been depleting forests, oceans, fuel sources, and other species, and the bill is about to become due. Economists' cherished belief in economic growth is colliding with the reality that we are just one part of larger ecosystem. It explores new economic approaches that aim to resolve the conflict and bring our financial system into balance with the rest of the world. © 2020, Dorma Journals. All rights reserved.

**Publisher:** Dorma Journals

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 59) Suwarni<sup>a</sup>, Akhmetshin, E.M.<sup>b</sup>, Okagbue, H.I.<sup>c</sup>, Laxmi Lydia, E.<sup>d</sup>, Shankar, K.<sup>e</sup>

**Digital economic challenges and economic growth in environmental revolution 4.0**

(2020) *Journal of Environmental Treatment Techniques*, 8 (1), pp. 546-550.

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<sup>c</sup> Covenant University, Ota, Nigeria

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**Abstract**

Nowadays, the world has transformed as an environmental revolution 4.0 eras. The revolution provides challenges and opportunities for future environmental development. In addition, digitalization, automation, and the use of artificial intelligence in economic activities will increase productivity and efficiency in modern production which also provides convenience and comfort for environmental issues. Digital technology also helps the development process in various fields including environmental improvements, ike global warming, acid rain, air pollution, urban sprawl, waste disposal, ozone layer depletion, water pollution, climate change and many more affect every human, animal and nation on this planet. In addition, the growth of various environmental activities and online-based buying and selling has not been accompanied by efforts to optimize state revenue and supervise tax compliance on these transactions. This is very important part, because digital transactions are cross country and it's an aid for environmental changes. © 2020, Dorma Journals. All rights reserved.

**Publisher:** Dorma Journals

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

60) Deepika, K.K.<sup>a b</sup>, Vijaya Kumar, J.<sup>c</sup>, Kesava Rao, G.<sup>a</sup>

**An improved control scheme of electric springs for voltage regulation in distribution systems with renewable energy sources**

(2020) *Journal of Advanced Research in Dynamical and Control Systems*, 12 (2), pp. 160-167.

**DOI:** 10.5373/JARDCS/V12I2/S202010018

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**Abstract**

Penetration of renewable energy sources in the distribution systems paved way to the development of smart load device, Electric Springs (ES) that makes voltage regulation more flexible. The voltage disturbances are caused due to the power electronic converters, solar irradiation and wind speed variations. This paper implements Radial Chordal Decomposition technique to stabilise the voltage profiles at the chosen six locations in the distribution system. Performance of Electric springs based on PI controller and RCD controller is compared and verified on a modified IEEE-15 distribution network. Demonstration of the results is carried out in MATLAB Simulink GUI environment. © 2020, Institute of Advanced Scientific Research, Inc. All rights reserved.

**Publisher:** Institute of Advanced Scientific Research, Inc.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

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**Developing region to reduce economic gap and to support large environment activities**

(2020) *Journal of Environmental Treatment Techniques*, 8 (1), pp. 540-545.

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**Abstract**

The Long Term Development Plan (RPJP) 2005-2025 emphasizes the establishment of a strong environment structure based on competitive advantage in various regions supported by quality and competitive human resources. To create high competitiveness in various regions, regional development approaches and strategies are not only about environment improvement, however, the equitable development in all regions and communities must be watched over. In 2020-2024, regional development is carried out through two main strategies, namely the growth strategy and the equalization strategy as reflected in the growth corridor approach and the island-based equal distribution corridor. The growth strategy is the transformation and acceleration of island and island development. The development focus is the important corridors on each island and archipelago that can drive significant growth in the next five years. The identification of growth corridors on each island and archipelago is carried out by considering the potential of its main economic bases outside Java. The environment bases that have been identified are natural resource processing centers, strategic tourism areas, service centers including metropolitan areas and new metropolitan supporting cities. In this main environment base, it is necessary to strengthen the facilities and infrastructure supply to support large environment activities, including transportation, electricity, communication tool, and infrastructure. © 2020, Dorma Journals. All rights reserved.

**Publisher:** Dorma Journals

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 62) Lydia, E.L.<sup>a</sup>, Satyanarayan, S.<sup>b</sup>, Kumar, K.V.<sup>c</sup>, Ramya, D.<sup>d</sup>

**Indexing documents with reliable indexing techniques using Apache Lucene in Hadoop**  
(2020) *International Journal of Intelligent Enterprise*, 7 (1-3), pp. 203-214.

**DOI:** 10.1504/IJIE.2020.104656

<sup>a</sup> Computer Science and Engineering, Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh, 530049, India

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**Abstract**

Mostly 85% of the data is presented in the form of text, which is the human-readable format. Present educational, business, medical organisations, etc. making use of big data analytics for storage of data and processing that stored data by using information retrieval. Often time's text documents have been transferred from one system to another system without any restrictions like, structured, unstructured and semi-structured data. Systems are well performed with high speed and less complexity only when it has all the data arranged in an orderly way. This paper describes how documents of text data are being Indexed using Apache Lucene with approaches in Hadoop. Most of the applications that deal with huge data over the internet are completely lacking. Use of effective analysis and techniques allow users in resulting high-performance and a challenging option in leading big data analytics. Copyright © 2020 Inderscience Enterprises Ltd.

**Publisher:** Inderscience Publishers

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**Publication Stage:** Final

**Source:** Scopus

- 63) Handini, S.<sup>a</sup>, Sukesi<sup>a</sup>, Baharuddin<sup>b</sup>, Paranoan, N.<sup>b</sup>, Lydia, E.L.<sup>c</sup>

**Effect of environment of workplace in the growth of an efficient business system**  
(2020) *Journal of Critical Reviews*, 7 (1), pp. 246-250.

**DOI:** 10.31838/jcr.07.01.44

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**Abstract**

Employee morale are often compact in each positive and negative ways that by the geographic point atmosphere. Geographic point atmosphere is role plays a serious within performance associate degree product of a worker. Most business have associate degree insecure geographic point atmosphere and most unhealthy time too. This paper is geographic point atmosphere is the targeted on during a clinic and the way it affects the medical expert. associate degree unsafe clinic atmosphere like unsuitable article of garniture, designed workstations, ventilation of lack, noise excessive, lighting inappropriate, poor supervisor, support to poor work house, support to communication poor, safety measures the poor hearth for emergencies, and thousands of non-public protecting instrumentation, will adversely have an effect on the creativeness of the worker. Health worker's creativeness and executions will less thanks to poorly arranged geographic point atmosphere as this contrarily affects their goals and should produce to poor stimulation and no stratification with their job as an output, the management challenges for the supply a secure atmosphere work for the staff to confirm efficiency, creativeness, health and sensible action. The link between the medical expert, work and also the geographic point atmosphere is incredibly important associate degree thus it becomes an undivided part of work itself. Personal Management, personal motivation and substructure of the worker the effort in guaranteeing a vigorous personnel ought to be targeted on worker atmosphere. © 2019 by Advance Scientific Research.

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Beside VSEZ, Duwada, Vadlapudi Post, Gajuwaka, Visakhapatnam - 530 049.

Reviews



## Documents

- 1) Bhattacharyya, D.<sup>a</sup>, Kumari, N.M.J.<sup>b</sup>, Joshua, E.S.N.<sup>c</sup>, Rao, N.T.<sup>c</sup>

**Advanced empirical studies on group governance of the novel corona virus, mers, sars and ebola: A systematic study**

(2020) *International Journal of Current Research and Review*, 12 (18), pp. 35-41.

DOI: 10.31782/IJCRR.2020.121828

<sup>a</sup> Department of Computer Science and Engineering, KoneruLakshmaiah Education Foundation, Guntur, Vaddeswaram, AP, India

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**Abstract**

Coronavirus condition (COVID-19) is a contagious illness brought on by a freshly discovered Coronavirus. Most individuals contaminated with the COVID-19 infection will certainly experience moderate to modest respiratory system health problems and recoup without needing unique therapy. Older people and those with underlying clinical problems like cardiovascular disease, diabetic issues, persistent respiratory conditions, and cancer are more likely to create a significant health problem. Aim and Objective: This paper gives the best way to prevent and reduce transmission is to be well educated about the COVID-19 infection, its causes, and its spread. Protect your own and others from infection by cleaning your hands or using an alcohol-based rub frequently and not touching your face. The COVID-19 infection spreads out primarily via beads of saliva or discharge from the nose when an infected person coughs or sneezes, so it is vital that you additionally exercise breathing rules (for instance, by coughing right into a flexed elbow joint). Right now, there are no detailed vaccinations or therapies for COVID-19. Nevertheless, there are several ongoing professional trials assessing capacity treatments. Method: The study aimed to develop a statistical model to predict how the cases are growing exponentially in various parts of the world. Even after starting from a low base, there is no proper statistical analysis of cases we can expect. It is an ambiguous thing that numbers of cases are exponentially increasing. We have analyzed the mortality rate, the number of deaths per country, and the number of recovery cases. Conclusion: By comparing the statistical analysis of confirmed cases vs. deaths within a short period, nCov-19 affected the most compared with Zoonotic viruses. The coronavirus disease remains to spread out throughout the globe, adhering to a trajectory that is challenging to predict. The health, altruistic, and socio-economic policies have taken on by nations will certainly figure out the rate and stamina of the healing. There has to be a global human-centred reaction that is based on solidarity. © IJCRR.

**Document Type:** Review

**Publication Stage:** Final

**Source:** Scopus

- 2) Mounika, B.<sup>a</sup>, Khadherbhi, S.R.<sup>b</sup>, Maddumala, V.R.<sup>b</sup>, Patibandla, R.S.M.L.<sup>c</sup>

**Data distribution method with text extraction from big data**

(2020) *Journal of Critical Reviews*, 7 (6), pp. 376-380.

DOI: 10.31838/jcr.07.06.66

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<sup>b</sup> Department of Information Technology, Vignan's Nirula Institute of Technology & Science for Women, Peda Palakaluru, Guntur, Andhra Pradesh, India

<sup>c</sup> Department of IT, Vignan's Foundation for Science, Technology & Research, Deemed to Be University, Vadlamudi, Guntur, Andhra Pradesh, India

**Abstract**

Right now, Enormous information extraction strategies incorporate the recognition of examples and secured connections

between factors numbering and acquire the necessary data. A quick examination of monstrous information can prompt the development and ideas of the hypothetical worth. Contrasted and comes about because of mining between customary informational indexes and the immense measure of huge heterogeneous information associated it can extend the information and thoughts regarding the objective space. Data isolating in immense data examination is creating as a helpful resource for outfitting the force of unstructured scholarly data by separating it to expel new data and to perceive essential models and connections concealed in the data. At present, we isolated the information on gigantic measures of the pages and examined the pages of the site using Java code, and we incorporated the removed information into a remarkable database for the site page. We utilized the information arrange capacity to get precise consequences of assessing and classifying the information pages discovered, which recognizes the believed web or unsafe site pages, and imported the information onto a CSV expansion. Large information emerges new difficulties for IE methods with the quick development of multifaceted likewise called multidimensional unstructured information. Conventional IE frameworks are wasteful to manage this tremendous downpour of unstructured large information. The volume and assortment of huge information request to improve the computational capacities of these IE frameworks. It is imperative to grasp the competency and limitations of the present IE methods related to data pre-taking care of, data extraction and change, and depictions for gigantic volumes of multidimensional unstructured data. Different assessments have been driven on IE, watching out for the challenges and issues for different data types, for instance, content, picture, sound, and video. © 2019 by Advance Scientific Research.

**Document Type:** Review

**Publication Stage:** Final

**Source:** Scopus

- 3) Pasala, S.<sup>a</sup>, Pavani, V.<sup>b</sup>, Lakshmi, G.V.<sup>b</sup>, Narayana, V.L.<sup>b</sup>

**Identification of attackers using blockchain transactions using cryptography methods**

(2020) *Journal of Critical Reviews*, 7 (6), pp. 368-375.

**DOI:** 10.31838/jcr.07.06.65

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<sup>b</sup> Department of Information Technology, Vignan's Nirula Institute of Technology & Science for Women, Peda Palakaluru, Guntur, Andhra Pradesh, India

**Abstract**

Blockchain is inventive approach to manage taking care of information, executing trades, performing limits, and working up trust in an open space. Many consider square chain as an advancement accomplishment for cryptography and digital security, with use cases going from comprehensive sent computerized cash structures like Bit-coin, to sharp understandings, insightful cross sections over the Internet of Things, and so forth. Regardless of the way that Blockchain has gotten creating interests in both academic network and industry in the progressing years, the security and insurance of Blockchains continue being at the point of convergence of the conversation while sending Blockchain in different applications. This paper presents a total layout of the security and insurance of Blockchain. To empower the discussion, we at first present the idea of Blockchains and its utility concerning Bit-coin like on the web trades. By then we portray the essential security properties that are maintained as the fundamental necessities what's more, building discourages for Bit-coin like advanced cash structures, trailed by presenting the additional security what's more, insurance properties that are needed in various Blockchain applications. Finally, we review the security and assurance systems for achieving these security properties in Blockchain-based structures, including delegate accord figuring's, has joined limit, mixing shows, puzzling imprints, non-instinctive zero-data check, and so on. We surmise that this investigation can help per clients with increasing an all-around perception of the security and assurance of Blockchain concerning thought, qualities, systems and structures. © 2019 by Advance Scientific Research.

**Document Type:** Review

**Publication Stage:** Final

**Source:** Scopus

- 4) Mounika, B.<sup>a</sup>, Anusha, P.<sup>b</sup>, Narayana, V.L.<sup>b</sup>, Lakshmi, G.V.<sup>b</sup>

**Use of block chain technology in providing security during data sharing**

(2020) *Journal of Critical Reviews*, 7 (6), pp. 338-343.

**DOI:** 10.31838/jcr.07.06.59

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**Abstract**

This article overviews a chain based methodologies for a few security administrations. The Existing framework is contrasted and the proposed framework and it was discovered that the proposed framework has preferred execution over the existing one. Square chain offers a creative way to deal with putting away data, executing exchanges, performing capacities, and building up trust in an open situation. Many consider the square chain as an innovative leap forward for cryptography and digital security. Square chain administrations incorporate verification, secrecy, security and access control list (ACL), information and asset provenance, and uprightness affirmation. Every one of these administrations is basic for the current appropriated applications, particularly because of the huge measure of information being handled over the systems and the utilization of distributed computing. Square chain method is furnished with validation, inspecting, and responsibility, and consequently, it can fill in as a promising instrument for giving secure information correspondence on the system. Validation guarantees that the client is who he/she professes to be. Privacy ensures that information can't be perused by unapproved clients. Protection gives the clients the capacity to control who can get to their information. Provenance permits an effective following of the information and assets alongside their proprietorship and usage over the system. Trustworthiness helps in checking that the information has not been changed or adjusted. These administrations are right now overseen by concentrated controllers, for instance, a declaration authority. Along these lines, the administrations are inclined to assaults on the incorporated controller. Then again, the square chain is made sure about and disseminated records that can help settle a large number of the issues with centralization. From a security viewpoint, the square chain is made and kept up utilizing a distributed overlay arrangement and made sure about through shrewd and decentralized use of cryptography with swarm processing. Block chain offers an imaginative way to deal with putting away data, executing exchanges, performing capacities, and setting up a trust in an open environment. Many consider the square chain as an innovative leap forward for cryptography and digital security, with use cases running from internationally conveyed digital money frameworks. A decentralized distributed storage arrangement has been presented with numerous favorable circumstances over the server farm based capacity. Comparable to conventional arrangement, decentralized distributed storage organize use customer side encryption to keep up information security. © 2019 by Advance Scientific Research.

**Document Type:** Review

**Publication Stage:** Final

**Source:** Scopus

- 5) Purnomo, B.R.<sup>a</sup>, Srifitriani, A.<sup>b</sup>, Shichiyakh, R.A.<sup>c</sup>, Lydia, E.L.<sup>d</sup>, Shankar, K.<sup>e</sup>

**The difference assumptions and views behind ecological and mainstream economics**

(2020) *Journal of Critical Reviews*, 7 (1), pp. 272-275.

**DOI:** 10.31838/jcr.07.01.49

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**Abstract**

The limited natural resource is a real challenge that can hinder the achievement of development targets. Holistic and integrated efforts from various sectors are needed to overcome the challenges of limited natural resources. In addition, the development planning needs to pay attention to balance the use of natural resources and the achievement of development targets and to pay attention to the direction of the spatial function in regional development. Economists are taught that long-term economic growth should be maximized. However ecologists and environmentalists believe we can have too much of a good thing. The models used by mainstream economists do not properly take into account a few details - such as melting iceberg, shrinking resource stocks, or the opinions on all this of future generations. In fact, the real credit crunch is not the one involving banks, but the one involving the environment. For centuries we have been depleting forests, oceans, fuel sources, and other species, and the bill is about to become due. Economists' cherished belief in economic growth is colliding with the reality that we are just one part of larger ecosystem. It explores new economic approaches that aim to resolve the conflict and bring our financial system into balance with the rest of the world. © 2019 by Advance Scientific Research.

**Document Type:** Review

**Publication Stage:** Final

**Source:** Scopus

- 6) Sari, W.P.<sup>a</sup>, Ratnadi, N.M.D.<sup>b</sup>, Lydia, E.L.<sup>c</sup>, Shankar, K.<sup>d</sup>, Wiflihani<sup>e</sup>

**Corporate social responsibility (CSR): Concept of the responsibility of the corporations**  
(2020) *Journal of Critical Reviews*, 7 (1), pp. 241-245.

**DOI:** 10.31838/jcr.07.01.43

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**Abstract**

A self-regulating business model that is use to help public, a company be socially accountable-to itself and its stakeholders is known as Corporate social responsibility (CSR). By rehearsing corporate social duty, additionally called corporate citizenship, organizations can be aware of the sort of effect they are having on all parts of society, adding environmental, economic, and social. To take part in corporate social responsibility implies that, in the standard course of business, an organization is working in manners that improve society and the earth, rather than contributing adversely to them. © 2019 by Advance Scientific Research.

**Document Type:** Review

**Publication Stage:** Final

**Source:** Scopus

- 7) Indrasari, M.<sup>a</sup> , Riyadi, S.<sup>a</sup> , Seraya, N.N.<sup>b</sup> , Lydia, E.L.<sup>c</sup> , Shankar, K.<sup>d</sup>

**Resource management and sustainable development: Great "macro" themes of the century**  
(2020) *Journal of Critical Reviews*, 7 (1), pp. 276-280.

**DOI:** 10.31838/jcr.07.01.50

<sup>a</sup> Department of Management, Universitas Dr Soetomo, Surabaya, Indonesia

<sup>b</sup> Kuban State Agrarian University named after I.T. Trubilin, Krasnodar, Russian Federation

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**Abstract**

In the recent year, the high level production is done in the production companies, the resource development like food and fuel have lot many crises for some countries. It is necessary to manage all such typical crises of resource make some changes in the vulnerable countries. Due to this crises a money issue is occurred in the countries, the need a climate modification. These term is conjointly make a reason for implementation of economic and social council in World. These may result to a primary corporation system for a mention and promising commitment they have given for effective and quality based production, also highlight the problems regarding themselves. In this paper a proper discussion and counseling is done on the view of resource management and sustainable development in the years. It is really a typical theory for a countries development and survival in the World. © 2019 by Advance Scientific Research.

**Document Type:** Review

**Publication Stage:** Final

**Source:** Scopus

- 8) Marsaid<sup>a</sup> , Jan, R.H.<sup>b</sup> , Huda, M.<sup>c</sup> , Lydia, E.L.<sup>d</sup> , Shankar, K.<sup>e</sup>

**Importance of data security in business management protection of company against security threats**  
(2020) *Journal of Critical Reviews*, 7 (1), pp. 251-256.

**DOI:** 10.31838/jcr.07.01.45

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#### Abstract

To run a business with success, knowledge security is crucial. It doesn't matter whether or not you're little startup or international conglomerate, knowledge Security will build or break a company. Yes, knowledge security essential for each enterprise, regardless of its size. During this digital world, businesses principally place confidence in knowledge storage and transactions to perform sure operations. Usage of knowledge has inflated business profitableness and potency. At an equivalent time, it additionally has potential security risks that would devastate a corporation. Companies square measure in control of the protection and confidentiality of its consumer knowledge and worker info. It's a tedious task that's changing into progressively troublesome as hackers return up with a sophisticated mechanism to evade safety and security measures. © 2019 by Advance Scientific Research.

**Document Type:** Review

**Publication Stage:** Final

**Source:** Scopus

- 9) Kartini, I.A.N.<sup>a</sup>, Huda, M.<sup>b</sup>, Maseleno, A.<sup>c</sup>, Lydia, E.L.<sup>d</sup>, Shankar, K.<sup>e</sup>

**Study of different types of customer experience competencies to drive growth of business organization**  
(2020) *Journal of Critical Reviews*, 7 (1), pp. 263-266.

**DOI:** 10.31838/jcr.07.01.47

<sup>a</sup> Economic and Business Faculty, Universitas 17 Agustus 1945, Surabaya, Indonesia

<sup>b</sup> Universiti Pendidikan Sultan Idris, Malaysia

<sup>c</sup> Political Science Association of Kasetsart University, Kasetsart University, Thailand

<sup>d</sup> Vignan's Institute of Information Technology(A), Department of Computer Science and Engineering, Visakhapatnam, Andhra Pradesh, India

<sup>e</sup> Department of Computer Applications, Alagappa University, India

#### Abstract

As a major aspect of an activity to make the experience of customer stick, into the organization for customer experience integration it need a phased and organized methodology. Around the globe with scores of customers on the basis of working, the REAL world methodology is used. At "customer experience" when the operation and company become proficient the structure will "demystify" the end state and activities that should be able to recognize. © 2019 by Advance Scientific Research.

**Document Type:** Review

**Publication Stage:** Final

**Source:** Scopus

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Conference Papers

## Documents

- 1) Vamseekrishna, A.<sup>a</sup>, Madhav, B.T.P.<sup>a</sup>, Rammohan, B.<sup>b</sup>, Tanna, R.<sup>c</sup>

**A novel reconfigurable G shaped patch antenna for wireless IoT applications using BAR64-02W PIN diode**  
(2020) *Journal of Physics: Conference Series*, 1706 (1), art. no. 012095, .

**DOI:** 10.1088/1742-6596/1706/1/012095

<sup>a</sup> Department of Electrical and Computer Engineering, Koneru Lakshmaiah Education Foundation, Vaddeswaram, 522502, India

<sup>b</sup> Department of E.C.E., Lendi Institute of Science and Technology, Jonnada, 535005, India

<sup>c</sup> Department of E.E.E., Vignan Institute of Information Technology, Duvvada, 530049, India

**Abstract**

In this paper, a novel reconfigurable antenna for wireless IoT operations is proposed. The antenna dimensions of 27.5 x 8 x 0.8 mm<sup>3</sup> and fabricated on the FR-4 dielectric substrate with a half ground plane. The designed antenna works in the frequency range of WiMAX, I.S.M. and X band (3.2-3.8 GHz, 5.2-6.9 GHz, and 7.1-10 GHz). The frequencies can be reconfigured by one P.I.N. diode BAR64-03W, and antenna attained the gain ranging of 2.84-3.26 dBi. The proposed antenna has bidirectional radiation at higher-frequency bands and unidirectional at lower frequency bands. The suggested frequency reconfigurable antenna has a radiation efficiency of 96.12% at 3.5 GHz and 94.34% at 5.9 GHz, 92.02% at 8.4 GHz in ON state. Antenna giving the best agreement between the measured and simulated results (C.S.T. Microwave Studio). © Published under licence by IOP Publishing Ltd.

**Publisher:** IOP Publishing Ltd

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 2) Roy, S.<sup>a</sup>, Guru, S.<sup>a</sup>, Debnath, S.<sup>b</sup>

**Design and Performance Analysis of Textile Antenna for Wearable Applications**

(2020) *International Conference on Advanced Communication Technologies and Signal Processing, ACTS 2020*, art. no. 9350489, .

**DOI:** 10.1109/ACTS49415.2020.9350489

<sup>a</sup> Vignan's Institute of Information Technology, Ece Department, Visakhapatnam, India

<sup>b</sup> Nit Silchar, Ece Department, Silchar, India

**Abstract**

A Textile antenna for wearable body applications is designed and analyzed in this article. The antenna is designed on low cost flexible Jean's substrate. The design and analysis of the antenna has been carried out with no slot, one slot and varying ground width. The proposed antenna is analyzed in bent conditions and human body model using electromagnetic simulator HFSS. The prototype of the antenna is fabricated manually using copper sheet and analyzed the result after placing it on various parts of the human body as well as on a cylindrical foam sheet. The measured results shown good agreement with simulated ones. © 2020 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 3) Reddi, Ch.V.S.N.<sup>a</sup> , Somi Naidu, B.<sup>b</sup>

**Construction of small twin reverberation chamber for measurement of sound transmission loss**  
(2020) *Proceedings of 2020 International Congress on Noise Control Engineering, INTER-NOISE 2020*, .

<sup>a</sup> Aditya Engineering College, Department of Mechanical Engineering, Surampalem, Andhra Pradesh, India

<sup>b</sup> Vignan's Institute of Information Technology, Dept. of Mechanical Engineering, Duvvada, Visakhapatnam, Andhra Pradesh, 530051, India

**Abstract**

Acoustics has become fundamental in daily life of human beings. The scope for noise control is growing there by for quieter ambience best sound absorbing material is needed. In order to develop market ready and efficient sound absorbing material, enormous amount of research is taking place among small and large industry suppliers. But, the testing set up for acoustic material property determination is not readily available and in majority of the cases it is distantly located and costlier. There is great deal of adequacy to build testing chambers with less space and cost. The present work is intended to build a low cost reverberation chamber for measurement of sound transmission loss coefficient (STC) at real time random noise atmosphere. The reverberation chamber consists of two small chambers namely source and receiver rooms with volume capacity of 5 m<sup>3</sup> and 6 m<sup>3</sup>. The base and ceiling of both the chambers are pentagonal in shape and are inclined to each other. All the walls of both chambers are constructed such a way that no two walls are parallel to each other and all are fully reflective. This is to ensure complete sound diffusivity inside both the chambers. The corners of the chambers are sealed with acoustic sealant and wall panels are separated using neoprene rubber sheets to avoid any air leaks. The chambers are isolated from the ground using nylon wheels to avoid ground vibration transmissions. The chambers are made up of teak wood frames and are treated with glass wool of density 50kg/m<sup>3</sup> and 50 mm thick and covered with plywood sheets which acts like walls. The outer layer of the plywood sheet is covered with fully reflective acrylic sheet. In order to ensure the correctness of measurements sound diffusivity measurement as per ASTM E90, Reverberation time measurement as per ASTM C423, Field transmission loss measurement as per ASTM E336 and flanking transmission loss measurement are performed. Measurement procedures of this small twin reverberation chamber adhere to ISO 10140-2:2010 and ISO 101420-4:2010. Samples of size 2' x 2' for various thickness can be tested. The sound transmission loss coefficient is determined as per ASTM E90 procedure. The results from the constructed reverberation chamber are verified with standard samples. © Proceedings of 2020 International Congress on Noise Control Engineering, INTER-NOISE 2020. All rights reserved.

**Publisher:** Korean Society of Noise and Vibration Engineering

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 4) Viswanath Mantha, S.R.<sup>a c</sup> , Joladarashi, S.<sup>a</sup> , Reddi, Ch.V.S.N.<sup>b</sup>

**Experimental investigation on performance of composite acoustic cement panel using recycled SMB waste**  
(2020) *Proceedings of 2020 International Congress on Noise Control Engineering, INTER-NOISE 2020*, .

<sup>a</sup> National Institute of Technology Karnataka, Dept. of Mechanical Engineering, Surathkal, Mangalore, 575025, India

<sup>b</sup> Aditya Engineering College, Dept. of Mechanical Engineering, Surampalem, Andhra Pradesh, 530051, India

<sup>c</sup> Vignan's Institute of Information Technology, Dept. of Mechanical Engineering, Duvvada, Visakhapatnam, Andhra Pradesh, 530046, India

**Abstract**

Recycling of E-waste is most viable and sustainable solution for handling environmental pollution which is a major requirement. Surface mounted boards (SMB) comprises of various materials such as Metals and Nonmetals. These boards are considered for E-waste study and this waste after crushing and sieving is used as a partial replacement of sand in cement and fly ash brick manufacturing. In which, sieved surface mounted boards waste in different percentages ranging from 0%,5%,10%,20% & 25% is used as replacement of sand. Along with these, 3% polypropylene is also used to enhance the compressive strength by maintaining mixture ratio of 1:3 (cement: sand). Compressive strength after 28 days is measured and noticed that addition of 3% polypropylene resulted in increase of compressive strength in the compositions of 0% & 5% SMB sieve but in later compositions its effect is not much seen. Sound absorption coefficient is measured for these samples using two microphone impedance tube test-setup with plane wave excitation as per ISO 10534:2 to determine acoustics properties. © Proceedings of 2020 International Congress on Noise Control Engineering, INTER-NOISE 2020. All rights reserved.

**Publisher:** Korean Society of Noise and Vibration Engineering



**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 5) Somi Naidu, B.<sup>a</sup>, Pitchaimani, J.<sup>a</sup>, Reddi Chintapalli, V.S.N.<sup>b</sup>, Somi Naidu, B.<sup>c</sup>

**Comparative study on sound absorption coefficient of various jute composite materials**

(2020) *Proceedings of 2020 International Congress on Noise Control Engineering, INTER-NOISE 2020*, .

<sup>a</sup> Department of Mechanical Engineering, National Institute of Technology Karnataka, Surathkal, Mangalore, Karnataka, 575 025, India

<sup>b</sup> Department of Mechanical Engineering, Aditya Engineering College, Surampalem, Kakinada, Andhra Pradesh, 530051, India

<sup>c</sup> Department of Mechanical Engineering, Vignan's Institute of Information Technology, Duvvada, Visakhapatnam, Andhra Pradesh, 530051, India

**Abstract**

Natural fibre composites are getting attention in noise reduction applications replacing conventional materials. They are being used in passive noise control in which jute is showing its prominence. Though conventional sound absorbing materials are used for passive control, they can be replaced by natural fibres as they are abundantly available and are inexpensive. The present work is to test samples prepared from various jute materials with epoxy resin as bonding agent. Jute materials used for study are jute mats 190GSM, 420GSM and felt woven jute composites. Plain jute mat samples are designated as JM composites and samples prepared in combination of jute mat and felt woven jute are designated as JMW. The sound absorbing coefficient study is carried out experimentally using two microphone impedance tube test setup as per ISO 10534-2. Sound absorption coefficient comparative studies are carried out on perforated and sandwiched samples with air gap. It is observed that layered felt woven jute composites are having higher sound absorption coefficient than jute mat composites when several combinations of these are analyzed. This might be due to felt woven jute composites are having lesser density. Maximum noise reduction coefficient of 0.97 at 1250 Hz and 0.96 at 622 Hz in 1/3rd octave frequency band is obtained for 190GSM and 420GSM layered felt woven jute composites respectively. Maximum noise reduction coefficient of 0.93 at 922 Hz is recorded for 190GSM mat and felt oven jute composite samples with 20 mm thickness and 10 mm air gap. A comparative study is carried out between jute composites and glass wool fibre with 50 mm thick. It is observed that 420GSM samples are having better sound absorption properties than 190GSM sample in low frequency band because of better bonding capabilities. © Proceedings of 2020 International Congress on Noise Control Engineering, INTER-NOISE 2020. All rights reserved.

**Publisher:** Korean Society of Noise and Vibration Engineering

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 6) Reddi, C.V.S.N.<sup>a</sup>, Anusha, P.<sup>b</sup>

**Enhancing noise control in an acoustic cavity using mis-tuned embedded Resonators and Quarter wave tubes**

(2020) *Proceedings of 2020 International Congress on Noise Control Engineering, INTER-NOISE 2020*, .

<sup>a</sup> Aditya Engineering College (Autonomous), Department of Mechanical Engineering, Surampalem Kakinada, India

<sup>b</sup> Vignan's Institute of Information Technology (Autonomous, Department of Mechanical Engineering, Visakhapatnam, India

**Abstract**

Helmholtz resonators (HRs) and Quarter wave tubes are used in acoustic cavities for low frequency noise reduction. The focus of this paper is to enhance the noise control inside an acoustic cavity using mis-tuned resonators and quarter wave tubes. A non-parallel pentagonal room with rigid wall boundary is considered as acoustic cavity. The acoustic cavity mode frequencies and detuned modes of the resonator and quarter wave tube are calculated using 3D finite element method using commercial software ANSYS [12]. The analysis is carried out by coupling each of the resonators and Quarterwave tubes to fundamental cavity mode and its split mode, higher order modes of acoustic cavity and their split modes. Similarly, to higher amplitude modes and their split modes. Later, through experimentation a combination of resonators and tubes tuned to low and medium frequencies are embedded in polyurethane foam and are analysed by coupling to the acoustic cavity. The results shows that the amount of noise reduction inside the coupled acoustic cavity is more when multiple resonators and quarter wave tubes which are tuned to various higher amplitude modes of cavity and their split modes. The analysis also shows the amount of noise reduction inside acoustic cavity depends on the coupling of several of these

components tuned to various higher amplitude cavity and split mode frequencies. This study provided a solution to the suppression of split mode frequencies, an unwanted noise that is generated in resonator coupling. Numerical results are verified over various cavity geometries and amount of noise reduced is determined using experiments. © Proceedings of 2020 International Congress on Noise Control Engineering, INTER-NOISE 2020. All rights reserved.

**Publisher:** Korean Society of Noise and Vibration Engineering

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

7) Suresh, K.<sup>a</sup>, Shobalatha, G.<sup>b</sup>, Devi, K.M.<sup>c</sup>

**Structure of ordered semimodules**

(2020) *AIP Conference Proceedings*, 2246, art. no. 020071, .

**DOI:** 10.1063/5.0014666

<sup>a</sup> Dept. of Mathematics, Sree Venkateswara College of Engineering, Nellore, A P, India

<sup>b</sup> Dept. of Mathematics, Sri Krishnadevaraya University, Anantapur. A P, India

<sup>c</sup> Dept. of Mathematics, Vignan Institute of Information Technology (Autonomous), Duvvada, Vishakapatnam, A. P, India

**Abstract**

In this paper the authors studied ordered algebraic structures (semimodules) which generalize rings, fields, modules and vector spaces as known from the theory of Algebra. Additionally these structures will be ordered and will satisfy monotonicity conditions similar to the case of ordered semigroups. In this paper we discuss the following results. (1) A linearly ordered integral domain  $R$  can be embedded in a linearly ordered field. (2) Let  $H$  be an ordered semimodule over  $R$ . (a) If  $H$  is a group then  $x \leq y \iff x \square c \leq y \square c$  for all  $x, y \in R$  and  $c \in H$ , implies  $x \square d \geq y \square d$  for  $d \in H$  and  $d \leq e$  ( $d \in H$ ). (b) If  $R$  is a ring then  $a \leq b \iff a \leq r \square b$  for all  $a, b$  and  $r \in R$  implies  $s \square a \geq s \square b$  for all  $a, b \in H$  and  $s \in R$ . (c) If  $R$  is the positive cone of a linearly ordered ring  $R$  and  $H$  is the positive cone of a linearly ordered group  $H$  then the external composition can be continued (extended) in a unique way on  $R \times H$  such that  $H$  is a linearly ordered module over  $R$ . In fact result (1) is useful in the study of Algebraic path problems [2]. © 2020 Author(s).

**Publisher:** American Institute of Physics Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

8) Kamma, T.K.<sup>a</sup>, Shankar, N.V.S.<sup>a</sup>, Jajimogala, S.<sup>b</sup>, Rama Krishna, S.<sup>a</sup>, Shabana<sup>b</sup>

**A case study of service firm to optimize the cycle time – advanced lean techniques to design plant layout**

(2020) *Proceedings of the International Conference on Industrial Engineering and Operations Management*, 59, pp. 1609-1634.

<sup>a</sup> Department of Mechanical Engineering, Vignan Institute of information Technology, Duvvada, Visakhapatnam, 17, India

<sup>b</sup> Department of Mechanical Engineering GITAM, Rushikonda, Visakhapatnam, 45, India

**Abstract**

Plant layout and design plays a very important role in the design and engineering phases of any industrial facility. Implementation of lean manufacturing principles and believing in continuous improvement are the tools which help industries to sustain global competition. With the escalation in population, the demand for technology is increased more than ever. This leads to the steady increase in production rates of existing models and even introduction of new product models. These factors often results in "layout modification" of manufacturing industries. This study simplifies the application of systematic layout planning in the development of new layout. It is a technique used for layout development and material flow improvement. The results include five possible rearrangements of production departments. These layout alternatives are evaluated on basis of improved accessibility and material flow efficiency criteria. Hence in order to study and modify a service sector plant (Zonal Workshop APSRTC Vizianagaram) has been chosen to carry out the project further. The main aim of study is to understand operations performed with respect to time taken in their assigned station in order to reduce the overall transportation time by either combining different operations, removing machining errors or removing idle stations to reduce the cycle time as well as man power involved. The process improvement activity achievement not only depends on the redesign of the layout but also involves operators' utilization and their position arrangement. The relation between them was computed by taking the man power occupancy on machinery calculations, minimized idling time and changing the work

sequence. This study adopts a multifarious approach combining manpower occupancy on machinery, lean manufacturing line balancing and layout improvement in productivity on the product. A comprehensive methodology is adapted to systematically investigate and analyzes the current situation of wastes elimination of the manufacturing firms. This is followed by waste identification (MUDA) and elimination of unnecessary resources to balance the line and optimize the cycle time and promote lean thinking © IEOM Society International.

**Publisher:** IEOM Society

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 9) Yellareswara Rao, K.<sup>a</sup>, Narasimham, S.<sup>a</sup>, Narayan, K.<sup>b</sup>, Mohan Rao, G.<sup>c</sup>

**Investigations on sputter deposited lithium nickel manganese oxide thin film cathodes for micro battery applications**

(2020) *Materials Today: Proceedings*, 40, pp. S28-S34.

**DOI:** 10.1016/j.matpr.2020.03.255

<sup>a</sup> Dept. of Physics, Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh 530049, India

<sup>b</sup> Dept. of Electronics and Communication Engineering, Sai Vidya Institute of Technology, Bangalore, Karnataka 560064, India

<sup>c</sup> Dept of Instrumentation and Applied Physics, Indian Institute of Science, Bangalore, 560012, India

**Abstract**

Lithium manganese oxide thin films have been deposited on nickel (Ni) and platinum (Pt) coated stainless steel substrates at room temperature using powder target by Radio Frequency (rf) reactive magnetron sputtering. The samples are exposed to heat treatment at 500 °C to form crystalline phase. Nickel and platinum thin film coatings have been carried out using direct current (DC) sputtering. X-ray diffraction (XRD), X-ray photoelectron spectroscopy (XPS), scanning electron microscopy (SEM) and electrochemical characterizations have been carried out. XPS spectra indicate the presence of all elements present in the powder target. A discharge capacity of 54 mAh mm<sup>-1</sup> cm<sup>-2</sup> and 48 mAh mm<sup>-1</sup> cm<sup>-2</sup> has been obtained from charge discharge studies in the potential range 2.0 to 4.4 V for the thin film samples deposited on Ni and Pt coated SS substrates correspondingly Charge discharge cycles are conducted up to 40 cycles. © 2020 The Authors. Published by Elsevier Ltd.

**Publisher:** Elsevier Ltd

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 10) Priyanka, M.L.L., Padmakar, M., Barhmaiah, B.

**Establishing the need for rural road development using QGIS and its estimation**

(2020) *Materials Today: Proceedings*, 37 (Part 2), pp. 2228-2232.

**DOI:** 10.1016/j.matpr.2020.07.658

Department of Civil Engineering, Vignan's Institute of Information and Technology(A), Duvvada, Visakhapatnam, AP, 530049, India

**Abstract**

Advancement of provincial streets brings various financial advantages to the rustic regions which structure a solid base of the National economy and it is a ground-breaking instrument for the financial change of the towns. Attention to these advantages and their assessment assumes a significant job in giving every single climate street. The rapidly obvious advantages increment portability, builds efficiency, spares the expense of transportation of men and material and speed stream of products also, changes in the way of life. A portion of the noteworthy advantages and factors for their assessment are introduced in this paper using QGIS and Google Earth. In this study, three connectivity's (Elluppi-Marripalem, Elluppi-Gullepalle, and Kollivanipalem-Cheepurupalli) are selected based on population, traffic flow, additional features such as industries, agricultural fields, artworks etc. Shortest routes for proposed connectivity's were found by collecting data through Google Earth, georeferencing and digitization are carried in QGIS. Estimation for the bituminous road is performed for the proposed route. © 2020 Elsevier Ltd. All rights reserved.

**Publisher:** Elsevier Ltd

**Document Type:** Conference Paper  
**Publication Stage:** Final  
**Source:** Scopus

11) Barhmaiah, B., Priyanka, M.L., Padmakar, M.

**Strength analysis and validation of recycled aggregate concrete**  
(2020) *Materials Today: Proceedings*, 37 (Part 2), pp. 2312-2317.

**DOI:** 10.1016/j.matpr.2020.07.730

Vignan's Institute of Information Technology, Civil Eng. Dept., JNTUK, India

**Abstract**

This study investigates the effect of recycled aggregate on strength of concrete and the results were compared with virgin aggregate concrete (VAC). The recycled aggregate were collected from many demolished buildings nearby Duvvada in Visakhapatnam city, and laboratory tests was conducted to know the properties of recycle aggregates (RA) and virgin aggregate (VA). From the previous researchers, strength variations observed that approximately at every 25% replacement of RA. So in this study analyse the strength of concrete mixes, at the w/c ratio and mix proportion (i.e. M-30 and M-20) were kept constant at different proportion of RA. Compressive strength (CS) of Recycled Aggregate Concrete (RAC) determined at the age of 3, 7, 14 and 28 days and the flexural strength (FS) conducted at 7 and 28 days. For each grade of concrete five mixes were produced with varying percentage of RA (0%, 25%, 50%, 75%, and 100%). Further strength analysis was continued on M20 grade, by replacing the fly ash with binder at the 50% replacement of RA. Because 0 to 50% replacement of RA % did not have a significant effect on CS, further increment of RA (i.e. 75%) the mixes are not reached the target strength. The strength reduction obtained, 40.81% and 41.20% for both the grades M-20 and M-30 respectively. Only 13% FS reduction was obtained as compared to VAC, so it is considerable. From the results of fly ash concrete observed that up to 25% replacement fly ash didn't get any significant effect on compressive strength. © 2020 Elsevier Ltd. All rights reserved.

**Publisher:** Elsevier Ltd

**Document Type:** Conference Paper  
**Publication Stage:** Final  
**Source:** Scopus

12) Kalla, J., Karri, S., Sathi, K.V.

**Experimental analysis on modulus of elasticity of slag based concrete**  
(2020) *Materials Today: Proceedings*, 37 (Part 2), pp. 2114-2120.

**DOI:** 10.1016/j.matpr.2020.07.537

Department of Civil Engineering, Vignan's Institute of Information Technology(A), Beside VSEZ, Duvvada, Visakhapatnam, Andhra Pradesh, 530049, India

**Abstract**

Based on present scenario construction industries adopt so many problems directly, the problem is mainly due to release of carbon dioxide in atmosphere, how to rectify this problem, researchers are doing research regarding this particular issue only, so many researchers are found that replacement of OPC as industrial waste gives the more eco-friendly. Industrial wastes like GGBS, Fly ash, etc. based on the laboratory work industrial waste like GGBS in concrete without any cement is getting the required strength after adding 3% lime in place of cement and that too with stone dust not with sand due to high silica content. This concrete is getting the target mean strength after 90 days of curing. At 50% replacement of sand with stone dust shows better results than other proportions. This concrete is not that much workable when compared with conventional concrete as silica content more in this. This concrete absorbs more water as it is full of waste material; this is the main reason for not getting required workability. Elastic behavior is also good for this concrete and that too more at 50% stone dust. Elastic behavior of this slag based concrete depends upon proportion of stone dust as FA in this concrete. Modulus of elasticity of this concrete decrease with decrease of stone dust content in the concrete. © 2020 Elsevier Ltd. All rights reserved.

**Publisher:** Elsevier Ltd

**Document Type:** Conference Paper  
**Publication Stage:** Final

**Source:** Scopus

- 13) George, R.<sup>a</sup>, Patel, I.B.<sup>b</sup>, Rathod, K.T.<sup>c</sup>

**Growth and photoluminescence study of nickel sulfate doped Zinc tris-Thiourea Sulfate (ZTS) crystal**  
(2020) *Materials Today: Proceedings*, 37 (Part 2), pp. 2189-2192.

**DOI:** 10.1016/j.matpr.2020.07.649

<sup>a</sup> Vignan's Institute of Information Technology, Duvvada, Viskhapatnam, India

<sup>b</sup> Department Of Physics, South Gujarat University, Surat, Gujarat, 395007, India

<sup>c</sup> Department of Physics, Veer Narmad South Gujarat University, Surat, Gujarat, 395007, India

**Abstract**

Nickel sulfate doped Zinc tris-Thiourea Sulfate (ZTS) crystal is one of the non linear optical crystals which were successfully grown by applying gel technique. The morphological alteration is observed due to the effect of dopant in the doped crystal. The elemental identification was verified using EDAX test. The orthorhombic structure of the dopd crystal was confirmed using powder XRD analysis. The functional groups of Nickel sulfate doped ZTS crystals were observed and recorded by FT IR analysis. The presence of functional groups like as = C-H bend, C-N stretch, C-O stretch, C-C stretch, C-C stretch, N-H wag, N-O asymmetric stretch, N-H bend, O-H stretch, N-H stretch etc. were revealed by FTIR analysis. The mechanical strength was assessed in terms of hardness using Vickers hardness measurement. The doped crystal was found to hard material due to theeffect of dopant. The excitation spectra and the emission spectra were obtained by Photoluminescence study which was carried out to know the nature of crystal as it possesses insulating nature. The SHG efficiency was significantly enhanced due to doping as confirmed implied by the test with Kurtz-Perry method using Nd: YAG laser. © 2020 Elsevier Ltd. All rights reserved.

**Publisher:** Elsevier Ltd

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 14) Vijaya, S.K., Jagadeeswari, K., Srinivas, K.

**Behaviour of M60 grade concrete by partial replacement of cement with fly ash, rice husk ash and silica fume**  
(2020) *Materials Today: Proceedings*, 37 (Part 2), pp. 2104-2108.

**DOI:** 10.1016/j.matpr.2020.07.523

Department of Civil Engineering, Vignan Institute of Information Technology, Visakhapatnam, Andhra Pradesh, 530049, India

**Abstract**

Presently a-days with a quick populace development and a more appeal for lodging and foundation, joined by late advancements in structural designing, for example, elevated structures and long-range spans, higher compressive quality cement was required. As the foremost crude material in concrete is concrete which radiates CO<sub>2</sub> during its creation some customary materials are utilized to decrease the utilization of concrete. In this examination, impacts of mineral admixtures on flexural quality and compressive quality of cements containing silica smolder (SF), fly debris (FA) and rice husk ash (RHA) were tentatively explored. The current work centers around M60 grade concrete with halfway substitution of concrete utilizing fly debris, rice husk debris and silica seethe (FA + RHA + SF = 30%) for three unique proportions i.e., FA:RHA:SF = 20:05:05, FA:RHA:SF = 18:06:06, FA:RHA:SF = 16:07:07. The real water concrete proportion utilized in blend structure for M60 grade concrete is 0.29 for 50 mm to 75 mm droop. The solid shapes and shafts are casted and tried for compressive quality and flexural quality separately at 7 years old days and 28 days. © 2020 Elsevier Ltd. All rights reserved.

**Publisher:** Elsevier Ltd

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 15) Padmakar, M., Barhmaiah, B., Priyanka, M.L.

**Characteristic compressive strength of a geo polymer concrete**

(2020) *Materials Today: Proceedings*, 37 (Part 2), pp. 2219-2222.

**DOI:** 10.1016/j.matpr.2020.07.656

Department of Civil Engineering, Vignan's Institute of Information Technology (A), Duvvada, Visakhapatnam, AP, 530049, India

**Abstract**

The principle issue the world confronting today is natural contamination. Because of industrialization, there is tremendous discharge of ozone harming substances (for example CO<sub>2</sub>) into condition. We can diminish the impact of contamination on the earth by expanding the use of modern results. There comes the idea "GEO POLYMERS CONCERTERTE". In this entire cement content is swapped with engineering by products. We are replacing with Ground Granulated Blast-furnace Slag (GGBS), silica fumes & gypsum. Alkaline liquid like NaOH & Na<sub>2</sub>SiO<sub>3</sub> are used for binding of materials. On an experimental basis we selected the proportions 1:1.5:3 and 1:1:2 and we are considering 9 M and 13 M of NaOH and 20% and 40% concentration of Na<sub>2</sub>SiO<sub>3</sub>. This examination researches the trademark compressive quality of geopolymer concrete by throwing solid shapes and chambers and discovering the trademark compressive qualities at 28 days utilizing encompassing relieving. We are replacing entire cement content with GGBS (70%) and silica fumes (30%). From the outcomes we see that trademark compressive superiority of Geopolymer dense additions with the development in sodium silicate fixation and most extreme happened at 40% of Na<sub>2</sub>SiO<sub>3</sub> and the announcement "compressive strength of cylinder is 0.8 times the compressive strength of cube" is not valid for geopolymer concrete. We also found that geo-polymerization process is sensitive with temperature. © 2020 Elsevier Ltd. All rights reserved.

**Publisher:** Elsevier Ltd

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

16) Srinivas, K., Vijaya, S.K., Jagadeeswari, K.

**Concrete with ceramic and granite waste as coarse aggregate**

(2020) *Materials Today: Proceedings*, 37 (Part 2), pp. 2089-2092.

**DOI:** 10.1016/j.matpr.2020.07.521

Civil Engineering Department, Vignan's Institute of Information Technology, India

**Abstract**

Foundation improvement over the world makes interest for development material. The issue emerging from consistent mechanical modern improvement is the transfer of waste material, the crude material of solid comprises of concrete, sand and pulverized total. Incomplete substitution or full substitution of this crude material by squander items may diminish the cost decreased the vitality utilization and furthermore lessen the natural contamination. The primary goal of the examinations is to empower the utilization of waste item as development material in practical way. A referral M-25 solid blend was utilized in the present examination. Absolutely 42 solid shapes have been threw, and tried their compressive quality. The physical and mechanical properties of the material utilized in concrete were explored. In this investigation the halfway swap has been completed for the coarse total by artistic and stone waste. An endeavor was made to halfway supplant the coarse total by clay and stone waste (6%, 12%, 18%, 24%, 30%, 36%). for every substitution. 6 referral solid blocks were threw for estimating 7 and 28 days compressive quality. The after effect of supplanted concrete is contrasted and the referral concrete. © 2020 Elsevier Ltd. All rights reserved.

**Publisher:** Elsevier Ltd

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

17) Thammana, A.<sup>a</sup>, Sampath Dakshina Murthy, A.<sup>a</sup>, Usha Kumari, Ch.<sup>b</sup>, Kishore, P.<sup>c</sup>

**Performance analysis of OFDM and FBMC over selective channels**

(2020) *Materials Today: Proceedings*, 33, pp. 4237-4242.

**DOI:** 10.1016/j.matpr.2020.07.348

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<sup>b</sup> Gokaraju Rangaraju Institute of Engineering and Technology, Hyderabad, India

<sup>c</sup> VNR Vignana Jyothi Institute of Engineering and Technology, Hyderabad, India

### Abstract

Compared to OFDM, FBMC is the modulation technique that has enhanced spectral characteristics. To support higher data rates over the time and frequency selective channels FBMC plays a crucial role compared to OFDM. Simulation results shows that over flat fading channel, there is no significant changes between OFDM and FBMC, where as in frequency selective and time selective channels. FBMC shows superior performance improvement over Conventional OFDM system. © 2019 Elsevier Ltd. All rights reserved. Selection and peer-review under responsibility of the scientific committee of the International Conference on Nanotechnology: Ideas, Innovation and Industries.

**Publisher:** Elsevier Ltd

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 18) Aakash, B.E.S.S.<sup>a</sup>, Reddy, D.M.<sup>b</sup>, Ramachandran, B.<sup>c</sup>, Abhishikt, C.B.N.S.<sup>d</sup>

### Design and analysis of roll cage chassis

(2020) *Materials Today: Proceedings*, 33, pp. 4450-4457.

**DOI:** 10.1016/j.matpr.2020.07.709

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### Abstract

Despite tremendous advancements in the province of automotive, there has never been a fallback striving to enhance contemporary technology. genuinely seek fulfillment within accessible excellence. Chassis plays the pre-eminent role of a skeleton in an automobile, though the current design of chassis is fully functional, it does not mean that it cannot be enhanced. In this context, the paper proposes a unique ATV chassis design that outsmarting the limitations of the current design. The paper converges on the new design of the roll cage chassis without altering its actual performance and functionality by performing impact and torsional tests to ensure the design is entirely safe. The roll cage is designed in CATIA, and simulation is performed in ANSYS. Two different materials are taken into consideration to run comparative analysis, and the material that renders assuring optimized results is decided to serve the purpose of fabrication. The design stands undeniably in favor of the concrete results predicted. Further studies can be made to add superiority to these outcomes. © 2019 Elsevier Ltd. All rights reserved. Selection and peer-review under responsibility of the scientific committee of the International Conference on Nanotechnology: Ideas, Innovation and Industries.

**Publisher:** Elsevier Ltd

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 19) Krishna Monika, M.<sup>a</sup>, Arun Vignesh, N.<sup>a</sup>, Usha Kumari, Ch.<sup>a</sup>, Kumar, M.N.V.S.S.<sup>b</sup>, Laxmi Lydia, E.<sup>c</sup>

### Skin cancer detection and classification using machine learning

(2020) *Materials Today: Proceedings*, 33, pp. 4266-4270.

**DOI:** 10.1016/j.matpr.2020.07.366

<sup>a</sup> Gokaraju Rangaraju Institute of Engineering and Technology, Hyderabad, India

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### Abstract

Skin cancer is considered as one of the most dangerous types of cancers and there is a drastic increase in the rate of deaths due to lack of knowledge on the symptoms and their prevention. Thus, early detection at premature stage is

necessary so that one can prevent the spreading of cancer. Skin cancer is further divided into various types out of which the most hazardous ones are Melanoma, Basal cell carcinoma and Squamous cell carcinoma. This project is about detection and classification of various types of skin cancer using machine learning and image processing tools. In the pre-processing stage, dermoscopic images are considered as input. Dull razor method is used to remove all the unwanted hair particles on the skin lesion, then Gaussian filter is used for image smoothing. For noise filtering and to preserve the edges of the lesion, Median filter is used. Since color is an important feature in analyzing the type of cancer, color-based k-means clustering is performed in segmentation phase. The statistical and texture feature extraction is implemented using Asymmetry, Border, Color, Diameter, (ABCD) and Gray Level Co-occurrence Matrix (GLCM). The experimental analysis is conducted on ISIC 2019 Challenge dataset consisting of 8 different types of dermoscopic images. For classification purpose, Multi-class Support Vector Machine (MSVM) was implemented and the accuracy obtained is about 96.25. © 2019 Elsevier Ltd. All rights reserved. Selection and peer-review under responsibility of the scientific committee of the International Conference on Nanotechnology: Ideas, Innovation and Industries.

**Publisher:** Elsevier Ltd

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 20) Usha Kumari, Ch.<sup>a</sup>, Laxmi Lydia, E.<sup>b</sup>, Sampath Dakshina Murthy, A.<sup>b</sup>, Kumar, M.N.V.S.S.<sup>c</sup>

**Designing of wireless sensor nodes for providing good quality drinking water to the public**

(2020) *Materials Today: Proceedings*, 33, pp. 4250-4254.

**DOI:** 10.1016/j.matpr.2020.07.352

<sup>a</sup> Gokaraju Rangaraju Institute of Engineering and Technology, Hyderabad, India

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**Abstract**

Industrialization and urbanization in India have caused heavy environmental pollution. Most of the surface water had been polluted due to the environmental influence. Providing better quality drinking water to public is also a challenge due to pollution in the ground water and contamination even during distribution. Thus, it is very necessary to have adequate methods and equipment for water protection and drinking water quality measurement is an important aspect for the purpose. The protection of public health is an imperative and the potential of millions of severe effects from water contamination is not unrealistic. There is a need of In-situ monitoring, instant collection and calibration of data rather than manual collection of samples and testing. Wireless Sensor Network (WSN) has paved its significance into various applications. Although manual monitoring of water quality has been done, it requires a lot of labor, time and equipment. So, there is a need to develop a robust and reliable smart system where a real time monitoring of parameters of water quality for different water distribution tanks is done all the while. In this paper, Water Quality Monitoring (WQM) in a predefined Wireless Sensor zone using Zigbee Technology is implemented. Water Quality can be accessed in practical systems through the sensors which send the water quality data to the base station. Now a days, Renewable energy power generation is playing a main role in which Solar power is widely used. Maximum Power Point Tracking (MPPT) Controller improves the efficiency of Solar Power System. In this paper, a flexible, reliable Wireless Sensor Network (WSN) based method of monitoring the quality of water with maximum power point tracking controlled solar PV system is developed. © 2019 Elsevier Ltd. All rights reserved. Selection and peer-review under responsibility of the scientific committee of the International Conference on Nanotechnology: Ideas, Innovation and Industries.

**Publisher:** Elsevier Ltd

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 21) Sampath Dakshina Murthy, A.<sup>a</sup>, Karthikeyan, T.<sup>b</sup>, Omkar Lakshmi Jagan, B.<sup>c</sup>, Usha Kumari, Ch.<sup>d</sup>

**Novel deep neural network for individual re recognizing physically disabled individuals**

(2020) *Materials Today: Proceedings*, 33, pp. 4323-4328.

**DOI:** 10.1016/j.matpr.2020.07.447

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<sup>c</sup> Research Scholar, Department of EEE, KLEF, Vaddeswaram, Guntur, Andhra Pradesh, India

<sup>d</sup> Department of ECE, Gokaraju Rangaraju Institute of Engineering and Technology, Hyderabad, India

### Abstract

The MLF-CNN includes a proposition production phase and also a diagnosis stage. In the first stage, they develop an MLF area proposal system and also pop the question to utilize a summation fusion strategy for integration of the two convolution layers. Intelligent video-surveillance is currently an active research industry in pc sight as well as artificial intelligence techniques. It delivers helpful resources for monitoring operators and forensic video private detectives. Individual re-identification (PReID) is one with these tools. Several approaches have been proposed to raise the functionality of PReID. One of the systems, a lot of scientists, made use of deep semantic networks (DNNs) as a result of their far better efficiency and fast completion at exam opportunity. Our objective is to offer potential researchers the job being done on PReID today. © 2019 Elsevier Ltd. All rights reserved. Selection and peer-review under responsibility of the scientific committee of the International Conference on Nanotechnology: Ideas, Innovation and Industries.

**Publisher:** Elsevier Ltd

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 22) Narasimha Raju, K.<sup>a</sup>, Satish Kumar, B.<sup>a</sup>, Hima Bindu, G.<sup>b</sup>, Sharma, S.K.<sup>b</sup>

### Performance Analysis of DYMO and LAR in Grid and Random Environments

(2020) *Advances in Intelligent Systems and Computing*, 1076, pp. 255-268.

**DOI:** 10.1007/978-981-15-0947-6\_25

<sup>a</sup> Department of CSE, Lendi Institute of Engineering & Technology, Vizianagaram, India

<sup>b</sup> Department of MCA, Vignan's Institute of Information Technology, Visakhapatnam, India

### Abstract

The network formed randomly with moving wireless links in MANETs. Establishing routes to deliver the packets in this kind of network is really a difficult task due to different deployment patterns and mobility of the nodes. The analysis of the protocols helps to test its suitability due to cost aspect before deploying the network in real time. In this paper, the two popular protocols namely DYMO and LAR are analyzed in grid and random environments. Qualnet simulator is used to conduct the experiments. The result states that each protocol has its significance depending on the situation. © Springer Nature Singapore Pte Ltd. 2020.

**Publisher:** Springer

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 23) Sravan Kumar, B.<sup>a</sup>, Uma Maheswari, R.<sup>b</sup>, Sateesh, B.<sup>b</sup>, Venkateswara Rao, B.<sup>c</sup>, Nagesh Kumar, G.V.<sup>d</sup>

### Contingency Management of a Power System Using Rapid Contingency Management Technique and Harmony Search Algorithm

(2020) *Lecture Notes in Mechanical Engineering*, pp. 821-829.

**DOI:** 10.1007/978-981-15-2696-1\_79

<sup>a</sup> GITAM University, Visakhapatnam, India

<sup>b</sup> Vignan's Institute of Information Technology, Visakhapatnam, India

<sup>c</sup> V R Siddhartha Engineering College, Vijayawada, India

<sup>d</sup> JNTUA College of Engineering, Pulivendula, India

### Abstract

Optimal power flow (OPF) is an ideal method of optimally utilizing power system resources. Its effect further enhances the presence of FACTS devices. Performing OPF in combination with a FACTS device may also be helpful for the improvement of power system stability during outage conditions. In the present work, a combined index-based strategy for the optimal placement of Thyristor-Controlled Series Compensator (TCSC) and optimal tuning of generators using the harmony search algorithm is proposed for improving the system stability. The projected technique is verified and implemented on IEEE 30

bus system. The system is tested at both normal and contingency conditions. The contingency analysis is done using a new method, namely rapid contingency ranking technique (RCRT). The TCSC has been placed on the basis of an index which is a combination of line utilization factor (LUF) and fast voltage stability index (FVSI). A multi-objective function has been chosen for tuning the generators. The multi-dimensional function includes deviation in voltage, cost of power generation, and loss of transmission line. The outcomes of the proposed method are also compared to a method, i.e., genetic algorithm. © 2020, Springer Nature Singapore Pte Ltd.

**Publisher:** Springer

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

24) Sundara Ramam, R., Harisankar, B.

**Design and Fabrication of Small-Scale Automatic Stamping Machine**

(2020) *Lecture Notes in Mechanical Engineering*, pp. 303-310.

**DOI:** 10.1007/978-981-15-2696-1\_29

Department of Mechanical Engineering, Vignan's Institute of Information Technology, Visakhapatnam, India

**Abstract**

Stamping is one of the important processes that are to be performed in the packaging of industrial products. Stamping is the process used to print the text or symbol or trademark of companies' products on the paper or packaging boxes. As stamping is a manual process from its beginning till now, it takes more time and labor charges, we thought to automate the stamping process to reduce the time taken for the stamping process and to reduce the cost involved in labor. This leads to the invention of the automatic stamping machine. This works on the principle of rack and pinion mechanism and worm and worm wheel drive mechanism. The present work deals with the automatic stamping machine combined with the indexing table which automatically feeds the jobs for stamping. The main objective of this work is to help small-scale packaging industries which in turn reduce the time taken for stamping, reduce machinery cost, and increase productivity. © 2020, Springer Nature Singapore Pte Ltd.

**Publisher:** Springer

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

25) Naga Sudha, V., Raghuram, K.S., Savitri, V., Shanthi Swaroopini, A.

**Design Optimization of Slag Pot Transfer Car**

(2020) *Lecture Notes in Mechanical Engineering*, pp. 269-281.

**DOI:** 10.1007/978-981-15-2696-1\_26

Department of Mechanical Engineering, Vignan's Institute of Information Technology, Visakhapatnam, 530040, India

**Abstract**

A majority of the steel production industries rely on machinery or equipment for effective operation thereby avoiding or minimizing the accidents due to inevitable human errors. One such problem has been identified where the high temperature slag is damaging the power cables used to run the slag pot transfer car due to leakage or spillage. In order to overcome this, a new generation slag pot transfer car has been developed by incorporating modifications in the mast of the slag pot transfer car. A number of components such as canopy, mast, reeling drum, columns, and rollers are designed by assuming the dimensions based on existing industry requirements. The assembled components are then subjected to testing at full load conditions using a finite element analysis package where a suitable design or modification has been suggested taking factor of safety into consideration. This work is focused on indigenously designed and developed solutions for effective working of the industry. © 2020, Springer Nature Singapore Pte Ltd.

**Publisher:** Springer

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

26) Hari Kishan, A., Chaitanya, M., Uma Maheswara Rao, P.

**Determination of Flow Characteristics in Fire-Tube Boiler by Numerical Simulation**

(2020) *Lecture Notes in Mechanical Engineering*, pp. 769-776.

**DOI:** 10.1007/978-981-15-2696-1\_74

Vignan's Institute of Information Technology, Duvvada, Vizag, 530049, India

**Abstract**

This research work provides the thermal analysis of fire-tube boilers used in thermal power plants. For simulation purpose, a small-scale prototype of the original fire-tube boiler is designed using SolidWorks. The numerical simulation of the designed model is carried out in ANSYS Fluent. The initial section of the project represents the pressure and temperature variations along the length of the boiler for different water velocities (25, 30, 35 and 40 m/s). The later section deals by changing the boiler casing material between steel, brass and stainless steel to study the pressure and temperature variations at a constant water velocity of 30 m/s. Based on the results, the best boiler shell material among these three has been identified. The results have been provided in the form of pressure and temperature contours as obtained from the CFD analysis. © 2020, Springer Nature Singapore Pte Ltd.

**Publisher:** Springer

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

27) Ramakrishna, C.S., Subbarao, K.V., Arji, S., Harisankar, B.

**Bending Stress Analysis of PM Composite Beam**

(2020) *Lecture Notes in Mechanical Engineering*, pp. 185-194.

**DOI:** 10.1007/978-981-15-2696-1\_18

Department of Mechanical Engineering, Vignan's Institute of Information Technology, Visakhapatnam, 530049, India

**Abstract**

In the present work, the stress behavior of laminated composite plate under compressive loading using a four-node element with six degrees of freedom at each node and translations in the x and y directions is done. In the present study, the modeling is done in Abaqus. Investigations were carried on plates starting with three layers of the top location of 0° angle-ply laminated composite plates at clamped boundary condition. Similarly, with three layers of top location, 0°, 30° and -45° angle ply are laminated. By changing the location of ply orientations the bending stress may be improved. The effect of changing the ply orientation is to increase or decrease the stresses. The composite plate has been analyzed for various orientations and their effects on stresses so as to find the optimized conditions. © 2020, Springer Nature Singapore Pte Ltd.

**Publisher:** Springer

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

28) Bhavani, G., Harish Kumar, K., Raghuram, K.S., Bendu, H.S.

**Analysis on Inverse Kinematics of Redundant Robots**

(2020) *Lecture Notes in Mechanical Engineering*, pp. 943-950.

**DOI:** 10.1007/978-981-15-2696-1\_91

Department of Mechanical Engineering, Vignan's Institute of Information Technology, Visakhapatnam, India

**Abstract**

The objective of the present work is to finalize a numerical solution that operates on the inverse kinematic mechanism of redundant robots leading to a robust method. After considering the consequences of all numerical ways of solving the inverse kinematics problem with their limitations and difficulties, it aimed to receive the best one of them and find a final

effective solution. Now, the results obtained till now are implemented to the task space trajectory planning and redundancy resolution. © 2020, Springer Nature Singapore Pte Ltd.

**Publisher:** Springer

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 29) Venkateswara Rao, B.<sup>a</sup>, Sateesh, B.<sup>b</sup>, Uma Maheswari, R.<sup>b</sup>, Nagesh Kumar, G.V.<sup>c</sup>, Sobhan, P.V.S.<sup>d</sup>

**Enhancement of Line-Based Voltage Stability of Energy System with Thyristor Controlled Series Capacitor Using Cuckoo Search Algorithm**

(2020) *Lecture Notes in Mechanical Engineering*, pp. 641-650.

**DOI:** 10.1007/978-981-15-2696-1\_61

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**Abstract**

Preserving stable conditions on encountering with small disturbances under normal or slightly overloaded conditions is termed as voltage stability. Maintaining voltage stability is one of the leading factors for energy system networks. In this paper, new line established voltage stability index entitled fast voltage stability index (FVSI) is proposed for optimal placement of Thyristor Controlled Series Capacitor (TCSC). Optimal tuning of TCSC is obtained using cuckoo search algorithm (CSA) to increase the voltage stability of the energy system established on minimization of total voltage deviation of the system. The CSA is coded in MATLAB and the performance is tested on IEEE 30 bus system with voltage deviation minimization as an objective function. TCSC is a series-connected device in the flexible alternating current transmission system (FACTS) family. It was capable of controlling the power flow through the line and also controls the line-based voltage stability. In this paper, TCSC is merged in CSA-based Power Flow to optimize the total voltage deviation. Results attained by CSA are related to that attained by genetic algorithm (GA) in both without and with TCSC conditions. These results show that CSA produces better results compared to GA for solving optimal tuning of TCSC. © 2020, Springer Nature Singapore Pte Ltd.

**Publisher:** Springer

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 30) Sharma, S.K.<sup>a</sup>, Khuntia, B.<sup>b</sup>

**Service Layer Security Architecture for IOT Using Biometric Authentication and Cryptography Technique**

(2020) *Smart Innovation, Systems and Technologies*, 169, pp. 827-837.

**DOI:** 10.1007/978-981-15-1616-0\_80

<sup>a</sup> Department of MCA, Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh, India

<sup>b</sup> Department of Computer Science, Berhampur University, Berhampur, Odisha, India

**Abstract**

Data security and authentication mechanism is a very challenging job for smart devices. And more ever, IOT is suffering with login and verification process. Here, in our paper, we have focused on human characteristics-based security system which cannot be pinched easily such as iris, thumb, palm, DNA and voice-based authentication system. Using biometric authentication theory, we have presented that how biometric systems are the boundless computational resources and prospective of flexibility, reliability and cost reduction along with high-security performance resources. To maintain the security of biometric traits over the Internet channel, end user can apply the cryptography algorithm such as ElGamal, MAC Omura, Cramer-Shoup, RSA. As a final point, this paper is contributed for evidencing the strength of integrating the biometric authentication system with cryptography techniques and its application on Internet-based applications. In order to develop strong security, we have proposed an integrated approach of three mechanisms using biometrics, OTP and cryptography. The work is validated for biometrics through AVISPA (SPAN) security tool which is worldwide acceptable for approving the security architecture. © 2020, Springer Nature Singapore Pte Ltd.

**Publisher:** Springer

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

31) Rudra Kumar, A., Rambabu, S., Sri Harsha, K.

**Design and Simulation of Porous Ti–6Al–4V Alloy Structures for Additive Manufacturing of Bioimplants**

(2020) *Lecture Notes in Mechanical Engineering*, pp. 941-946.

**DOI:** 10.1007/978-981-15-1201-8\_100

Department of Mechanical Engineering, Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh 500049, India

**Abstract**

This paper presents the efforts made in the design and finite element simulation of porous Ti–6Al–4V alloy structures to determine the elastic modulus of porous parts produced with the additive manufacturing technology for biomedical applications. The major problem concerning with the typically used metallic bioimplants is the mismatch of elastic modulus between the implant and the human bone, which resulted in the degradation of surrounding bone structure and disassociation of the implant. The present work is focused on designing the porous Ti–6Al–4V alloy structures and also on studying the influence of porosity on the elastic modulus of implants made of Ti–6Al–4V alloy material. The three-dimensional strut-based cellular structure is employed to build the porous structures ranging from 10 to 50% porosity volume. This work established the appropriate porosity to minimize the mismatch of elastic modulus between the implant and the bone by adding the porosity to the implant structure. It is found that the Ti–6Al–4V structure with the porosity of 40 vol.% possesses the elastic modulus about 74 GPa. These results demonstrate the proof of tailoring the elastic modulus of bioimplants. © 2020, Springer Nature Singapore Pte Ltd.

**Publisher:** Springer

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

32) Mutra, R.R.<sup>a</sup>, Srinivas, J.<sup>b</sup>

**Active Vibration Control in Turbocharger Rotor System with the Use of Electromagnetic Actuator**

(2020) *Lecture Notes in Mechanical Engineering*, pp. 563-570.

**DOI:** 10.1007/978-981-15-1201-8\_63

<sup>a</sup> Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh 530046, India

<sup>b</sup> National Institute of Technology, Rourkela, Odisha 769008, India

**Abstract**

This work presents an active vibration control scheme in high-speed turbocharger rotor system. The working speed of these rotors is very high so a small vibration may damage the system, so there is a requirement to control such unwanted vibrations. Most of the cases these rotors are supported on the floating ring bearings. Initially, the rotor model is developed with finite element method to get the dynamic response of the system due to unbalance and gravity forces. The nonlinear hydrodynamic bearing forces are computed and the equations of motion of multi-degree of freedom turbocharger model are solved with time integration scheme. After obtaining the parametric effects of the bearing on overall system response an electromagnetic actuator system is adopted to control the vibration amplitudes in the system. The methodology is found to be reliable and reduces the vibration amplitudes considerably. © 2020, Springer Nature Singapore Pte Ltd.

**Publisher:** Springer

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

33)

Varadala, A.B.<sup>a</sup>, Gurugubelli, S.N.<sup>b</sup>, Bandaru, S.<sup>c</sup>

**An Effective and Economical Method to Improve Structural Homogeneity and Mechanical Properties of Al–Mg Alloy Processed by ECAE**

(2020) *Lecture Notes in Mechanical Engineering*, pp. 1053-1060.

**DOI:** 10.1007/978-981-15-1201-8\_112

<sup>a</sup> Mechanical Engineering, Vignan's Institute of Engineering for Women, Visakhapatnam, Andhra Pradesh 530049, India

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<sup>c</sup> Mechanical Engineering, Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh 530049, India

**Abstract**

The formation of the dead metal zone (DMZ) in equal channel angular extrusion (ECAE) process significantly affects the deformation uniformity and mechanical properties of work material. The aim of the present study is to investigate the effect of the dead metal zone on structural homogeneity and hardness of Al 5083 alloy processed by ECAE and suggest the way to minimize that adverse effect. In this work, the rectangular billets with 1-mm-thick copper casing on two longitudinal faces and square billets with no casing are processed by ECAE up to four passes in route A. It was observed that the soft and ductile nature of the copper casing allows smooth flow of the work material at low pressing loads as compared to the alloy ECAE'd without a casing. Field emission scanning electron microscope (FESEM) images of the processed material with casing show the noteworthy improvement in structural homogeneity and grain refinement than another set of billets. The obtained structural homogeneity indicates the uniform strain distribution in the processed material is achieved by minimizing the formation of the dead metal zone at the intersection of ECAE die channels. The higher hardness and tensile strength measurements of the processed materials indicate the significance of grain refinement and uniform strain distribution. The variations in the test results confirm the non-homogeneous strain distribution caused by the dead metal zone is high for the billets processed with no copper casing. © 2020, Springer Nature Singapore Pte Ltd.

**Publisher:** Springer

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

34) Rudrabhiramu, R.<sup>a</sup>, Harish Kumar, K.<sup>a</sup>, Kiran Kumar, K.<sup>b</sup>, Mallikarjuna Rao, K.<sup>c</sup>

**Heat Transfer Enhancement Using Overlapped Dual Twisted Tape Inserts with Nanofluids**

(2020) *Lecture Notes in Mechanical Engineering*, pp. 123-130.

**DOI:** 10.1007/978-981-15-1201-8\_14

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**Abstract**

The thermal performance of a heat exchanger can be improved by various techniques. It is a major concern when coming to industries as the heat losses play a major role in efficiency of the overall plant. The present work is carried out to enhance the heat transfer rate of a tubular heat exchanger by incorporating overlapped dual twisted tapes (ODTTs) or inserts into a tube and carrying out the numerical simulation for different twisting ratios of ODTTs. In addition to this, Al<sub>2</sub>O<sub>3</sub> nanoparticles are used as additives to increase the value of heat transfer coefficient (h), thereby improving the Nusselt number (Nu) and overall thermal performance. The addition of ODTTs resulted in improved residence time, more contact surface area and improved fluid mixing and swirling for effective heat transfer to take place. The numerical simulation is repeated for nanofluid concentrations of 1% and 2% and also for varying twisting ratios of Yo/Y = 1.5, 2 and 2.5. The tube with 1% nanofluid concentration and twisting ratio Yo/Y = 2 yielded better results in comparison with all other combinations. © 2020, Springer Nature Singapore Pte Ltd.

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**Publication Stage:** Final

**Source:** Scopus

35)

Kumar, C.R.<sup>a</sup>, Nanaji, U.<sup>b</sup>, Sharma, S.K.<sup>c</sup>, Murthy, M.R.<sup>d</sup>

**Performance Analysis on IARP, IERP, and ZRP in Hybrid Routing Protocols in MANETS Using Energy Efficient and Mobility Variation in Minimum Speed**

(2020) *Advances in Intelligent Systems and Computing*, 1079, pp. 811-824.

**DOI:** 10.1007/978-981-15-1097-7\_68

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**Abstract**

MANET represents its gadgets behavior in its network structure to relocate any movement of time without drawing near any topological approval in multilateral guidelines, which ensuing the runtime link status quo with different gadgets that belongs to the identical zone. The important problem with building the MANET is to keep runtime place facts of the participated gadgets for managing the routing facts to examine traffic. MANET has the possibility to preserve one or more than one nature of transceivers. Strength control in wi-fi networks deals with the technique of managing power resources through controlling the battery discharge, adjusting the transmission electricity, and scheduling of strength assets so that it will boom the life of the nodes of an advert hoc wi-fi network. Right here, in our recommend paintings area, Intra Sector Routing Protocol (IARP), Zone Routing Protocol (ZRP), and Inter Quarter Routing Protocol (IERP) are simulated with dedicated small networks with 90 nodes the usage of EXATA emulator to examine QOS for application and electricity efficiency. © Springer Nature Singapore Pte Ltd 2020.

**Publisher:** Springer

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

36) Sharma, S.K.<sup>a</sup>, Khuntia, B.<sup>b</sup>

**Distributed authentication security for iot using dass and loki91**

(2020) *Lecture Notes in Electrical Engineering*, 612, pp. 181-196.

**DOI:** 10.1007/978-981-15-0372-6\_14

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**Abstract**

With the massive expansion of computing technology, the distributed architecture has received wide acceptance for their services. Moreover, IOT technology is used to develop smart applications such as smart security system, health care, smart medicals and smart houses. Due to the vibrant character of access and connectivity in IOT environment, there is mounting of risks and genesis of enormous threat to IOT environment. In proposed system, we have study the fundamental concept behind DASS approach and how to ensure strong authentication services in a distributed environment which will create snag for malicious user. Authentication is particularly a challenging issue in distributed environment due to its multi-sharing concept. DASS works on mutual authentication mechanism when two parties made conversation neither obtain any facts that it could employ to masquerade as the others to an arbiter. Finally, our work is to design the two-level security mechanisms for generating complex security system. In our propose system, work is implemented in two phases, whereas in first phase, we have used authentication process including password and signature for both ends using third party and in second phase data confidentiality using LOKI91 cryptography which is defensive from any differential cryptanalysis and enforcing the secure communication. © Springer Nature Singapore Pte Ltd. 2020.

**Publisher:** Springer

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

37) Anitha, J., Mani, G., Venkata Rao, K.

**Driver Drowsiness Detection Using Viola Jones Algorithm**

(2020) *Smart Innovation, Systems and Technologies*, 159, pp. 583-592.

**DOI:** 10.1007/978-981-13-9282-5\_55

Vignan's Institute of Information Technology, Visakhapatnam, India

**Abstract**

Monitoring a driver to detect his distraction is a complex problem that involves physiological and behavioral elements. In order to solve this problem a constant detection system for monitoring driver's eye movement is to be monitored. Initially, driver's face is first located in the input video sequence which is then tracked over the subsequent eye movements of the driver are constantly traced. Using Viola and Jones face detection algorithm the sequence of images are trained and classified in such a way that a warning alarm is buzzed if the eyes are constantly closed for a predetermined period amount of time. Hence this reduces the rate of traffic accidents occurring these days. Future work is on how to extend the system to determine the level of vigilance of the driver. © 2020, Springer Nature Singapore Pte Ltd.

**Publisher:** Springer

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

38) Rao, K.V.<sup>a</sup>, Prasanth Kumar, B.<sup>b</sup>, Viswanadh Sharma, C.<sup>a</sup>, Eluri, N.R.<sup>c</sup>, Kumar, B.K.<sup>b</sup>

**Implementation of Secrete Message Communication in Server/Client Environment Using Splines Based on PKCS**

(2020) *Smart Innovation, Systems and Technologies*, 159, pp. 571-582.

**DOI:** 10.1007/978-981-13-9282-5\_54

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<sup>b</sup> Department of Computer Science and Engineering, Raghu Institute of Technology, Visakhapatnam, India

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**Abstract**

This paper presents an approach for a secret message communication among a client-server group. In order to increase security to distribute secret message (key), we introduce splines using these at a specific permutation. We generate the key and distribute this key. This is to maintain confidentiality. Confidentiality can be achieved through changing the key material, known as re-keying every time a new member joins the group or a existing member leaves the group. The new group key is computed guaranteeing the forward and backward secrecy. Whenever there is a membership change, group key must be changed to prevent a new use from reading past communication. In proposed work, we propose how group communication must establish registration of users, entry and exit of a user. The encryption and decryption algorithm is used between the sender and the receiver. In the process, a spline is installed in the server; the server will distribute or communicate the secret messages to client based on one-to-one mapping with the help of splines; message has been encrypted and distributed to respective clients. In the client side, the decryption batch files to be installed for the verification of secret message authentication. © 2020, Springer Nature Singapore Pte Ltd.

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**Book Chapters**

## Documents

- 1) Gangu, K.K.<sup>a b</sup>, Jonnalagadda, S.B.<sup>b</sup>

**Surface modification of metal-organic frameworks for biomedical applications**  
(2020) *Metal-Organic Frameworks for Biomedical Applications*, pp. 111-139.

**DOI:** 10.1016/B978-0-12-816984-1.00008-1

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**Abstract**

Metal-organic frameworks (MOFs) are a class of porous materials with unique physical, chemical, and mechanical properties. Their exceptional properties make them candidates for many applications in the modern chemistry. Huge surface area, good pore dimensions, and scope of tunability make MOFs exciting materials for researchers, who explore the novel materials at the molecular scale. Depending on the nature of applications, with in situ alteration and fabrication or in post-synthetic approach, a variety of MOFs can be designed with revamped properties. Surface modification via dispersion of other proven substances and impregnation of varied active substances into pores of MOFs form a yardstick for potential utilization. Generally, various biologically imperative organic reactions have been tedious over their synthetic approaches; in such case, MOFs as solid catalysts compensate to overcome the problems associated with conventional methods. Direct employment of MOF as catalyst may not be valid for effective catalytic activity in all cases. Hence, appropriate modification or adjustment of the MOF structure is paramount for tuning its activity. In this chapter, we have explicitly elucidated the different techniques enveloped in the substantial modification of MOFs adopted by several researchers to achieve superior catalytic activity, compared to their counterparts in designing a variety of pharmaceutically valuable products. © 2020 Masoud Mozafari Published by Elsevier Inc.

**Document Type:** Book Chapter

**Publication Stage:** Final

**Source:** Scopus

- 2) Hazra, D.<sup>a</sup>, Bhattacharyya, D.<sup>b</sup>

**A Shape-Based Model with Zone-Wise Hough Transformation for Handwritten Digit Recognition**  
(2020) *Lecture Notes in Networks and Systems*, 105, pp. 23-33.

**DOI:** 10.1007/978-981-15-2407-3\_3

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<sup>b</sup> Department of Computer Science and Engineering, Vignan's Institute of Information Technology (A), Visakhapatnam, Andhra Pradesh 530049, India

**Abstract**

A novel method for different-shape-features-based handwritten digit recognition is proposed in this paper. A digit database is constructed with shape features obtained by calculating normalized and signed width vector of handwritten digit. The differences between left most and right most point in different heights make the width vector of the digit. If it is completely left of central point of total image, then a negative sign is attached with width. The signed width vector is normalized by dividing it by maximum width to make the width vector invariant to scaling. In the same way, normalized signed width vector of the test digit is calculated and compared with the normalized signed width vectors of training digits those already stored in digit database. K-nearest neighbor algorithm and random forest-based classification are used to classify the test digit. Hole-based preprocessing is used to reduce the recognition time complexity. Hough transformation-based line characteristics analysis is used to increase the accuracy of classification. The image is divided into different zones, and Hough line characteristics of the specific zone for specific digit are analyzed. Proposed model classifies digits with 98.3% accuracy using k-nearest neighbor-based classification and 98.8% using random forest-based classification, which is comparable to

other state-of-the-art digit recognition models. The time complexity of training and testing are very low. © 2020, Springer Nature Singapore Pte Ltd.

**Document Type:** Book Chapter  
**Publication Stage:** Final  
**Source:** Scopus

- 3) Reddy, B.D.<sup>a</sup>, Kumar, L.S.C.<sup>a</sup>, Nelatur, N.<sup>b</sup>

**A Review on Datasets and Tools in the Research of Recommender Systems**  
(2020) *Lecture Notes in Networks and Systems*, 105, pp. 59-70.

**DOI:** 10.1007/978-981-15-2407-3\_8

<sup>a</sup> Department of Computer Science and Engineering, Vignan Institute of Information Technology, Visakhapatnam, AP, India

<sup>b</sup> Department of CS and SE, AU College of Engineering (A), Andhra University, Visakhapatnam, 530003, India

#### **Abstract**

This review seeks to explore recent advances in area of recommender systems with emphasis on large-scale datasets and tools. Nowadays, companies throughout the world are making their web systems equipped with recommendation systems to enhance productivity and gain customer satisfaction. Recommendation systems driven by big data have made the complex decision-making process to a simple selection task, thus redefining the process of searching and navigating across data dense web systems. This paper's objective is to escalate awareness about open/public recommendation systems dataset among the research and practitioner's community. Effective approaches for generating recommendations are discussed with their pros and cons. Open-source tools of trade for generating recommendations are outlined. Subsequently, this paper can guide in selection of dataset for experimental studies. This article concludes by promoting dataset as a product. Furthermore, claims that integrated dataset repositories and search engine for datasets are imperative for advancements of empirical research studies in the field of computer science. © 2020, Springer Nature Singapore Pte Ltd.

**Document Type:** Book Chapter  
**Publication Stage:** Final  
**Source:** Scopus

- 4) Sarathchandra Kumar, L., Chaitanya, U.

**Deducted Sentiment Analysis for Sarcastic Reviews Using LSTM Networks**  
(2020) *Lecture Notes in Networks and Systems*, 105, pp. 35-44.

**DOI:** 10.1007/978-981-15-2407-3\_4

Department of Computer Science and Engineering, Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh, India

#### **Abstract**

Sentiment analysis is one among various artificial intelligence domains which has become predominant in various fields of study and applications. Sentiment analysis is widely used in product reviews, movie reviews, social tweets, etc. Sentiment analysis takes a heap of reviews and predicts the sentiment collectively conveyed by them. Sarcasm is one of the complications in sentiment analysis makes the review normal syntactically but not semantically. Sarcastic reviews can be treated as normal inputs if sentiment analysis systems are capable of getting optimal sentiment from the review though it is full of sarcasm. Conventional algorithms and neural networks used for sentiment analysis are not capable to produce the optimal results for sarcastic reviews. As in advancement of deep learning, long short-term memory (LSTM) networks were introduced to give a solution to the sequence problems. In this paper, we mainly focused on sentiment analysis as sequence problem and binary classification problem. The review has been taken as input sequence to our proposed LSTM model that is capable to predict probability of two classes efficiently. The relatively optimal results have been achieved with our LSTM network. © 2020, Springer Nature Singapore Pte Ltd.

**Document Type:** Book Chapter  
**Publication Stage:** Final  
**Source:** Scopus

- 5) Kavitha, N., Vayalapelli, M.

**A Study on Pre-processing Techniques for Automated Skin Cancer Detection**

(2020) *Lecture Notes in Networks and Systems*, 105, pp. 145-153.

DOI: 10.1007/978-981-15-2407-3\_19

Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh, India

#### Abstract

Automatic detection of skin cancer helps doctors to diagnose malignant or benign skin melanoma. In the early stages, most cancers of the skin are curable. This can save a patient's life. Biopsy method is a formal method for the diagnosis of skin cancer. It is done by removing skin cells and the sample is tested in several laboratories. It is a painful method that takes lots of time. Therefore, it is essential to determine more efficient techniques for skin cancer detection as they help researchers to reduce the error rate. Detection of skin cancer is feasible in the early stages with the present techniques. The pre-processing process is the first phase and the useful step in improving the image quality by removing the noises and undesirable components in the skin image context. In this paper, we present the approaches to pre-processing that are useful to diagnose images of skin cancer. The pre-processing can be divided into the image enhancement, restoration of images and removal of hair in the detection of skin cancer. Each phase comprises various methods mentioned in this article. © 2020, Springer Nature Singapore Pte Ltd.

**Document Type:** Book Chapter

**Publication Stage:** Final

**Source:** Scopus

- 6) Patnala, E.<sup>a</sup>, Jyothi, R.S.S.<sup>b</sup>, Asish Vardhan, K.<sup>b</sup>, Thirupathi Rao, N.<sup>c</sup>

#### A Detailed Review on Big Data Analytics

(2020) *Lecture Notes in Networks and Systems*, 105, pp. 53-58.

DOI: 10.1007/978-981-15-2407-3\_7

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#### Abstract

Information or data is one more important source of any application or any type of data processor. Day by day, there was an enormous growth of data, and to handle and process huge volumes of data, traditional database methods are inefficient and they are time taking. In order to reduce these cons, we got an emerging technology that is big data. By using this, we can handle large amounts of data in efficient manner. © 2020, Springer Nature Singapore Pte Ltd.

**Document Type:** Book Chapter

**Publication Stage:** Final

**Source:** Scopus

- 7) Roy, S.<sup>a</sup>, Naik, S.<sup>a</sup>, Aruna, S.<sup>b</sup>, Gousia Begam, S.K.<sup>b</sup>

#### Compact Slot-Based MIMO Antenna for 5G Communication Application

(2020) *Lecture Notes in Networks and Systems*, 105, pp. 173-180.

DOI: 10.1007/978-981-15-2407-3\_22

<sup>a</sup> Vignan's Institute of Information Technology, Visakhapatnam, India

<sup>b</sup> Andhra University College of Engineering (A), Visakhapatnam, India

#### Abstract

A compact MIMO antenna is presented in this paper for 5G communication application. The proposed MIMO antenna covers the 28 GHz 5G application bands. The antenna covers the wide frequency spectrum which ranges from 26.55 to 29.27 GHz. The gain of the antenna is found near about 6.01 dBi at 28 GHz. The dimension of the compact four-element MIMO antenna is 31.1 × 30.1 mm<sup>2</sup>. The proposed antenna is designed, simulated and analyzed using ANSYS HFSS software. The ECC (envelope correlation coefficient) is <math>\lt; 0.5</math>, and D.G (diversity gain) is >math>\gt; 9</math> for the required band of frequencies. © 2020, Springer Nature Singapore Pte Ltd.

**Document Type:** Book Chapter

**Publication Stage:** Final

**Source:** Scopus

- 8) Sambana, B.<sup>a</sup>, Patnaik, V.S.<sup>b</sup>, Thirupathi Rao, N.<sup>c</sup>

**An Artificial Intelligent Approach to User-Friendly Multi-flexible Bed Cum Wheelchair Using Internet of Things**

(2020) *Lecture Notes in Networks and Systems*, 105, pp. 133-144.

**DOI:** 10.1007/978-981-15-2407-3\_18

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**Abstract**

The main theme of current research paper represents the design and fabrication of "Form Irresolute Couch," which means "structure was changing bed" by using the Internet of Things with support artificial intelligence. The proposed designed device to move flexible and user friendly as per patient and hospital requirements, it is far difference from traditional bed in existing hospitality areas. When user wants to change any mode and move on to another place, easily operate by remote or switch mode. Intelligent automated monitoring system will predict based on previous data with patient reports and guide future precautions, and if any problems arises in patient body, then intelligent system automatically sends message alerts to existing relatives, doctors and healthcare centers along with caretakers. Here in this couch, the new operating mechanism is introduced by using Rack and Pinion and mechanical linkages. In this couch, three divisions are made in which the last parts are used to move from its position. While operating the mechanism, the part on head position would tend to move upward fixed at one end, the third part which is at leg position would tend to move downward. It is also fixed at one end, so that, during the working process, people on the bed has no need to shift from bed to chair. The bed itself would tend to turn from bed to chair. The unique design is more serviceable for lame/patients. © 2020, Springer Nature Singapore Pte Ltd.

**Document Type:** Book Chapter

**Publication Stage:** Final

**Source:** Scopus

- 9) Madhuri, B., Sudhakar, C., Thirupathi Rao, N.

**Android-Based Application for Environmental Protection**

(2020) *Lecture Notes in Networks and Systems*, 105, pp. 85-90.

**DOI:** 10.1007/978-981-15-2407-3\_11

Department of Computer Science and Engineering, Vignan's Institute of Information Technology (Autonomous), Visakhapatnam, AP, India

**Abstract**

The living standards of the people are mainly depending on the air quality surrounded by them and the food they consume. These are two major important factors that will influence the living standard of any human being. Providing pure air or an air quality with very less amounts of ingredients with gases for causing health issues is an important factor for diseases. People who were not having pure air, the problems of their health increase a lot. Hence, providing the pure air to the people is a major concern for the public and government too. In the current work, an application had been developed to maintain or to measure the air quality in various places surrounded by us whenever we are moving or staying at a particular places in the cities or in rural areas. Hence, iAQ is an effective system which is defined by its simplicity of installation and configuration through the use of wireless technology. © 2020, Springer Nature Singapore Pte Ltd.

**Document Type:** Book Chapter

**Publication Stage:** Final

**Source:** Scopus

- 10) Suneetha, P.<sup>a</sup>, Srinivasa Naik, K.<sup>a</sup>, Muthusamy, P.<sup>b</sup>, Aruna, S.<sup>c</sup>

**Analysis of DRA with Different Shapes for X-Band Applications**

(2020) *Lecture Notes in Networks and Systems*, 105, pp. 77-83.

**DOI:** 10.1007/978-981-15-2407-3\_10

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**Abstract**

Geometry of dielectric resonator antenna has a significant effect on the design parameter. In this paper, the comparison of spherical type DRA has been carried out with cylindrical and conical shapes DRA to exhibit the best results for X-band applications. The proposed antennas (cylindrical, spherical, and conical) have been designed to operate at 9 GHz resonant frequency using Rogers TMM 13i material of permittivity = 12 with substrate Rogers RO3010 (lossy) used. The proposed antenna uses a combination of two resonating structures for making the operation feasible. The results have been analyzed and confirmed that spherical type exhibits better gain 7.97 dB and directivity is 8.48 dB and return loss is -39.02 dB and good bandwidth because of above characteristics and simplicity of the designers may prefer the spherical configuration for X-band applications. © 2020, Springer Nature Singapore Pte Ltd.

**Document Type:** Book Chapter

**Publication Stage:** Final

**Source:** Scopus

- 11) Srinivasa Naik, K.<sup>a</sup>, Madhusudhan, D.<sup>a</sup>, Chandini, S.<sup>a</sup>, Aruna, S.<sup>b</sup>

**Optimized Cylindrical and Rectangular DR Antenna for Ultra-Wideband Applications**

(2020) *Lecture Notes in Networks and Systems*, 105, pp. 221-226.

**DOI:** 10.1007/978-981-15-2407-3\_27

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<sup>b</sup> Andhra University College of Engineering, Visakhapatnam, Andhra Pradesh, India

**Abstract**

Dielectric resonator antennas (DRA) is mostly used in wireless communication. These antennas are of small size, with above 95% radiation efficiency and reduced power consumption. In this work, compact DR antenna is designed with specifications related to bandwidth, radiation pattern and gain. So, DRAs are designed and investigated based on this concept. In the first design, a small DRA has been designed and fed by a T-shaped feed to excite the antenna with a broadband width of 3.1–5.5 GHz, with size of antenna 30.0 × 21.0 × 0.8 mm<sup>3</sup>. A novel slot-feed wideband asymmetric two cylindrical DRAs are placed beside and asymmetrically with rectangular aperture feed. The bandwidth of designed antenna is 9.62–12.6 GHz. In the third design, a novel compact asymmetrically located pair of cylindrical DRA's located with respect to the offset aperture rectangular coupling, with covering dual-band frequency range from 6.02 to 7.32 GHz and from 8.72 to 17 GHz. © 2020, Springer Nature Singapore Pte Ltd.

**Document Type:** Book Chapter

**Publication Stage:** Final

**Source:** Scopus

- 12) Sukanya, Y.<sup>a</sup>, Umadevi, V.<sup>a</sup>, Nageswara Rao, P.A.<sup>b</sup>, Ashish Kumar<sup>a</sup>, Das, R.P.<sup>c</sup>

**DGS-Based Wideband Microstrip Antenna for UWB Applications**

(2020) *Lecture Notes in Networks and Systems*, 105, pp. 181-195.

**DOI:** 10.1007/978-981-15-2407-3\_23

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<sup>c</sup> Department of ECE, NSRIT, Visakhapatnam, India

**Abstract**

For UWB applications, a circular monopole having minimal dimensions has been designed for operation at single band. Half circular strip with semicircular monopole having smiley and DGS is the main features for this antenna, consisting of a mixer of semicircular element for radiation and similar strip along with a smiley on the top side of the substrate with permittivity 4.4 and thickness  $h = 1.59$  mm. The bottom side a dumbbell-shaped DGS is incorporated. The proposed antenna has

advantage in enhancing antenna bandwidth. This work is carried out using CST software. © 2020, Springer Nature Singapore Pte Ltd.

**Document Type:** Book Chapter  
**Publication Stage:** Final  
**Source:** Scopus

- 13) Ray, A.<sup>a</sup>, Chen, M.<sup>b</sup>, Gelogo, Y.<sup>c</sup>

**Performance Comparison of Different Machine Learning Algorithms for Risk Prediction and Diagnosis of Breast Cancer**

(2020) *Lecture Notes in Networks and Systems*, 105, pp. 71-76.

**DOI:** 10.1007/978-981-15-2407-3\_9

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**Abstract**

Breast cancer is the most common life threatening diseases and morbidity is also very high among the women population globally. Manual diagnosis of each image pattern in many cases has not produced any satisfactory outcome as it is time consuming as well as inefficient. In medical field, to classify the data, classification and data mining method play a major role. Diagnosis and analysis process in terms of time and accuracy can be substantially upgraded due to the classifier without human involvement. The main objective of this paper is to evaluate the performance of different machine learning algorithms SVM (Support Vector Machine), K Nearest Neighbors (K-NN), Naive Bayes (NB), CART (Classification and Regression Tree) in terms of efficiency and effectiveness. The two parameters of each algorithm have been measured by accuracy, precision, sensitivity and specificity. The SVM achieved highest accuracy (98.14%) with lower error rate. The valuation process is carried out on the on the Wisconsin Breast Cancer (original) datasets. The aim of this is to evaluate the suitable classifier by comparing the performance of four algorithms. SVM achieved a significant performance in respect of accuracy (98.14%) with lowest error rate. © 2020, Springer Nature Singapore Pte Ltd.

**Document Type:** Book Chapter  
**Publication Stage:** Final  
**Source:** Scopus

- 14) Chandra, J.V.<sup>a</sup>, Challa, N.<sup>b</sup>, Pasupuleti, S.K.<sup>a</sup>

**Detection of Deceptive Phishing Based on Machine Learning Techniques**

(2020) *Lecture Notes in Networks and Systems*, 105, pp. 13-22.

**DOI:** 10.1007/978-981-15-2407-3\_2

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**Abstract**

Internet-based sources facing security problem because of the most sophisticated phishing attacks on online world. Advanced persistent threat attackers are using targeted emails, phishing websites and social engineering techniques to reach their goals. Deceptive Phishing targets confidential information using social engineering thefts online identity and uses spoofed emails and lure to be forged websites. In this paper we discussed about different classification and filtering methods to protect the cloud. An experimental approach is provided with implementation procedures using machine learning techniques to combat on malicious websites and email spams. We concentrated on different approaches, algorithms, techniques to detect the phishing attacks, and a new model is designed and implemented on the dataset and results are evaluated. The evaluation metrics are implemented on datasets based on different algorithms, and results are tabulated and graphical analysis is done. © 2020, Springer Nature Singapore Pte Ltd.

**Document Type:** Book Chapter  
**Publication Stage:** Final  
**Source:** Scopus

- 15) Archana Acharya, T.<sup>a</sup>, Veda Upasan, P.<sup>b</sup>

**A Stitch in Time Saves Nine: A Big Data Analytics Perspective**

(2020) *Lecture Notes in Networks and Systems*, 105, pp. 227-243.

**DOI:** 10.1007/978-981-15-2407-3\_28

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<sup>b</sup> Department of Computer Science and Systems Engineering, College of Engineering, Andhra University, Visakhapatnam, 530003, India

**Abstract**

Profitability and productivity are the two dimensions of measurement for any business which depends mainly on two important components—customers and employees. Each of the customer and the employee are unique by requirements and skill sets, respectively. Personalised attention to these components lays the platform not only for increasing the loyal customer base but also for dedicated employees. Today every business in general and service industry like banking sector in particular stands on the strength of these live components to work in the emerging competitive environment which is measured in 360° perspective where every minute angle is to handle with great care. To balance the live components with competitiveness banking industry requires adequate processed information to pay personalised attention. The digital era is creating volumes of data, but in the present working conditions there is a missing mechanism to generate processed information at right time and place. This paper highlights the following questions: What big data is? What is the impact of analytics on banking sector? Can analytics address the customer requirements of banking sector. The findings of the study recommend immediate incorporation of technology to banking sector in India. © 2020, Springer Nature Singapore Pte Ltd.

**Document Type:** Book Chapter

**Publication Stage:** Final

**Source:** Scopus

- 16) Aleemulla Khan, P., Thirupathi Rao, N., Bhattacharyya, D.

**Prediction of Cricket Players Performance Using Machine Learning**

(2020) *Lecture Notes in Networks and Systems*, 105, pp. 155-162.

**DOI:** 10.1007/978-981-15-2407-3\_20

Department of Computer Science and Engineering, Vignan's Institute of Information Technology (Autonomous), Visakhapatnam, AP, India

**Abstract**

In any sport, especially in cricket selection of the players is the most significant job of the team management. The efficiency of a player depends on various circumstances such as experience, current form, performance in the previous match, as well as performance at the specific venue, etc. The cricket board appoints selectors, they sit along with the captain and decide the merit of each top performer and can select any 11 players for each match of the series from a squad of 15–20 players. The coach provides suggestions and helps the captain in making decisions. We experiment to predict the performance of the players by considering their ratings such as batting or bowling averages, respectively. These problems are indicated as classification problems where number of runs and number of wickets are classified in different ranges. Moreover in this paper, we used relevant scoring factor, co-efficient correlation and tree classifiers to generate the prediction models for these problems. © 2020, Springer Nature Singapore Pte Ltd.

**Document Type:** Book Chapter

**Publication Stage:** Final

**Source:** Scopus

- 17) Bharat, T.

**Digital Transformation of Seed Distribution Process**

(2020) *Lecture Notes in Networks and Systems*, 105, pp. 1-12.

**DOI:** 10.1007/978-981-15-2407-3\_1

Department of Information Technology, Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh, India

**Abstract**



In this paper, we work on the unique method of digital transformation of the distribution of seeds to the farmers; this method reduces the manual intervention by more than half of the time and makes it faster for any individual to rely on this. Agriculture is the heart of India; according to the survey in 2011, about 16% of GDP and 10% of export earnings are from agriculture. Agriculture is the primary source of income and means of living for more than 58% of India's population. About 78% of farmers claim seeds from government every year or claims for crop insurances. This present system takes immense time for each and every step to process and happen; it is a very hectic and time-consuming process. To cope with these problems, a digital transformation solution for the distribution of seeds is introduced here, and we can even use these data for input subsidy and crop insurance settlements. Generally in the current system it's taking from minimum 4 months to approximately upto 18 months and sometimes even more, but in our current process which we are suggesting can be done within 3–4 days. © 2020, Springer Nature Singapore Pte Ltd.

**Document Type:** Book Chapter

**Publication Stage:** Final

**Source:** Scopus

- 18) Satyanarayana, K.V.<sup>a</sup>, Sudha, K.<sup>b</sup>, Rao, N.T.<sup>c</sup>, Chen, M.<sup>d</sup>

**Analysis of Queuing Model-Based Cloud Data Centers**

(2020) *Lecture Notes in Networks and Systems*, 105, pp. 251-261.

**DOI:** 10.1007/978-981-15-2407-3\_30

<sup>a</sup> Department of Computer Science and Engineering, Avanthi Institute of Engineering and Technology, Visakhapatnam, India

<sup>b</sup> Department of Computer Science and Engineering, Lenora College of Engineering and Technology, Rajahmundry, India

<sup>c</sup> Department of Computer Science and Engineering, Vignan's Institute of Information Technology (A), Visakhapatnam, AP 530049, India

<sup>d</sup> Harbin University of Commerce, Harbin, China

**Abstract**

Cloud computing is the process of allocating the network access admission to a group of selected users having advanced and smart pattern of computing facilities on the plan of usefulness of the network permission for accessing the network resources whenever there is a demand for the facility to be provided from the cloud. It may be a customary term and thus the regular service that was being delivering the required services to the hosts among net. Here, the cloud computing mechanism is employed for describing each list of platforms that were out there to the users for operating and additionally the many styles of applications which will be processed. The current technique was being thought about by most of the analyzers because of the most potential and therefore the most helpful space for the analysis and also for analysis in academe like universities and major research laboratories. Performance analysis of many connected applications and their sub-elements were being thought about in the concert of the helpful and principally used analysis space within the recent years. This method and its services were being employed principally for the suppliers of the cloud and its connected spaces, and therefore, the beneficiaries of this method of area were each supplier of the cloud and therefore the customers associated with the cloud. Solely few notable works are revealed with regard to performance analysis in cloud computing. In General, the analytical models were geared towards the models that use the cloud and its services through the performance of the model, and the current model was analyzed and evaluated for various configurations and assumptions. These assumptions were based on the queuing theory, and its accuracy is verified with numerical calculations and simulations. The present paper deals with the performance evaluation in terms of steady-state parameters of a small cloud server farm using single- and multi-server queuing models. Single-server model includes M/M/1 and M/Er/1. Multi-server model considered includes M/M/c and M/M/c/c. A comparison among the steady-state parameters evaluated for the above queuing models with respect to traffic intensity is also presented. © 2020, Springer Nature Singapore Pte Ltd.

**Document Type:** Book Chapter

**Publication Stage:** Final

**Source:** Scopus

- 19) Sekhar, C.H., Rao, K.V.

**A Study: Machine Learning and Deep Learning Approaches for Intrusion Detection System**

(2020) *Lecture Notes on Data Engineering and Communications Technologies*, 44, pp. 845-849.

**DOI:** 10.1007/978-3-030-37051-0\_94

Department of Computer Science and Engineering, Vignan's Institute of Information Technology, Visakhapatnam, India

**Abstract**

System security is one of the real worries of the difficult time. With the fast advancement and monstrous utilization of web

over the previous decade, the vulnerabilities of system security have turned into an important issue. Interruption identification framework is utilized to distinguish unapproved get to and uncommon assaults over the verified systems. High volume, assortment and fast of information produced in the system have made the information examination procedure to identify assaults by conventional strategies extremely troublesome. To comprehend the present status of usage of Machine and Deep learning methods for tackling the interruption recognition issues, this study paper listing out the related examinations in the continuous period focusing. This overview paper gives the various models of the detection system and briefly on Machine and Deep learning algorithms. © 2020, Springer Nature Switzerland AG.

**Document Type:** Book Chapter

**Publication Stage:** Final

**Source:** Scopus

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Editorial

# Scopus

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## Documents

Fiaidhi, J.<sup>a</sup>, Bhattacharyya, D.<sup>b</sup>, Thirupathi Rao, N.<sup>b</sup>

**Preface**

(2020) *Lecture Notes in Networks and Systems*, 105, p. ix.

<sup>a</sup> Department of Computer Science, Lakehead University, Thunder Bay, ON, Canada

<sup>b</sup> Department of Computer Science and Engineering, Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh, India

**Publisher:** Springer

**Document Type:** Editorial

**Publication Stage:** Final

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## Research Publications- 2021

*Source: Scopus database*



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## *Index*

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Articles

## Documents

- 1) Bhaskara Rao, M.P.V.V.<sup>a</sup>, Aditya, Y.<sup>b</sup>, Divya Prasanthi, U.Y.<sup>b</sup>, Reddy, D.R.K.<sup>c</sup>

**Anisotropic minimally interacting dark energy models with cosmic strings and a massive scalar field**  
(2021) *International Journal of Modern Physics A*, 36 (36), art. no. 2150260, .

**DOI:** 10.1142/S0217751X21502602

<sup>a</sup> Department of Basic Sciences and Humanities, Vignan's Institute of Information Technology (A), Visakhapatnam, India

<sup>b</sup> Department of Mathematics, GMR Institute of Technology, Rajam532127, India

<sup>c</sup> Department of Applied Mathematics, Andhra University, Visakhapatnam, 530003, India

**Abstract**

This paper deals with the construction of locally rotationally symmetric (LRS) Bianchi type-II (B-II) cosmological models obtained by solving Einstein field equations coupled with an attractive massive scalar field (MSF) when the source of gravitation is the mixture of cosmic string cloud and anisotropic dark energy (DE) fluid which are minimally interacting. We have obtained exact cosmological models by using (i) shear scalar is proportional to the scalar expansion of the space-time and (ii) a power-law relation between the average scale factor of the universe and the scalar field. Our models represent string cosmological model and DE model in the presence of MSF. Using our model, we determine cosmological parameters such as energy densities, deceleration parameter, statefinders and equation of state parameter. We, also, present the tension density and energy density of the string. We discuss the physical aspects of these cosmological parameters. It is observed that our models represent accelerated expansion phenomenon of our universe as confirmed by Supernova Ia experiment. © 2021 World Scientific Publishing Company.

**Publisher:** World Scientific

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 2) Devi, S.S.<sup>a</sup>, Satyanarayana, T.<sup>b</sup>, Sai Prasad, K.L.<sup>c</sup>

**CURVATURE TENSORS IN SP-KENMOTSU MANIFOLDS WITH RESPECT TO QUARTER- SYMMETRIC METRIC CONNECTION**

(2021) *Reliability: Theory and Applications*, 16 (4), pp. 210-218.

**DOI:** 10.24412/1932-2321-2021-465-210-218

<sup>a</sup> Department of Mathematics, Vignan's Institute of Information Technology, Visakhapatnam, 530 049, India

<sup>b</sup> Department of Mathematics, Pragati Engineering College, Near Peddapuram, Andhra Pradesh, Surampalem, India

<sup>c</sup> Department of Mathematics, Gayatri Vidya Parishad College of Engineering for Women, Visakhapatnam, 530 048, India

**Abstract**

A conformal curvature tensor and con-circular curvature tensor in an SP-Kenmotsu manifold are derived in this article which admits a quarter-symmetric metric connection. Conclusively, we verified our results by considering a case of 3-D SP-Kenmotsu manifold. © 2021 Departamento de Periodismo I de la Universidad de Sevilla.. All rights reserved.

**Publisher:** Gnedenko Forum

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus



- 3) Singuluri, I.<sup>a</sup>, Ravishankar, N.<sup>b</sup>

**A NOVEL TRANSPORTATION APPROACH TO SOLVING TYPE - 2 TRIANGULAR INTUITIONISTIC FUZZY TRANSPORTATION PROBLEMS**

(2021) *Reliability: Theory and Applications*, 16 (4), pp. 323-330.

**DOI:** 10.24412/1932-2321-2021-465-323-330

<sup>a</sup> Vignan's Institute of Information Technology (A), Duvvada, Visakhapatnam, India

<sup>b</sup> Gitam Deemed to be University, GIS, Visakhapatnam, India

**Abstract**

In this article we propose a new transportation strategy to achieve an ideal answer for triangular intuitionistic fuzzy transportation problem of type – 2 i.e., limits and requests are considered as real numbers and the transportation cost from cause to objective is considered as triangular intuitionistic fuzzy numbers as product cost per unit. The proposed method is solving by using ranking function. The appropriate response system is delineated with a numerical model. © 2021 Departamento de Periodismo I de la Universidad de Sevilla.. All rights reserved.

**Publisher:** Gnedenko Forum

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 4) Rudrabhiramu, R.<sup>a b</sup>, Kupireddi, K.K.<sup>c</sup>, Rao, K.M.<sup>b</sup>

**Study of Thermal Characteristics Augmentation of the Aluminium Oxide Nano Fluid with Different Base Fluids**

(2021) *International Journal of Heat and Technology*, 39 (6), pp. 2000-2005.

**DOI:** 10.18280/ijht.390639

<sup>a</sup> Department of Mechanical Engineering, Vignan's Institute of Information Technology, AP, Visakhapatnam, 530049, India

<sup>b</sup> Department of Mechanical Engineering, Jawaharlal Nehru Technological University, AP, Kakinada, 533003, India

<sup>c</sup> Department of Mechanical Engineering, National Institute of Technology, Telangana, Warangal, 506004, India

**Abstract**

Nanofluids have been widely studied over the past decade due to their extremely promising findings in terms of thermal transfer improvement techniques. These fluids have a number of potential benefits, including enhanced thermal resistance and heat transfer characteristics. The current study examines the numerical behavior of the square cavity loaded with a nanofluid for thermal enhancement under three different base fluid conditions (water, water-EG mixture, and EG). This square cavity edge is maintained at a length of 8 cm. Side edges are kept at constant high and low-temperature conditions, and bottom sides are insulated. Additionally, it is found that when the base fluid's composition changes between EG to water, heat transmission is increased. The ( $h_{nf}/h_{bf}$ ) ratio improves when the percent vol density of Al<sub>2</sub>O<sub>3</sub> nanoparticle increases, and an increase of up to 4.5 percent is possible. Consequently, the paper concluded that the use of nanofluids aids in heat transfer enhancement. © 2021 International Information and Engineering Technology Association. All rights reserved.

**Publisher:** International Information and Engineering Technology Association

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 5) Hindustani, R.K.<sup>a</sup>, Panda, P.K.<sup>b</sup>, Sahu, H.K.<sup>c</sup>

**Modified Monopole-CDR Hybrid Antenna**

(2021) *Journal of Electronic Materials*, 50 (12), pp. 6809-6817.

**DOI:** 10.1007/s11664-021-09230-x

<sup>a</sup> School of Electrical Sciences, IIT, Bhubanewar, Odisha 752050, India

<sup>b</sup> Department of Electronics and Communication Engineering, ITER, Siksha O Anusandhan (Deemed to be University), Bhubanewar, Odisha 751030, India

<sup>c</sup> Department of Electronics and Communication Engineering, Vignan's Institute of Information Technology, Vishakhapatnam, 530049, India

### Abstract

This paper presents bandwidth enhancement of a monopole antenna by hybridization with cylindrical dielectric resonator (CDR) elements. Dual resonance of the monopole is obtained when the electric current distribution is controlled by adding metallic branches and metallic sphere components. Two prototypes are proposed, incorporating the dual monopole modes and hybrid automatic (HEM)11 $\delta$  mode of CDR elements, promising an ultra-wideband (UWB) response with an omnidirectional radiation pattern. The first prototype is composed of two CDRs and a monopole branch which gives an operating bandwidth of 67.25% (6.01–12.1 GHz). The second prototype, with a small metallic sphere-loaded monopole, is surrounded symmetrically by four CDR elements. As a result, the impedance bandwidth is enhanced up to 76.61% (6.2–13.9 GHz). The simulated results including reflection coefficients, radiation patterns, and antenna gains are compared with the experimental results of the fabricated prototype, and good agreement is found between them. © 2021, The Minerals, Metals & Materials Society.

**Publisher:** Springer

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 6) Gangu, K.K.<sup>a c</sup>, Tharividi, S.G.<sup>a</sup>, Kerru, N.<sup>b c c</sup>, Jonnalagadda, S.B.<sup>c</sup>

**Excellent Catalytic Activity of Two Cd(II) Metal-Organic Frameworks in The Synthesis of Benzothiazolo-Pyrimidines** (2021) *ChemistrySelect*, 6 (42), pp. 11682-11689.

**DOI:** 10.1002/slct.202103536

<sup>a</sup> Vignan's Institute of Information Technology, Duvvada, Visakhapatnam, 530049, India

<sup>b</sup> Department of Chemistry, GITAM University, Bengaluru, Karnataka 561203, India

<sup>c</sup> School of Chemistry & Physics, University of KwaZulu-Natal, Westville Campus, Private Bag X54001, Durban, 4000, South Africa

### Abstract

We report the noteworthy catalytic activity of two three-dimensional, rigid and porous Metal-Organic Frameworks (MOFs) constructed from Cd(II) and 2,6-naphthalene dicarboxylic acid (2,6-ndc) ligand with different structural arrangements, namely [Cd<sub>3</sub>(2,6-ndc)<sub>3</sub>(DMF)<sub>4</sub>(NO<sub>3</sub>)]-(1) and [Cd<sub>2</sub>(2,6-ndc)<sub>2</sub>(DMF)<sub>2</sub>](2) in organic synthesis. Excellent porosity and Lewis acidic/basic centres accrued in the structural arrangement rendered both superb catalyst characteristics. Both MOFs exhibited perfect catalytic activity for the one-pot fusion of chosen substituted benzaldehyde, malononitrile and 2-amino benzothiazol to synthesise medicinally valuable benzothiazolo-pyrimidine derivatives. Eight novel benzothiazolo-pyrimidines were generated with 92–96 % yield in ethanol at room temperature with a short reaction time of 15–25 min. While both complexes showed excellent catalytic performance, MOF 1 exhibited superior activity due to more catalytic active sites. Overall, the protocol addressed the green approach to meet the conditions of green solvent, heterogeneity, catalyst repeatability up to six cycles, 98 % atom economy and 100 % carbon efficiency. © 2021 Wiley-VCH GmbH.

**Publisher:** John Wiley and Sons Inc

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 7) Vanapalli, K.R.<sup>a</sup>, Bhattacharya, J.<sup>a b</sup>, Samal, B.<sup>a</sup>, Chandra, S.<sup>a d</sup>, Medha, I.<sup>b</sup>, Dubey, B.K.<sup>a c</sup>

**Inhibitory and synergistic effects on thermal behaviour and char characteristics during the co-pyrolysis of biomass and single-use plastics**

(2021) *Energy*, 235, art. no. 121369, .

**DOI:** 10.1016/j.energy.2021.121369

<sup>a</sup> School of Environmental Science and Engineering, Indian Institute of Technology, Kharagpur, West Bengal 721302, India

<sup>b</sup> Department of Mining Engineering, Indian Institute of Technology, Kharagpur, West Bengal 721302, India

<sup>c</sup> Department of Civil Engineering, Indian Institute of Technology, Kharagpur, West Bengal 721302, India

<sup>d</sup> Department of Civil Engineering, Vignan's Institute of Information Technology, Duvvada, Visakhapatnam, Andhra Pradesh 530049, India

### Abstract

The co-pyrolytic behaviour of single-use plastics (Polystyrene, Low-density polyethylene) and Eucalyptus biomass was investigated at variable temperatures (300, 400, 500, and 600 °C) and the effects of their interactions on the characteristics of solid chars were also studied. The variation in thermal profiles of 'Δ Mass loss%' showed the inhibitory and synergistic effects of plastics on the biomass degradation, resulting in higher and lower yields of char composite, respectively. The blend containing polystyrene exhibited the highest synergistic ( $\Delta M \approx 15.1$ ) and inhibitory ( $\Delta M \approx -4$ ) effects. The thermal kinetics of blends also indicated the presence of both the effects through relatively higher and lower apparent activation energies compared to the calculated, before and during the degradation of plastics. Despite low fixed carbon contents and high volatile matter, polymer-coated char composites had higher fuel value indices (36–136%), energy yields (1–26%) and calorific values (15–21%), relative to biochar. After the complete degradation of plastics, char composites exhibited higher values of electrical conductivity (2–40%), surface area (15–64%), and cation exchange capacity (5–19%). These properties advocate the flexibility of char composites' applicability as solid fuel or soil amender depending on the optimized conditions of co-pyrolysis. © 2021

**Publisher:** Elsevier Ltd

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 8) Samal, B.<sup>a</sup>, Vanapalli, K.R.<sup>a</sup>, Dubey, B.K.<sup>a b</sup>, Bhattacharya, J.<sup>a c</sup>, Chandra, S.<sup>a d</sup>, Medha, I.<sup>c</sup>

### Char from the co-pyrolysis of Eucalyptus wood and low-density polyethylene for use as high-quality fuel: Influence of process parameters

(2021) *Science of the Total Environment*, 794, art. no. 148723, .

**DOI:** 10.1016/j.scitotenv.2021.148723

<sup>a</sup> School of Environmental Science and Engineering, Indian Institute of Technology, Kharagpur, West Bengal 721302, India

<sup>b</sup> Department of Civil Engineering, Indian Institute of Technology, Kharagpur, West Bengal 721302, India

<sup>c</sup> Department of Mining Engineering, Indian Institute of Technology, Kharagpur, West Bengal 721302, India

<sup>d</sup> Department of Civil Engineering, Vignan's Institute of Information Technology, Duvvada, Visakhapatnam, Andhra Pradesh 530049, India

### Abstract

Providing a valuable application to the under-utilized solid residue of co-pyrolysis of biomass and plastics could substantially improve economic and environmental sustainability of the process, thereby fostering circular economy. This study focuses on the variation of thermal and physiochemical characteristics of solid char, produced from the co-pyrolysis of waste low-density polyethylene (WLDPE) and Eucalyptus wood with varying pyrolysis temperatures from 300 to 550 °C, residence times of 90–150 min, and relative percentage of 33% and 25% (w/w) WLDPE in the feedstock. The highest values of yield (37%), energy density (1.25) and high heat value (31 MJ/Kg) were observed with the char produced at 300 °C. The physical inhibition caused by the overlaying plastic coating on the surface of the char below 450 °C resulted in the same. However, with the increase in temperature, increase in fuel ratio by 78–79% and fixed carbon content by 68–69% were observed. The highest concentrations of fixed carbon (39%), fuel ratio (0.81) along with the lowest O/C and H/C ratios (0.07 and 0.13) were observed with the chars produced above 450 °C depicting their high degree of carbonization. The fuel value indices of all the chars were > 500 GJ/m<sup>3</sup> indicating their suitability as high-quality fuels. Significant influences of residence time and feedstock ratio were also observed on properties of the char. The analysis of variance and principal component analysis also depicted significant variations in the properties of the char produced below and above the temperatures of 450 °C due to the inhibitory and synergetic effects. While the chars produced at 300–350 °C could be used for combustion/co-combustion in coal-fired boilers, chars produced above 450 °C can be opted as household fuel due to their low losses of energy, water vapour, and smoke during combustion. © 2021 Elsevier B.V.

**Publisher:** Elsevier B.V.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 9) Madhusudhana Rao, K.<sup>a</sup>, Vijay Sai, K.<sup>b</sup>, Rajasekhar, E.<sup>c</sup>, Seetharaman, D.<sup>b</sup>, Rani Rao, D.<sup>b</sup>, Venkataramaniah, K.<sup>b</sup>

### New Measurements of Internal Conversion Coefficients in 111Cd

(2021) *Physics of Atomic Nuclei*, 84 (6), pp. 817-825.

**DOI:** 10.1134/S1063778821130287

<sup>a</sup> Vignan's Institute of Information Technology, A.P., Visakhapatnam, India

<sup>b</sup> Laboratories for Nuclear Research, Department of Physics, Sri Sathya Sai Institute of Higher Learning, A.P., Prasanthi Nilayam, India

<sup>c</sup> Department of Physics, Rayalaseema University, A.P., Kurnool, India

**Abstract**

Abstract: The 7.5-day beta decay of <sup>111</sup>Ag is studied with a 60 cc HPGe gamma spectrometer system and a high transmission Mini-Orange magnetic spectrometer. Precise gamma energies and relative intensities of fourteen gamma transitions and conversion electron intensities of sixteen conversion lines of eleven gamma transitions have been determined. Normalized Peak to Gamma method has been used for the determination of K and L conversion coefficients of most of the gamma transitions in <sup>111</sup>AgCd for the first time, and compared with the theoretical values for assignment of multipolarities. The present conversion electron intensities would be of great use for calibrating electron detectors and electron transporters. © 2021, Pleiades Publishing, Ltd.

**Publisher:** Pleiades journals

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 10) Padhan, A.K.<sup>a</sup>, Sahu, H.K.<sup>a b</sup>, Sahu, P.R.<sup>a</sup>, Samantaray, S.R.<sup>a</sup>

**RIS Assisted Dual-Hop Mixed PLC/RF for Smart Grid Applications**

(2021) *IEEE Communications Letters*, 25 (11), pp. 3523-3527.

**DOI:** 10.1109/LCOMM.2021.3104630

<sup>a</sup> School of Electrical Sciences (SES), IIT Bhubaneswar, Bhubaneswar, India

<sup>b</sup> Department of Electronics and Communication Engineering, Vignans Institute of Information Technology, Visakhapatnam, 530049, India

**Abstract**

In this letter, we analyze the performance of reconfigurable intelligent surface (RIS) assisted mixed power line communication (PLC)/radio frequency (RF) system in smart grid application. In a smart grid, the data concentrator (DC) plays an important role in communication between the home appliances through the access point (AP). The DC can communicate using the existing PLC up to the AP, and the AP interacts with the home appliances with advanced communication technology like RIS-based RF communication. The modulation scheme is considered here as binary phase-shift keying (BPSK) modulation. Based on the system model, a closed-form expression for average bit error probability (ABEP) and outage probability (OP) are derived and analyzed by varying the various parameters like the number of reflectors in the RIS, impulsive noise scenario in the PLC channel. © 1997-2012 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 11) Hait, P.<sup>a b</sup>, Sil, A.<sup>a</sup>, Choudhury, S.<sup>c</sup>

**Modified Damage Assessment Method for Reinforced Concrete Buildings**

(2021) *Practice Periodical on Structural Design and Construction*, 26 (4), art. no. 04021039, .

**DOI:** 10.1061/(ASCE)SC.1943-5576.0000605

<sup>a</sup> Dept. of Civil Engineering, National Institute of Technology, Assam, Silchar, 788010, India

<sup>b</sup> Dept. of Civil Engineering, Vignan's Institute of Information Technology, Visakhapatnam, 530049, India

<sup>c</sup> Dept. of Civil Engineering, National Institute of Technology, Assam, Silchar, 78810, India

**Abstract**

A damage index study is necessary for evaluating the post-earthquake health of structures, and it is also required in performance based seismic design (PBSD), where engineers can design a structure for desired predefined target performance objectives. The existing damage assessment methods give different magnitudes of story damage index (SDI) or global damage index (GDI) for a given building under the same hazard level. These existing methods also give different SDI patterns. Therefore, it is difficult to identify the appropriate method to estimate the damage index (DI) for a structure. In this paper, 14 different existing damage assessment methods were studied to investigate their characteristics and reliability. The aim of this study is to determine appropriate and reliable damage assessment methods amongst the available existing methods, and to propose a new multivariate damage assessment model combining those reliable damage assessment methods. Based on the statistical hypothesis T-test conducted for 14 existing model equations, three methods are found to be most reliable and effective to assess the DI of buildings, meeting a 95% confidence level. Combining these three models, a new multivariate damage assessment model is proposed that shows a good agreement with those models, having  $R^2=0.91$ . This study resolves the ambiguity in selection of the most reliable methods among the existing models. © 2021 American Society of Civil Engineers.

**Publisher:** American Society of Civil Engineers (ASCE)

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 12) Shaw, S.K.<sup>a</sup>, Gangwar, A.<sup>a</sup>, Sharma, A.<sup>b</sup>, Alla, S.K.<sup>a,c</sup>, Kavita, S.<sup>d</sup>, Vasundhara, M.<sup>e</sup>, Meena, S.S.<sup>f</sup>, Maiti, P.<sup>g</sup>, Prasad, N.K.<sup>a</sup>

**Structural and magnetic properties of nanocrystalline equi-atomic spinel high-entropy oxide (AlCoFeMnNi)3O4 synthesised by microwave assisted co-precipitation technique**

(2021) *Journal of Alloys and Compounds*, 878, art. no. 160269, .

**DOI:** 10.1016/j.jallcom.2021.160269

<sup>a</sup> Department of Metallurgical Engineering, Indian Institute of Technology (Banaras Hindu University), Varanasi, 221005, India

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<sup>f</sup> Solid State Physics Division, Bhabha Atomic Research Centre, Mumbai, 400085, India

<sup>g</sup> School of Materials Science and Technology, Indian Institute of Technology (Banaras Hindu University), Varanasi, 221005, India

**Abstract**

Single phase equi-atomic (Al<sub>0.2</sub>Co<sub>0.2</sub>Fe<sub>0.2</sub>Mn<sub>0.2</sub>Ni<sub>0.2</sub>)<sub>3</sub>O<sub>4</sub> high-entropy oxide (HEO) having spinel structure was synthesised employing simple and cost effective microwave assisted co-precipitation technique, followed by calcination at 500 °C. The material obtained was highly crystalline and stable at higher temperatures. The uniformity in elemental distribution was apprehended through STEM-EDS elemental mapping. The X-ray photoelectron spectroscopy confirmed +3 ionic state for Fe and Al, while other elements oxidised to higher ionic states to maintain charge neutrality. Ferrimagnetic behaviour was confirmed for the obtained HEO through magnetic characterisations. © 2021 Elsevier B.V.

**Publisher:** Elsevier Ltd

**Document Type:** Article

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**Source:** Scopus

- 13) Chincholkar, S.P.<sup>a</sup>, Bhiogade, G.<sup>b</sup>, Loyte, A.<sup>c</sup>, Suryawanshi, J.G.<sup>c</sup>, Rehman, A.<sup>d</sup>

**Optimization of injection and spark timing in direct injection stratified charge (DISC) engine fueled with gasoline-ethanol blend**

(2021) *International Journal of Mechanical Engineering*, 6 (3), pp. 47-52.

<sup>a</sup> Kavikulguru Institute of Technology and Science, Ramtek, India

- <sup>b</sup> Vignan's Institute of Information Technology, Visakhapatnam, India  
<sup>c</sup> Visvesvaraya National Institute of Technology, Nagpur, India  
<sup>d</sup> Maulana Azad National Institute of Technology, Bhopal, India

**Abstract**

Direct injection stratified charge (DISC) engine is a hybrid concept between compression ignition and spark ignition engines. DISC engine incorporates some best features of both CI and SI engine with its additional own advantage. Multi-fuels can be used in this engine with improvement in thermal efficiency and reduction in harmful emissions like NOx. This includes multi-fuel capability, high thermal efficiency and low NOx emission production. Fuel is injected just before TDC position in this engine and the spark is used for the initiation of the combustion process. Throttling pressure drop losses are eliminated in this engine; as the engine power output is varied by regulating the fuel supply by keeping the air supply same. The present paper describes optimization of injection and spark timing, performance and emission characteristics of DISC engine using gasoline-ethanol blend. On the basis of experimentation, DISC engine runs well with ethanol and ethanol-gasoline blends. E50 (50% ethanol + 50% gasoline) is found to be more suitable blend with significantly reduced HC, CO, NOx emissions and with marginal reduction in brake thermal efficiency compared to pure gasoline. © Kalahari Journals.

**Publisher:** Kalahari Journals

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**Source:** Scopus

- 14) Varma, N.N.<sup>a</sup>, Naidu, C.G.<sup>b</sup>, Ramachandra, B.<sup>c</sup>, Swamy, A.M.<sup>d</sup>

**HPLC Bioassay of Elvitegravir using a Molecularly Imprinted Polymer Based Solid Phase Extraction in RAT Plasma: Application to Pharmacokinetic Studies**

(2021) *Journal of Analytical Chemistry*, 76 (10), pp. 1172-1181.

**DOI:** 10.1134/S1061934821100129

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<sup>b</sup> Department of Basic Sciences and Humanities (BS&H), Vignan's Institute of Information Technology (VIIT), Besides VSEZ Vadlapudi Duvvada, Visakhapatnam, Andhra Pradesh 530049, India

<sup>c</sup> Government College for Men, Andhra Pradesh, Kadapa, 516004, India

<sup>d</sup> Research Scientist, Sir CR Reddy Autonomous College, Eluru, Andhra Pradesh 534007, India

**Abstract**

Abstract: A water-compatible molecularly imprinted polymer (MIP) was prepared for specific extraction of HIV-1 integrase inhibitor elvitegravir (EVG). It was prepared by a non-covalent free radical polymerization process using methacrylic acid as a monomer and elvitegravir as a template molecule. The MIP based solid phase extraction (MIP-SPE) cartridge was constructed for specific extraction of EVG from rat plasma samples. The effect of porogenic solvents, cross linker, pH and monomer to template ratio were studied. The developed HPLC method was validated as per ICH guidelines. The recovery of EVG using MIP-SPE technique was 98%. The LOD and LOQ of EVG were 0.01 and 0.05 µg/mL, respectively. The established method may not only be used to determine EVG but also to study the pharmacokinetics in rat plasma samples. © 2021, Pleiades Publishing, Ltd.

**Publisher:** Pleiades journals

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 15) Radhakrishnan, A.<sup>a</sup>, Prasad, R.<sup>b</sup>, Appaiah, K.<sup>a</sup>

**Efficient multiplexing using delayed CSI in few-mode fiber links**

(2021) *Optical Fiber Technology*, 66, art. no. 102664, .

**DOI:** 10.1016/j.yofte.2021.102664

<sup>a</sup> Department of Electrical Engineering, Indian Institute of Technology Bombay, Mumbai, 400076, India

<sup>b</sup> Department of Electronics and Communication Engineering, Vignan's Institute Of Information Technology, Visakhapatnam, Andhra Pradesh 530049, India

**Abstract**

The constant demand for high data rates has resulted in few-mode optical fiber (FMF) based multiplexed systems an attractive solution. While the separability of FMF modes permits effective multiplexing, modal dispersion limits data rates. Conventional signal processing based approaches to compensate for modal dispersion incur significant computational complexity. On the other hand of principal modes (PMs) can mitigate dispersion with very little compensation requirements at the receiver. However, in the presence of high mode-dependent losses (MDL), the PMs' performance degrades significantly. In this paper, we propose the use of a polar decomposition based scheme, wherein the impairments of the fiber can be viewed as a cascade of a dispersive system and a lossy (MDL) system. Compensating for the MDL using polar decomposition permits the use of PMs with near optimal performance. Further, we discuss effective quantization techniques to track the variation of PMs and propose effective low-rate feedback mechanisms for PM feedback to the transmitter for optimized transmission, with interpolation across WDM channels to reduce the feedback burden. Finally, we also discuss the impact of delay in feedback on achievable rate when the fiber channel undergoes temporal variation. Simulations reveal that the polar decomposition and quantized PM approach yields effective data rates for various fiber conditions, even with temporal channel variations, thereby indicating that this would be a promising solution for low complexity multiplexing based FMF systems. © 2021 Elsevier Inc.

**Publisher:** Academic Press Inc.

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**Publication Stage:** Final

**Source:** Scopus

- 16) Sekhar, P.<sup>a</sup>, Lydia, E.L.<sup>b</sup>, Elhoseny, M.<sup>c f</sup>, Al-Akaidi, M.<sup>c</sup>, Selim, M.M.<sup>d</sup>, Shankar, K.<sup>e</sup>

**An effective metaheuristic based node localization technique for wireless sensor networks enabled indoor communication**

(2021) *Physical Communication*, 48, art. no. 101411, .

**DOI:** 10.1016/j.phycom.2021.101411

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<sup>e</sup> Department of Computer Applications, Alagappa University, Karaikudi, India

<sup>f</sup> Faculty of Computers and Information, Mansoura University, Egypt

**Abstract**

Recently, wireless sensor network (WSN) enabled indoor communication provides an effective and flexible method for local area networks mainly in large buildings or in a group of several buildings. Node localization can be considered as a major process which helps to calculate the coordinate points of the unknown nodes with the assistance of known (anchor) nodes. Earlier studies have considered node localization problem as an NP hard problem. Several metaheuristics techniques are employed for resolving the localization problem in WSN that extremely decreases the localization error. This paper designs an effective metaheuristic-based Group Teaching Optimization Algorithm for Node Localization (GTOA-NL) technique for WSN. The goal of the GTOA-NL technique is to determine the position of the unknown nodes by the use of anchor nodes in the WSN with minimum localization error and maximum localization accuracy. The presented GTOA is stimulated from the group teaching strategy and it can be used for optimization process with no loss of generality. In order to guarantee the effective node localization performance of the presented GTOA-NL model, an extensive set of simulations were performed to highlight the supremacy of the GTOA-NL model. The obtained results have ensured the superior performance of the GTOA-NL model over the other compared methods under varying number of anchor nodes, ranging error, and transmission range. © 2021 Elsevier B.V.

**Publisher:** Elsevier B.V.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 17) Samal, B.<sup>a</sup>, Vanapalli, K.R.<sup>a</sup>, Dubey, B.K.<sup>a b</sup>, Bhattacharya, J.<sup>a c</sup>, Chandra, S.<sup>a d</sup>, Medha, I.<sup>c</sup>

**Influence of process parameters on thermal characteristics of char from co-pyrolysis of eucalyptus biomass and**

**polystyrene: Its prospects as a solid fuel**(2021) *Energy*, 232, art. no. 121050, .**DOI:** 10.1016/j.energy.2021.121050<sup>a</sup> School of Environmental Science and Engineering, Indian Institute of Technology, Kharagpur, West Bengal 721302, India<sup>b</sup> Department of Civil Engineering, Indian Institute of Technology, Kharagpur, West Bengal 721302, India<sup>c</sup> Department of Mining Engineering, Indian Institute of Technology, Kharagpur, West Bengal 721302, India<sup>d</sup> Department of Civil Engineering, Vignan's Institute of Information Technology, Duvvada, Visakhapatnam, Andhra Pradesh 530049, India**Abstract**

The prospects of chars derived from the co-pyrolysis of waste polystyrene (WPS) and eucalyptus biomass at variable temperatures (300–550 °C), residence times (90–150 min) and proportions of WPS (w/w) (33% and 25%) for their potential use as a solid fuel were assessed. The production of char suggested an improved fuel quality compared to the raw feedstock because of reduced volatile and oxygen contents, along with an increase in the carbon and fixed carbon contents. While the properties of the char such as energy density (1.12–1.30), high heat value (28.03–32.5 MJ/kg) had their maximum values observed with 33% WPS content at 300 °C, fixed carbon (4.5–34.19%), fuel ratio (0.05–0.64) were maximum with 25% WPS content at 550 °C. Moreover, the energy yield of the char was higher than the mass yield. The chars produced at 300, 350 °C were observed to have O/C and H/C ratios similar to that of sub-bituminous and bituminous coal. Principal component analysis presented the variable effects of WPS on the properties of the char through physical inhibition and synergistic interactions below and above the complete volatilization temperature of WPS. © 2021 Elsevier Ltd

**Publisher:** Elsevier Ltd**Document Type:** Article**Publication Stage:** Final**Source:** Scopus

- 18) Yoganjaneyulu, G.<sup>a</sup>, Vigneshwaran, S.<sup>b</sup>, Palanivel, R.<sup>c</sup>, Alblawi, A.<sup>c</sup>, Rasheed, M.A.<sup>d</sup>, Laubscher, R.F.<sup>e</sup>

**Effect of Tool Rotational Speed on the Microstructure and Associated Mechanical Properties of Incrementally Formed Commercially Pure Titanium**(2021) *Journal of Materials Engineering and Performance*, 30 (10), pp. 7636-7644.**DOI:** 10.1007/s11665-021-05900-3<sup>a</sup> Advanced Metal Forming Laboratory, Department of Mechanical Engineering, Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh 530049, India<sup>b</sup> Department of Mechanical Engineering, National Institute of Technology Puducherry, Karaikal, 609609, India<sup>c</sup> Department of Mechanical Engineering, College of Engineering, Shaqra University, P.O. 11911, Dawadmi, Ar Riyadh, Saudi Arabia<sup>d</sup> Department of Civil Engineering, College of Engineering, Shaqra University, P.O. 11911, Dawadmi, Ar Riyadh, Saudi Arabia<sup>e</sup> Department of Mechanical Engineering Science, University of Johannesburg, Auckland Park Kingsway Campus, Johannesburg, 2006, South Africa**Abstract**

Single-point incremental forming (SPIF) was conducted on a 1-mm-thick commercially pure titanium grade 2 (Ti-G2) sheet metal in a CNC vertical milling unit. A hardened steel ball of 12 mm diameter was used as forming tool. Frustum cups were formed with varying spindle speeds between 300, 450, and 600 RPM. Other process parameters including the vertical step down and feed rate were kept as 0.2 mm and 300 mm/min, respectively. The metallurgical and mechanical properties of the formed material were investigated by cutting samples from the frustum cup walls. Electron-backscattered diffraction (EBSD) investigation revealed limited change in grain size with an increase in spindle speed. Dislocation density was measured by x-ray diffraction peak broadening analysis. The results indicate that an increase in spindle speed resulted in an increased dislocation density. The EBSD-based textural studies revealed a strong basal texture with near P and B type orientations visible at the maximum spindle speed. The tensile tests demonstrated a proportional increase in tensile strength with an increase in spindle speed along with a significant reduction in total ductility. The enhanced dislocation density and the formation of a strong basal texture were considered as the main drivers for the improvement in the tensile strength. A maximum tensile strength of nearly 550 MPa was obtained for samples extracted from the walls of the frustum cup at the maximum spindle speed of 600 RPM. This translates to an 80% enhancement of the tensile strength when compared to the base metal. © 2021, ASM International.

**Publisher:** Springer



**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

- 19) Satyanarayana, V.S.V.<sup>a</sup>, Gopala Rao, L.V.V.<sup>a</sup>, Sateesh, B.<sup>a</sup>, Mohan Rao, N.<sup>b</sup>

**Computation of passive suspension parameters for improvement of vehicle ride quality based on stochastic optimal controller with a look-ahead preview**

(2021) *Noise and Vibration Worldwide*, 52 (9), pp. 233-242.

**DOI:** 10.1177/09574565211000390

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<sup>b</sup> Department of Mechanical Engineering, Jawaharlal Nehru Technological University, Kakinada, India

**Abstract**

This article aims to determine the optimum parameters of a half-car model passive suspension vehicle passing on a random road. The optimum parameters are obtained based on the response of linear quadratic regulator control with a look-ahead preview for attaining the passive suspension performance nearly equivalent to the active suspension performance. The optimum parameters are estimated by equalizing mean square suspension controlling forces of passive and active vehicle models and subsequently minimizing the performance error between the two systems. The response of passive suspension with optimized parameters matches approximately with the active suspension response, with respect to ride comfort and road holding. © The Author(s) 2021.

**Publisher:** SAGE Publications Inc.

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

- 20) Shaw, S.K.<sup>a</sup>, Kailashiya, J.<sup>b</sup>, Gangwar, A.<sup>a</sup>, Alla, S.K.<sup>a,c</sup>, Gupta, S.K.<sup>d,f</sup>, Prajapat, C.L.<sup>e,f</sup>, Meena, S.S.<sup>g</sup>, Dash, D.<sup>b</sup>, Maiti, P.<sup>h</sup>, Prasad, N.K.<sup>a</sup>

**$\gamma$ -Fe<sub>2</sub>O<sub>3</sub> nanoflowers as efficient magnetic hyperthermia and photothermal agent**

(2021) *Applied Surface Science*, 560, art. no. 150025, .

**DOI:** 10.1016/j.apsusc.2021.150025

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<sup>h</sup> School of Materials Science and Technology, Indian Institute of Technology (Banaras Hindu University), Varanasi, 221005, India

**Abstract**

Recent reports on the magnetic nanoparticles (MNPs) as an efficient and alternative photothermal agent have excited the researchers worldwide. While MNPs have been explored well for high heating performance during magnetic hyperthermia (MHT), their full potential is yet to be explored as an efficient photothermal agent. In addition, the simultaneous exposure of alternating magnetic field (for MHT) and near infrared irradiation (for photothermal therapy PTT) can drastically enhance the heating behaviour of MNPs. In the present work we explored microwave assisted polyol method to get  $\gamma$ -Fe<sub>2</sub>O<sub>3</sub> nanoflowers. The use of sodium acetate in varying amounts, as an alkali source, allowed the modification of structural and magnetic properties leading to the formation of nanoflower with high heating performance during MHT and PTT. Role of defects in  $\gamma$ -Fe<sub>2</sub>O<sub>3</sub> nanoflowers were investigated using photoluminescence spectroscopy which highlighted distinct role of oxygen vacancies and surface states. The nanoflowers with better crystallinity and relatively higher coercive field performed well during MHT. The observed high intrinsic loss power value of  $15.21 \pm 0.34$  nHm<sup>2</sup>/Kg-as significantly higher than the commercially available ferrofluids and previously reported values for nanoflowers. During PTT, the therapeutic temperature

of 42 °C was achieved for the aqueous suspension with a concentration as low as 100 µg/mL which demonstrates the superiority of  $\gamma$ -Fe<sub>2</sub>O<sub>3</sub> nanoflowers as an efficient PTT agent. © 2021 Elsevier B.V.

**Publisher:** Elsevier B.V.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 21) Pustokhina, I.V.<sup>a</sup>, Pustokhin, D.A.<sup>b</sup>, Lydia, E.L.<sup>c</sup>, Elhoseny, M.<sup>d e</sup>, Shankar, K.<sup>f</sup>

**Energy Efficient Neuro-Fuzzy Cluster based Topology Construction with Metaheuristic Route Planning Algorithm for Unmanned Aerial Vehicles**

(2021) *Computer Networks*, 196, art. no. 108214, .

**DOI:** 10.1016/j.comnet.2021.108214

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<sup>e</sup> Faculty of Computers and Information, Mansoura University, Egypt

<sup>f</sup> Department of Computer Applications, Alagappa University, Karaikudi, India

**Abstract**

At present times, unmanned aerial vehicles (UAVs) received significant attention among several application areas and services in both defense and civilian domains. The existence of many UAVs performs difficult process effectually when they are arranged in an adhoc way. The restricted battery capacity of the UAVs, rapid mobility, and high dynamic nature of the UAVs necessities the design of energy efficient clustering and routing protocols. With its motivation, this paper develops an Energy Efficient Neuro-Fuzzy Cluster based Topology Construction with Metaheuristic Route Planning (EENFC-MRP) algorithm for UAVs. The presented model involves EENFC based clustering and MRP based routing processes. The EENFC model make use of three input parameters namely Residual Energy in UAV, Average Distance to Nearby UAVs, and UAV Degree for the cluster construction. In addition, Quantum Ant Lion Optimization (QALO) based MRP is applied to choose an optimal set of routes for intercluster UAV communication. In order to investigate the energy efficient outcome of the EENFC-MRP algorithm, a series of simulation processes were carried out and the results are examined under several aspects. The resultant experimental values ensured the betterment of the EENFC-MRP algorithm over the existing models interns of energy efficiency, throughput, network lifetime, and average delay. © 2021

**Publisher:** Elsevier B.V.

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**Source:** Scopus

- 22) Soujanya, M.L.<sup>a</sup>, Laxmi, P.V.<sup>b</sup>

**Analysis on dual supply inventory model having negative arrivals and finite life time inventory**

(2021) *Reliability: Theory and Applications*, 16 (3), pp. 295-301.

**DOI:** 10.24412/1932-2321-2021-363-295-301

<sup>a</sup> Department of Mathematics, Vignan's Institute of Information Technology (Autonomous), Visakhapatnam, India

<sup>b</sup> Department of Applied Mathematics, Andhra University, Visakhapatnam, India

**Abstract**

In this paper the impact of dual supply chain on a perishable inventory model with negative arrivals is evaluated. The perishable and replenishment rates of dual suppliers are distributed exponentially. Arrival process follows Poisson distribution and the probability for an ordinary customer is  $p$  and for the negative customer is  $q$ . Limiting distribution of the assumed model is obtained. Numerical results are presented for cost function and various system performance parameters. The impact of dual suppliers on the optimal reorder points will be useful in developing strategies for handling various perishable inventory problems with replenishment rates. © 2021 Gnedenko Forum. All Rights Reserved.

**Publisher:** Gnedenko Forum

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**Publication Stage:** Final

**Source:** Scopus

- 23) Ramisetty, U.M.<sup>a</sup>, Chennupati, S.K.<sup>b</sup>, Gundavarapu, V.N.K.<sup>c</sup>

**Design of Training Sequences for Multi User—MIMO with Accurate Channel Estimation Considering Channel Reliability Under Perfect Channel State Information Using Cuckoo Optimization**

(2021) *Journal of Electrical Engineering and Technology*, 16 (5), pp. 2743-2756.

**DOI:** 10.1007/s42835-021-00778-6

<sup>a</sup> Vignan's Institute of Information Technology, Visakhapatnam, India

<sup>b</sup> GITAM University, Visakhapatnam, India

<sup>c</sup> JNTUA College of Engineering Pulivendula, Pulivendula, India

**Abstract**

Designing the time domain training sequences is very critical in multi carrier transmission which degrades the performance as it is contaminated by different blocks in different cells. To improve the spectral efficiency and high accuracy, MU-MIMO needs the sensing matrix to be reduced by using the training sequence design and optimization. Integrating the training sequence design and sparse channel estimation improves the capacity of the system. The capacity can be enhanced by reducing the bit error rate. The system capacity for multi user- multi-input and multi output (MU-MIMO) is studied by proper channel estimation with compressed sensing model. The design and optimization of training sequence is analysed for MU-MIMO model using auto coherence and block coherence matrices. The block coherence matrix is optimized using cuckoo algorithm for obtaining lower coherence value for different sparsity values. The performance improvement in terms of signal to noise ratio is 1 dB for single user- multi-input and multi output (SU-MIMO) using genetic algorithm and the performance of MU-MIMO is observed to be 0.93 dB using cuckoo algorithm. © 2021, The Korean Institute of Electrical Engineers.

**Publisher:** Korean Institute of Electrical Engineers

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 24) Ramisetty, U.M.<sup>a</sup>, Chennupati, S.K.<sup>b</sup>

**Performance Analysis of Multi User Mimo System With Successive Hybrid Information and Energy Transfer Beamformer**

(2021) *Wireless Personal Communications*, 120 (1), pp. 249-267.

**DOI:** 10.1007/s11277-021-08450-y

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**Abstract**

The current proliferation of communication networks such as MU-MIMO necessitates high throughput coupled with high data rates. For maximization of harvested power the power received must be increased. However, this causes an increase in interference adversely affecting the sum rate. It is imperative to work out the trade-off between energy harvesting and spectral efficiency which is directly related to the sum rate. This paper proposes the logic of optimization by the weighted coefficient method using successive hybrid information and energy transfer (SHIET) so that a trade-off can be achieved. As the multi-objective optimization seems to be more difficult, this is modified to a single-objective optimization using weight factor method. This method calculates channel state information (CSI) from the angle of perfectness which directly gives the sum rate. Further harvested power is calculated from achievable sum rate and truth value is determined by various weight coefficient factors. Simulation is carried out on MU-MIMO system for ascertaining the effectiveness of the proposed method for achieving an optimized trade-off between energy harvesting and spectral efficiency. The performance of trade-off is better with linear beamformers that employs ZF and MRT with a smaller number of information users, whereas the performance of SHIET outperforms when compared to the linear beamformers irrespective of any number of information users. © 2021, The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature.

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**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

- 25) Manne, S.<sup>a</sup>, Lydia, E.L.<sup>b</sup>, Pustokhina, I.V.<sup>c</sup>, Pustokhin, D.A.<sup>d</sup>, Parvathy, V.S.<sup>e</sup>, Shankar, K.<sup>f</sup>

**An intelligent energy management and traffic predictive model for autonomous vehicle systems**  
 (2021) *Soft Computing*, 25 (18), pp. 11941-11953.

**DOI:** 10.1007/s00500-021-05614-7

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#### **Abstract**

In recent times, the utilization of autonomous vehicles (AVs) has been significantly increased over the globe. It is because of the tremendous rise in familiarity and the usage of artificial intelligence approaches in distinct application areas. Though AVs offer several benefits like congestion control, accident prevention, and so on, energy management and traffic flow prediction (TFP) remain a challenging issue. This paper concentrates on the design of intelligent energy management and TFP (IEMTFP) technique for AVs using multi-objective reinforced whale optimization algorithm (RWOA) and deep learning (DL). The proposed model involves an energy management module using fuzzy logic system to reach the specified engine torque with respect to different measures. For optimal tuning of the variables involved in the fuzzy logic membership functions (MFs), RWOA is employed to further reduce the energy utilization. Besides, the proposed model uses a DL-based bidirectional long short-term memory (Bi-LSTM) technique to perform TFP. For validating the efficacy of the IEMTFP technique, an extensive experimental validation is carried out. The resultant values ensured the goodness of the IEMTFP model in terms of energy management and TFP. © 2021, The Author(s), under exclusive licence to Springer-Verlag GmbH, DE part of Springer Nature.

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**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

- 26) Prasadarao, B.<sup>a</sup>, Kolakoti, A.<sup>b</sup>, Sekhar, P.<sup>a</sup>

**Exhaust emission characteristics of a three-wheeler auto diesel engine fueled with pongamia, mahua and jatropha biodiesels**

(2021) *Recent Advances in Computer Science and Communications*, 14 (6), pp. 1824-1832.

**DOI:** 10.2174/2666255813666191204143202

<sup>a</sup> Department of Electrical and Electronics Engineering, Vignans Institute of Information Technology, Visakhapatnam, India

<sup>b</sup> Department of Mechanical Engineering, Raghu Engineering College, Visakhapatnam, India

#### **Abstract**

**Background:** In India, three-wheeler auto diesel engines are also known as autorickshaw, play a vital role in day to day transportation. On the other hand, it pumps huge amount of harmful exhaust emissions into the atmosphere. As per the study by European Union 1% of India's over two billion tonnes of annual vehicular CO<sub>2</sub> emissions are from autorickshaws. **Objective:** To address the issue of high exhaust emissions from diesel engine, this paper has proposed Pongamia (PME), Mahua (PME) and Jatropha (JME) biodiesels as an alternative fuel. **Methods:** Biodiesel is produced by transesterification process; exhaust emissions analysis is carried out on a single cylinder four stroke three-wheeler auto diesel engine at constant speed of 1500rpm. Diesel as a reference fuel and cent percent of PME, MME, and JME as an alternative fuel. **Results:** Exhaust emissions reveals that there is a maximum reduction of Unburnt Hydrocarbons (UHC), Carbon Monoxide (CO), NO<sub>x</sub>, Carbon Dioxide (CO<sub>2</sub>), and smoke compared to diesel fuel. At maximum load the NO<sub>x</sub> emission reduced by 18.41% for JME, 17.46% for MME and 7.61% for PME. Low levels of CO emissions are recorded for JME (66%) followed by

MME (33%) and PME (22%). UHC were reduced by 85.75% for JME, MME and for PME 14.28% reduction is observed. Smoke emissions are also reduced for PME and MME by 18.84%, for JME 14.49%. Conclusion: It is observed that all the methyl esters exhibit significant reduction in harmful exhaust emissions compared to diesel fuel and jatropha biodiesel is noted as a better choice. © 2021 Bentham Science Publishers.

**Publisher:** Bentham Science Publishers

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**Publication Stage:** Final  
**Source:** Scopus

- 27) Chandra Sekhar, P.<sup>a</sup>, Thirupathi Rao, N.<sup>b</sup>, Bhattacharyya, D.<sup>c</sup>, Kim, T.-H.<sup>d</sup>

**Segmentation of natural images with k-means and hierarchical algorithm based on mixture of Pearson distributions**  
 (2021) *Journal of Scientific and Industrial Research*, 80 (8), pp. 707-715.

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<sup>d</sup> Glocal Campus, Konkuk University, Chungcheongbuk-do, Chungju-si, 27 478, South Korea

#### Abstract

In this paper, an attempt has been made to analyze the performance of the image segmented algorithms with the addition of the Pearsonian Type III mixture model. By using the Type III Pearsonian system of distributions the image segmentation process was carried out in the current article which is a novel technique. With the help of K-component combination of Pearsonian Type III distribution, it is considered that the whole input images are characterized. The performance parameters PRI (Probabilistic Rand Index), GCE (Global Consistency Error) and VOI (Volume of Interest) for the currently considered model are estimated with the help of EM (Expectation Maximization) algorithm. For analyzing the proposed model's performance, four random images are selected as input for the current model from Berkeley image database. The performance metric parameters PRI, GCE and VOI values given the results as the currently proposed method is providing more precise results for the input images where the regions of the input images selected are with tiles having long upper model and the left skewed images. By the help of image quality measures, the proposed method is performing well for the purpose of retrieving the images with respect to the picture segmenting process which is based on GMM (Gaussian Mixture Model). The current model performance was compared with the other existing models like the k-means hierarchical clustering model and the 3-parameter regression models. © 2021 Scientific Publishers. All rights reserved.

**Publisher:** National Institute of Science Communication and Information Resources

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

- 28) Bhattacharyya, D.<sup>a</sup>, Swathi, K.<sup>b</sup>, Rao, N.T.<sup>c</sup>, Kumari, N.M.J.<sup>a</sup>

**Long term prediction of rainfall in Andhra Pradesh with Deep learning**  
 (2021) *Journal of Medical Pharmaceutical and Allied Sciences*, 10 (4), pp. 3132-3137.

**DOI:** 10.22270/jmpas.V10I4.1397

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#### Abstract

Rainfall is the major concern for almost types of people in the society. It helps different types of people in the society in different means. For some people, it's the source of providing drinking water. For others like farmers, it's the source of their livelihood and for all other human beings too. As farmers grow the farm and rice will be produced for the human being to eat. As a whole, the rainfall plays a key role for almost all kinds of people living in the society. Prediction of this rainfall is always an interesting and useful news for any kind of people in the society. Especially for the government agencies, it's a very useful source as based on predictions, the harvesting and storing of water could be prepared well in advance. It also

plays a key role in the production of power or generation power with the help of water flow in dams and reservoirs. In the article, an attempt has been made to build a system that takes input of previous years rainfall data from dataset which was collected from the Meteorology department of Andhra Pradesh and predict the average amount of rainfall of upcoming months in a specific year. We have initially separated the available data into training and testing data sets and made a model. We had applied various statistical and machine learning approaches like the linear model, Support Vector Machine algorithms etc. in predicting the results, along with a Neural Network model and made analysis over various approaches and compared their results with actual data. By these various approaches, the error of prediction was minimized and increased the accuracy of results predicted by the model. © 2021 MEDIC SCIENTIFIC. All Rights Reserved.

**Publisher:** MEDIC SCIENTIFIC

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

29) Sahu, H.K.<sup>a</sup>, Sahu, S.K.<sup>b</sup>, Prasad, R.<sup>a</sup>

**Analysis of SWIPT based dual-hop AF relay with SSK modulation over Nakagami-m fading channel**  
(2021) *AEU - International Journal of Electronics and Communications*, 138, art. no. 153881, .

**DOI:** 10.1016/j.aeue.2021.153881

<sup>a</sup> Department of ECE, Vignan's Institute of Information Technology, Visakhapatnam, AP 530049, India

<sup>b</sup> Department of Physics, National Institute of Technology, Raipur, Chhatisgarh 492010, India

#### **Abstract**

Space shift keying (SSK) modulation performance is analyzed with simultaneous wireless information and power transfer (SWIPT) based cooperative amplify-and-forward (AF) relaying system over the Nakagami-m fading channel. SWIPT technique can remove the need for power supply at the relays in cooperative communication. In contrast, SSK is a low complex index modulation technique that eliminates inter antenna synchronization, inter-channel interference and reduces the number of radiofrequency chains. Closed-form expression for average bit error probability (ABEP) is derived using a single AF relay with selection combining (SC) at the receiver, and an Upper bound ABEP expression is derived for multiple AF relays with the direct link (DL) from source to destination. The partial relay selection (PRS) technique has been proposed with energy harvesting (EH) to reduce the hardware complexity compared to the multiple relays. Numerical and computer simulation results are presented with the discussion. The result demonstrates that EH with SSK modulation can improve the system performance. © 2021 Elsevier GmbH

**Publisher:** Elsevier GmbH

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

30) Sahu, H.K.

**Performance Analysis of Energy Harvesting-Based Smart Grid Dynamic HAN with SSK Modulation**  
(2021) *IEEE Communications Letters*, 25 (8), art. no. 9441015, pp. 2527-2530.

**DOI:** 10.1109/LCOMM.2021.3083966

Department of Electronics and Communication Engineering, Vignan's Institute of Information Technology, Visakhapatnam, India

#### **Abstract**

This letter analyzes the performance of a dynamic home area network (HAN) for smart grid communication using space shift keying modulation and energy harvesting. HAN plays a vital role in communication between home appliances and smart meters. The network considered here is with the multiple numbers of transmitting antennas at each home appliance and a single receiving antenna at the smart meter, which operates under the Saleh-Valenzuela channel. The average bit error probability performance of the indoor HAN with wireless power communication is derived in closed form by implementing the multi-user selection combining method. The numerical results and simulation results are presented to illustrate the impact of energy harvesting on system performance. © 1997-2012 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Article

**Publication Stage:** Final  
**Source:** Scopus

31) Ravi Sankar, R.S., Venkatesh, A., Kollipara, D.

**Adaptive hysteresis band current control of grid connected PV inverter**  
(2021) *International Journal of Electrical and Computer Engineering*, 11 (4), pp. 2856-2863.

**DOI:** 10.11591/ijece.v11i4.pp2856-2863

Department of Electrical and Electronics Engineering, Vignan's Institute of Information Technology, Andhra Pradesh, India

#### **Abstract**

In this paper, adaptive hysteresis band current controller is implemented to control the current injected into the grid. Initially it was implemented by B.K Bose for control of the machine drive. Now it is implemented for the grid connected PV inverter, to control the current injected into Grid. It is well suitable for the distribution generation. The adaptive hysteresis band controller changes the bandwidth based on the modulating frequency, supply voltage, input DC voltage and slope of the reference current. Consequently, the controller generates pulses to the inverter. It is advantageous over the conventional hysteresis controller, as the switching frequency is maintained almost constant. Thereby quality of grid current is also improved. It is verified in time domain analysis of simulation using MATLAB. © 2021 Institute of Advanced Engineering and Science. All rights reserved.

**Publisher:** Institute of Advanced Engineering and Science

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

32) Sujitha, B.<sup>a</sup>, Parvathy, V.S.<sup>b</sup>, Lydia, E.L.<sup>c</sup>, Rani, P.<sup>d</sup>, Polkowski, Z.<sup>e</sup>, Shankar, K.<sup>f</sup>

**Optimal deep learning based image compression technique for data transmission on industrial Internet of things applications**  
(2021) *Transactions on Emerging Telecommunications Technologies*, 32 (7), art. no. e3976, .

**DOI:** 10.1002/ett.3976

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<sup>e</sup> Technical Sciences, Jan Wyzykowski University, Polkowice, Poland

<sup>f</sup> Department of Computer Applications, Alagappa University, Karaikudi, India

#### **Abstract**

Recently, industrial Internet of things becomes more popular and it involves a group of intelligent devices linked to create systems which observe, gather, communicate, and investigate data. In this view, the demand for compression techniques in remote sensing images is increasing since low complexity technique is required in spacecraft. Deep learning, for instance, convolutional neural network (CNN) has gained more attention in the domain of computer vision, particularly for high-level applications like detection along with interpretation. At the same time, it is difficult to resolve the low-level applications like image compression and it is investigated in this article. This article presents an optimal compression technique using CNNs for remote sensing images. The proposed method uses CNN for learning the compact representation of the original image which held the structural data and was then coded by Lempel Ziv Markov chain algorithm. Next, the encoded image was reconstructed to retrieve the original image with high reconstructed image quality. The proposed optimal compression technique is compatible with the available image codec standards. Wide range of experiments was carried out and the results were compared with binary tree and optimized truncation, JPEG, and JPEG2000 in terms of compression efficiency, reconstructed image quality, and space saving (SS). The obtained results apparently proved the effectiveness of the presented method, which attains an average peak signal to noise ratio of 49.90 dB and SS of 89.38%. © 2020 John Wiley & Sons, Ltd.

**Publisher:** John Wiley and Sons Inc

**Document Type:** Article  
**Publication Stage:** Final

**Source:** Scopus

33) Gangwar, A.<sup>a</sup>, Alla, S.K.<sup>b</sup>, Prasad, N.K.<sup>a</sup>

**RF induction heating and in-vitro study of citrate functionalized Zr-substituted Fe<sub>3</sub>O<sub>4</sub> nanoparticles with human lung adenocarcinoma (A549) cell**

(2021) *Physica B: Condensed Matter*, 611, art. no. 412970, .

**DOI:** 10.1016/j.physb.2021.412970

<sup>a</sup> Department of Metallurgical Engineering, Indian Institute of Technology (Banaras Hindu University), Varanasi, 221005, India

<sup>b</sup> Department of Physics, Vignan's Institute of Information Technology, Visakhapatnam, 530049, India

**Abstract**

We present a study on biocompatibility of citrate capped Zr<sub>x</sub>Fe<sub>3-x</sub>O<sub>4</sub> based magnetic ferrofluids with human lung adenocarcinoma (A549) cell, evaluated by Sulforhodamine B assay. It was found to be ~86% at a concentration of 1.5 mg/mL after 48 h. We approached single step and cost effective polyol methodology to get a well dispersed and homogeneous aqueous suspension of citric acid coated Zr<sub>x</sub>Fe<sub>3-x</sub>O<sub>4</sub>, (0 ≤ x ≤ 0.3) MNPS. We used citric acid which anchored over the surface of freshly prepared nanoparticles to provide stability for longer duration. The X-ray and electron diffractions suggested the formation of single phasic magnetite particles of size 5–18 nm. The aggregation of MNPS was prevented by citric acid which was confirmed from Fourier-transform infrared spectroscopy spectra. The Zeta potential measurement inferred the well dispersion of nanoparticles at varying pH values (2–10). The Zr-substituted magnetite had relatively lower magnetization values than pure one. The optimum specific absorption rate (SAR) value at a field of 23 mT, 261 kHz was obtained to be 44 W/g for the sample x = 0.02 at a concentration of 10 mg/mL. In contrast, the intrinsic loss power (ILP) value was optimum (0.54 nHm<sup>2</sup>/kg) for Fe<sub>3</sub>O<sub>4</sub> ferrofluid having a concentration of 5 mg/mL and at a field of 17 mT, 170 kHz. Nevertheless, the reported ferrofluids have displayed high heating capacity and suitable biocompatibility thus these could be used as promising materials for bioapplications including magnetic hyperthermia. © 2021 Elsevier B.V.

**Publisher:** Elsevier B.V.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

34) Adilakshmi, S.<sup>a b</sup>, Shankar, N.R.<sup>c</sup>

**A new ranking in hexagonal fuzzy number by centroid of centroids and application in fuzzy critical path**

(2021) *Reliability: Theory and Applications*, 16 (2), pp. 124-135.

**DOI:** 10.24412/1932-2321-2021-262-124-135

<sup>a</sup> GITAM Institute of Science, Department of Mathematics, Visakhapatnam, 530045, India

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<sup>c</sup> Dept. of Mathematics, Institute of Science, GITAM (Deemed to Be University), Visakhapatnam, 530045, India

**Abstract**

This paper intends to introduce a different ranking approach for obtaining the critical path of the fuzzy project network. In the network, each activity time duration is viewed by the fuzzy hexagonal number. This study proposes an advanced ranking approach by applying the centroid of the Hexagonal fuzzy number. The Hexagon is separated into two right angles and one polygon. By applying the right angle and polygon centroid formula, we can calculate the centroid of each plane and calculate the centroid of the centroid. It also focuses on the arithmetic operations in Hexagonal fuzzy numbers. The developed strategy has been described by a numerical illustration and is correlated with a few of the existing ranking approaches. © 2021 Reliability: Theory and Applications. All rights reserved.

**Publisher:** Gnedenko Forum

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus



35) Ravi Sankar, R.S., Deepika, K.K., Satyanarayana, A.V.

**Harmonic stability analysis of multi-paralleled 3-phase pv inverters tied to grid**  
(2021) *International Journal of Power Electronics and Drive Systems*, 12 (2), pp. 783-792.

**DOI:** 10.11591/ijpeds.v12.i2.pp783-792

Department of Electrical and Electronics Engineering, Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh, India

**Abstract**

In this paper the harmonic stability is investigated for multi paralleled three-phase photovoltaic inverters connected to grid. The causes to harmonically stabilize/destabilize the multi-paralleled PV inverters when tied to the grid is analysed by the impedance-based stability criterion (IBSC). In this paper stability of the system is investigated by varying the grid inductance with constant grid resistance and also by varying load impedance while maintaining grid inductance constant. Stability of the multiple three phase inverters tied to the grid with different grid impedance, inductance value in particular are analyzed. Overall system is stable up to grid inductance of 5mH even though there is change in load admittance. It is concluded that system stability depends only on grid impedance. It is verified with MATLAB Simulations. © 2021, Institute of Advanced Engineering and Science. All rights reserved.

**Publisher:** Institute of Advanced Engineering and Science

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

36) Deepa, S.<sup>a</sup>, Vijay Sai, K.<sup>a</sup>, Rao, D.R.<sup>a</sup>, Madhusudhana Rao, K.<sup>b</sup>, Venkataramanah, K.<sup>a</sup>

**EC-decay of 133Ba revisited by electron-gamma spectroscopy**  
(2021) *Journal of Radioanalytical and Nuclear Chemistry*, 328 (3), pp. 1001-1010.

**DOI:** 10.1007/s10967-021-07731-x

<sup>a</sup> Department of Physics, Sri Sathya Sai Institute of Higher Learning, Prasanthi Nilayam, Anantapur, A.P 515134, India

<sup>b</sup> Vignan's Institute of Information Technology, Visakhapatnam, A.P 530049, India

**Abstract**

Internal conversion electron and gamma-ray spectroscopy measurements were carried out on the 10.551 y 133Ba electron-capture decay with our electron and gamma spectrometers—a mini-orange electron transporter paired to a Si(Li) detector and a large-volume HPGe detector, respectively. The relative and absolute gamma-ray intensities of all the nine transitions in 133Cs were determined. We also report the relative conversion intensities of eighteen conversion lines and their corresponding internal conversion coefficients (ICCs), four of which are being reported for the first time. Transition intensity balance at each energy level, showed that the measured values are self-consistent. This exhaustive dataset of gamma-ray intensities, internal conversion electron intensities and the ICCs that have low uncertainty, will be highly valuable for the purposes of energy and efficiency calibration of semiconductor gamma ray detectors and electron spectrometers. © 2021, Akadémiai Kiadó, Budapest, Hungary.

**Publisher:** Springer Science and Business Media B.V.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

37) Reddy, S.H.K.<sup>a</sup>, Vasudevan, A.<sup>b</sup>, Rajagopal, P.<sup>b</sup>, Balasubramaniam, K.<sup>b</sup>

**Scattering of Higher Order Mode Clusters (HOMC) from surface breaking notches in plates with application to higher temperature gradients**  
(2021) *NDT and E International*, 120, art. no. 102441, .

**DOI:** 10.1016/j.ndteint.2021.102441

<sup>a</sup> Vignan's Institute of Information Technology(A), Visakhapatnam, India

<sup>b</sup> Center for Non-Destructive Evaluation, IIT Madras, Chennai, India

**Abstract**

The potential of higher frequency ultrasonic guided wave mode cluster (HOMC) waves to be used for remote inspection of notch defects in plate-like structures is investigated, at room and elevated temperatures. Quantitative studies of HOMC interaction with notch defects ranging from 5% to 50% of plate thickness are performed using 2D finite element simulations, and are validated by controlled experiments performed, firstly at room temperature. Analysis using reciprocity-based relations is used to uncover for the first time, how the constituent modes of HOMC play a vital role in their scattering processes. Further experiments are used to show that the results are stable up to 300 °C, thereby demonstrating the feasibility of short range higher-resolution remote inspection of notch defects using non-dispersive higher frequency mode clusters in industrial conditions. © 2021

**Publisher:** Elsevier Ltd

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

38) Hanumantharao, R.<sup>a</sup>, Kalainathan, S.<sup>b</sup>

**Microhardness and SHG efficiency of pure and picric acid-added KDP crystals**  
 (2021) *Bulletin of Materials Science*, 44 (2), art. no. 105, .

**DOI:** 10.1007/s12034-021-02411-8

<sup>a</sup> Physics Division, H&BS, Vignan's Institute of Information Technology, Visakhapatnam, 530049, India

<sup>b</sup> Center for Nanotechnology Research, VIT University, Vellore, Tamilnadu 632 014, India

**Abstract**

Pure and picric acid-added KDP (potassium dihydrogen phosphate) crystals are grown by slow evaporation technique from aqueous solution. Unit cell parameters for pure and doped KDP crystals were measured from single-crystal X-ray diffraction studies. Vickers and Knoop microhardness studies were carried out on the grown crystals over a load range of 0.1 to 0.5 N. The microhardness decreases with load P, i.e., normal indentation size effect (ISE), and from Meyers index it is shown that grown crystals falls in to hard material category. Mechanical properties, such as Young's modulus, yield strength, elastic stiffness constant, were calculated for pure and doped KDP crystals. Hardness anisotropy has been observed in accordance with the orientation of the crystal. Etching studies were carried out using aqueous solution as an etchant. Improved second-harmonic generation efficiency is observed for doped KDP crystals in comparison to pure KDP crystals. © 2021, Indian Academy of Sciences.

**Publisher:** Springer

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

39) Kethavathu, S.N.<sup>a</sup>, Singam, A.<sup>b</sup>, Muthusamy, P.<sup>c</sup>

**Compact symmetrical slot coupled linearly polarized two/four/eight element MIMO bowtie DRA for WLAN applications**  
 (2021) *AEU - International Journal of Electronics and Communications*, 135, art. no. 153729, .

**DOI:** 10.1016/j.aeue.2021.153729

<sup>a</sup> Advanced RF and Wireless Communication Laboratory, Vignan's Institute of Information Technology (A), Visakhapatnam, Andhra Pradesh, India

<sup>b</sup> Advanced RF and Wireless Communication Laboratory, Andhra University College of Engineering (A), Visakhapatnam, Andhra Pradesh, India

<sup>c</sup> Advanced RF and Wireless Communication Laboratory, Vignan's Foundation for Science, Technology and Research Institute, Deemed to be University, India

**Abstract**

This paper presents a compact and low cost MIMO (Multiple-Input-Multiple-Output) Bowtie dielectric resonator antennas for two, four and eight elements for public safety entities (4.94–4.99 GHz) and indoor WLAN (5.15–5.35 GHz) applications. The fractional impedance bandwidth (4.72 GHz – 5.44 GHz) is 14.17% for all ports and strengthens the targeted frequency range gain. Two bubbled I-shape embedded inside the rectangular box defective ground structure to enhance the

separation between ports by etching therefore over the operating frequency band, isolation between ports exceeds 25 dB and maximum ECC (envelope correlation coefficient) of 0.04. The designed compact unit cell antenna has a dimension of  $30 \times 25.6 \text{ mm}^2$  (i.e.  $0.5\lambda_0 \times 0.4 \lambda_0$  where  $\lambda_0$  is calculated at 5.2 GHz in the free space) and finally proposed 8-element antenna having a size of only  $120 \times 51.2 \text{ mm}^2$  ( $2.07 \lambda_0 \times 0.88 \lambda_0$ ). Within their finest values, MIMO diversity performance parameters are obtained. The gain of the antenna unit cell, two, four and eight elements are 5.24 dBi, 5.49 dBi, 5.68 dBi and 6.2 dBi respectively and these gain values are most suitable for WLAN applications. To show the simulated performance, a prototype of all radiators would be manufactured and tested experimentally and measured results are good agreement with simulation result. © 2021 Elsevier GmbH

**Publisher:** Elsevier GmbH

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**Publication Stage:** Final

**Source:** Scopus

40) Gangu, K.K.<sup>a b</sup>, JVSK, V.K.<sup>a</sup>, T, S.G.<sup>a</sup>, Maddila, S.<sup>b c</sup>, Jonnalagadda, S.B.<sup>b</sup>

**Preparation and characterisation of new Ti/Fluorapatite/MWCNTs ternary nanocomposite and its catalytic activity in the synthesis of pyrazolo[3,4-b]quinoline moieties**

(2021) *Materials Today Communications*, 27, art. no. 102206, .

**DOI:** 10.1016/j.mtcomm.2021.102206

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<sup>b</sup> School of Chemistry & Physics, University of KwaZulu-Natal, Westville Campus, Private Bag X54001, Durban, 4000, South Africa

<sup>c</sup> Department of Chemistry, GITAM Institute of Science, GITAM University, Visakhapatnam, 530045, India

**Abstract**

We describe the preparation of a new ternary nanocomposite, (Ti/Fap/MWCNTs) constituting titania, fluorapatite and multiwalled carbon nanotubes. First, the fluorapatite (Fap) nanostructures were developed using glutamic acid as crystal growth modifier. The Fap was then reacted with functionalised MWCNTs and TiO<sub>2</sub> via sonication in ether. The Powder XRD, FT-IR, and microscopic analysis (SEM and TEM) of the new nanocomposite, Ti/Fap/MWCNTs revealed three phases. TiO<sub>2</sub> and Fap particle sizes were between 50–60 nm and 40–60 nm diameter, respectively. The ternary nanocomposite demonstrated excellent catalytic efficiency for synthesising new pyrazolo[3,4-b]quinolones. The synergy between the Lewis acidic and basic sites contributed to the nanocomposite's effectiveness. Impressive yields (91–95 %) of quinolone derivatives were accomplished in short reaction time (ca. 15 min) in the green solvent, EtOH at room temperature. Recyclability with consistent activity (>5 times) is the added advantage of the Ti/Fap/MWCNTs nanocomposite. © 2021 Elsevier Ltd

**Publisher:** Elsevier Ltd

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

41) Mahanty, M., Swathi, K., Teja, K.S., Kumar, P.H., Sravani, A.

**Forecasting the spread of COVID-19 pandemic with prophet**

(2021) *Revue d'Intelligence Artificielle*, 35 (2), pp. 115-122.

**DOI:** 10.18280/ria.350202

Vignan's Institute of Information Technology, Visakhapatnam, 530049, India

**Abstract**

COVID-19 pandemic shook the whole world with its brutality, and the spread has been still rising on a daily basis, causing many nations to suffer seriously. This paper presents a medical stance on research studies of COVID-19, wherein we estimated a time-series data-based statistical model using prophet to comprehend the trend of the current pandemic in the coming future after July 29, 2020 by using data at a global level. Prophet is an open-source framework discovered by the Data Science team at Facebook for carrying out forecasting based operations. It aids to automate the procedure of developing accurate forecasts and can be customized according to the use case we are solving. The Prophet model is easy to work because the official repository of prophet is live on GitHub and is open for contributions and can be fitted effortlessly. The statistical data presented on the paper refers to the number of daily confirmed cases officially for the period January 22, 2020, to July 29, 2020. The estimated data produced by the forecast models can then be used by Governments and

medical care departments of various countries to manage the existing situation, thus trying to flatten the curve in various nations as we believe that there is minimal time to do this. The inferences made using the model can be clearly comprehended without much effort. Furthermore, it tries to give an understanding of the past, present, and future trends by showing graphical forecasts and statistics. Compared to other models, prophet specifically holds its own importance and innovativeness as the model is fully automated and generates quick and precise forecasts that can be tunable additionally. © 2021 Lavoisier. All rights reserved.

**Publisher:** International Information and Engineering Technology Association

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**Publication Stage:** Final  
**Source:** Scopus

- 42) Alla, S.K.<sup>a b</sup>, Gangwar, A.<sup>a</sup>, Shaw, S.K.<sup>a</sup>, Viswanadh, M.K.<sup>c</sup>, Neogi, K.<sup>c</sup>, Muthu, M.S.<sup>c</sup>, Gupta, N.<sup>d</sup>, Meena, S.S.<sup>e</sup>, Kollu, P.<sup>f</sup>, Mandal, R.K.<sup>a</sup>, Prasad, N.K.<sup>a</sup>

**Physical and in-vitro evaluation of pure and substituted MxCe<sub>1-x</sub>O<sub>2</sub> (M = Co, Fe or Ti and x = 0.05) magnetic nanoparticles**

(2021) *Ceramics International*, 47 (7), pp. 8812-8819.

**DOI:** 10.1016/j.ceramint.2020.12.001

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<sup>b</sup> Department of Physics, Vignan's Institute of Information Technology, Visakhapatnam, 530049, India

<sup>c</sup> Department of Pharmaceutical Engineering and Technology, Indian Institute of Technology (BHU), Varanasi, 221005, India

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**Abstract**

High resolution TEM studies revealed the spherical morphology of MxCe<sub>1-x</sub>O<sub>2</sub> (M = Co, Fe or Ti, x = 0.05) particles with their size in the range of 8–11 nm. Raman, UV and PL spectroscopy analyses evidenced that oxygen vacancy concentration modified with the type of dopants. The concentration of vacancies in the Co<sub>0.05</sub>Ce<sub>0.95</sub>O<sub>2</sub> sample was relatively higher and hence it had optimum magnetization value. The in-vitro cytotoxicity study for MxCe<sub>1-x</sub>O<sub>2</sub> (M = Co, Fe or Ti, x = 0.05) nanoparticles against human lung adenocarcinoma (A549 cells) was conducted. The results suggested that at a 10 µg/mL concentration, the undoped CeO<sub>2</sub> nanoparticles have shown cell viability up to 99%. In contrast, at the same concentration, the doped CeO<sub>2</sub> such as Co<sub>0.05</sub>Ce<sub>0.95</sub>O<sub>2</sub>, Fe<sub>0.05</sub>Ce<sub>0.95</sub>O<sub>2</sub> and Ti<sub>0.05</sub>Ce<sub>0.95</sub>O<sub>2</sub> nanoparticles demonstrated the cell viability of ~97%. Furthermore, the samples displayed reliable biocompatibility up to 1000 µg/mL concentration. Interestingly, Co-doped CeO<sub>2</sub> nanoparticles exhibited relatively higher biocompatibility against A549 cells at all concentrations. Further, the higher amount of vacancies might have improved the free radical scavenging effect and so the biocompatibility for the samples. © 2020 Elsevier Ltd and Techna Group S.r.l.

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- 43) Guru, T.V.S.P.V.S.<sup>a</sup>, Krishna, V.<sup>b</sup>, Rajesh, E.<sup>c</sup>

**Efficacy of cobalt-incorporated mesoporous silica toward photodegradation of Alizarin Red S and its kinetic study**  
 (2021) *Journal of the Chinese Chemical Society*, 68 (4), pp. 592-600.

**DOI:** 10.1002/jccs.202000335

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**Abstract**

Cobalt-incorporated mesoporous silica (Co-MCM-41) has been synthesized along with MCM-41. The materials were characterized using powder X-ray diffraction, scanning electron microscope, and nitrogen adsorption–desorption study techniques. The surface area (SBET, m<sup>2</sup>/g), pore size (Å), and pore volume (cc/g) have been found to be reduced in the Co-

MCM-41 compared with MCM-41. Furthermore, the Scanning electron microscopy coupled with energy dispersive X-Ray spectroscopy (SEM-EDAX) analysis has clearly shown the presence of the respective elements in the materials. The bandgap (eV) was also significantly reduced in the Co-MCM-41 compared with its parent template, observed by applying the Kubelka-Munk function to the results of UV-Vis DRS. The materials were successfully used as photocatalysts in the photodegradation studies of the Alizarin Red S dye, and pseudo-first-order kinetics was performed using the Langmuir-Hinshelwood kinetic model. All the required experimental conditions were optimized. © 2020 The Chemical Society Located in Taipei & Wiley-VCH GmbH

**Publisher:** Chinese Chemical Society Taiwan

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**Source:** Scopus

- 44) Korrai, S.<sup>a b</sup>, Gangu, K.K.<sup>a c</sup>, Prasada Rao, P.V.V.<sup>b</sup>, Jonnalagadda, S.B.<sup>c</sup>

**A study on assessment of vulnerability of seawater intrusion to groundwater in coastal areas of Visakhapatnam, India**

(2021) *Environment, Development and Sustainability*, 23 (4), pp. 5937-5955.

**DOI:** 10.1007/s10668-020-00855-2

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**Abstract**

With an attempt to make a useful and convenient database, a case study has been conducted on impact of seawater intrusion to groundwater in the coastal localities of Visakhapatnam, India. Thirty groundwater samples were collected from varied locations covering a stretch of 50 km from Bhemili to Paravada of Visakhapatnam coastal region. The groundwater samples were collected in pre- and post-monsoon in the year of 2017. The analytic studies to assess the quality of water were conducted. In comparison with WHO standards, chloride ion exceeded the permitted levels in (70% and 73%) of samples, calcium ion (23.3% and 13.3%) of samples, TDS (100% and 100%) of samples in pre- and post-monsoon seasons, respectively. The hydrochemical facies evolution diagrams and piper diagrams were used as tools to ascertain the factors and mechanisms responsible to vulnerability of groundwater due to seawater intrusion. As per the study, a type of mixed groundwater has been identified in the both the seasons. About 16% and 10% of samples were prone to seawater intrusion during pre- and post-monsoon seasons, respectively. © 2020, Springer Nature B.V.

**Publisher:** Springer Science and Business Media B.V.

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

- 45) Soujanya, M.L.<sup>a</sup>, Laxmi, P.V.<sup>b</sup>, Sirisha, E.<sup>c</sup>

**Impact of negative arrivals and multiple working vacation on dual supplier inventory model with finite lifetimes**

(2021) *Reliability: Theory and Applications*, 16 (1), pp. 124-132.

**DOI:** 10.24412/1932-2321-2021-161-124-132

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**Abstract**

In this paper we analyzed an inventory model with two-suppliers, finite life times, multiple working vacations and customers who arrive according to RCE process. Perishable and replenishment rates of two-suppliers are exponentially distributed. The server takes exponential working vacations when the queue is empty. Arrival process follows Poisson distribution and the probability for an ordinary customer is  $p$  and for negative customer is  $q$ . Limiting distribution of the assumed model is obtained. Numerical results are presented for cost function and various system performance parameters. The impact of two-

suppliers on the optimal reorder points will be useful in developing strategies for handling various perishable inventory problems with replenishment rates. © 2021 Age of Human Rights Journal. All rights reserved.

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**Source:** Scopus

- 46) Laxmi Lydia, E.<sup>a</sup>, Arokiaraj Jovith, A.<sup>b</sup>, Francis Saviour Devaraj, A.<sup>c</sup>, Seo, C.<sup>d</sup>, Joshi, G.P.<sup>e</sup>

**Green energy efficient routing with deep learning based anomaly detection for internet of things (IoT) communications**

(2021) *Mathematics*, 9 (5), art. no. 500, pp. 1-18.

**DOI:** 10.3390/math9050500

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**Abstract**

Presently, a green Internet of Things (IoT) based energy aware network plays a significant part in the sensing technology. The development of IoT has a major impact on several application areas such as healthcare, smart city, transportation, etc. The exponential rise in the sensor nodes might result in enhanced energy dissipation. So, the minimization of environmental impact in green media networks is a challenging issue for both researchers and business people. Energy efficiency and security remain crucial in the design of IoT applications. This paper presents a new green energy-efficient routing with DL based anomaly detection (GEER-DLAD) technique for IoT applications. The presented model enables IoT devices to utilize energy effectively in such a way as to increase the network span. The GEER-DLAD technique performs error lossy compression (ELC) technique to lessen the quantity of data communication over the network. In addition, the moth flame swarm optimization (MSO) algorithm is applied for the optimal selection of routes in the network. Besides, DLAD process takes place via the recurrent neural network-long short term memory (RNN-LSTM) model to detect anomalies in the IoT communication networks. A detailed experimental validation process is carried out and the results ensured the betterment of the GEERDLAD model in terms of energy efficiency and detection performance. © 2021 by the authors. Licensee MDPI, Basel, Switzerland.

**Publisher:** MDPI AG

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**Source:** Scopus

- 47) Vivekananda, K.V.<sup>a</sup>, Dhanalakshmi, B.<sup>b,c</sup>, Rao, B.P.<sup>c</sup>, Rao, P.S.V.S.<sup>c</sup>

**Enhanced magnetoelectric coupling in Bi<sub>0.95</sub>Mn<sub>0.05</sub>FeO<sub>3</sub>-Ni<sub>0.5</sub>Zn<sub>0.5</sub>Fe<sub>2</sub>O<sub>4</sub> nanocomposites for spintronic applications**

(2021) *Applied Physics A: Materials Science and Processing*, 127 (3), art. no. 187, .

**DOI:** 10.1007/s00339-021-04346-7

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**Abstract**

Multiferroic nanocomposites with the chemical formula, (x).Bi<sub>0.95</sub>Mn<sub>0.05</sub>FeO<sub>3</sub>-(1-x). Ni<sub>0.5</sub>Zn<sub>0.5</sub>Fe<sub>2</sub>O<sub>4</sub>, (where x = 0.2, 0.4, 0.5, 0.6, and 0.8) have been synthesized using sol-gel autocombustion and conventional solid-state reaction methods. Resistivity and impedance measurements were taken in order to understand the properties of the conductivity of the

samples. Multiple hopping mechanisms were evident from the studies of impedance analysis with the traces of different trends from Nyquist plots. Magnetolectric (ME) coupling coefficient ( $\alpha$ ME) studies were taken in order to understand the possible coupling in the synthesized composites. The composites exhibit different values for  $\alpha$ ME, and it was observed to be varying systematically in accordance with the mixing ratios of the individual constituent phases. Interestingly, the composite with equal ratio ( $x = 0.5$ ) of both the individual phases shows enhanced value for  $\alpha$ ME along longitudinal and transverse modes. The observed typical values of  $\alpha$ ME along the longitudinal and transverse modes are 28.083 mV/cm. Oe and 27.098 mV/cm. Oe, respectively. The possible reasons for the improvement in the coupling factor are well discussed and are attributed to the charge balance along with the structural inhomogeneities prevailed during the formation of the composite. In addition, the observed difference in magnitudes of  $\alpha$ ME along the longitudinal and transverse modes are also examined and presented in this paper. Improved structural, resistive, impedance and magnetolectric coupling studies suggest that these composites are well suitable for the applications of spintronic-based devices. © 2021, The Author(s), under exclusive licence to Springer-Verlag GmbH, DE part of Springer Nature.

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**Publication Stage:** Final

**Source:** Scopus

- 48) Koutavarapu, R.<sup>a</sup>, Reddy, C.V.<sup>a</sup>, Syed, K.<sup>b</sup>, Reddy, K.R.<sup>c</sup>, Shetti, N.P.<sup>d</sup>, Aminabhavi, T.M.<sup>e</sup>, Shim, J.<sup>a</sup>

**Ultra-small zinc oxide nanosheets anchored onto sodium bismuth sulfide nanoribbons as solar-driven photocatalysts for removal of toxic pollutants and photoelectrocatalytic water oxidation**

(2021) *Chemosphere*, 267, art. no. 128559, .

**DOI:** 10.1016/j.chemosphere.2020.128559

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**Abstract**

Heterostructured nanohybrids were prepared from sodium bismuth sulfide (NaBiS<sub>2</sub>) and zinc oxide (ZnO) through hydrothermal process. The nanocomposite was used for tetracycline (TC) degradation as well as photoelectrochemical (PEC) water oxidation. Morphology and structural analyses were performed to confirm the dispersion of ultra-small ZnO nanosheets into the NaBiS<sub>2</sub> nanoribbons. By tuning the band gap, it was possible to degrade tetracycline toxic pollutant within 90 min under the simulated solar light irradiation, while PEC suggested a lower charge-transfer resistance, high photocurrent response, and exceptionally good stability. The highest photocurrent density of 0.751 mA/cm<sup>2</sup> vs. Ag/AgCl in 0.1 M Na<sub>2</sub>SO<sub>3</sub> solution was observed under solar-light illumination. Detailed photocatalytic mechanisms for the degradation of TC and PEC water oxidation are discussed. © 2020 Elsevier Ltd

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- 49) Jayanthi, J.<sup>a</sup>, Lydia, E.L.<sup>b</sup>, Krishnaraj, N.<sup>c</sup>, Jayasankar, T.<sup>d</sup>, Babu, R.L.<sup>e</sup>, Suji, R.A.<sup>f</sup>

**An effective deep learning features based integrated framework for iris detection and recognition**

(2021) *Journal of Ambient Intelligence and Humanized Computing*, 12 (3), pp. 3271-3281.

**DOI:** 10.1007/s12652-020-02172-y

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### Abstract

In recent years, Iris recognition has emerged as an important and trustworthy biometric model to recognize humans. The application of automatic iris recognition models find useful in different fields namely border control, citizen confirmation, and criminal to commercial products. This paper introduces an effective deep learning (DL) based integrated model for precise iris detection, segmentation and recognition. The projected model involves different stages namely preprocessing, detection, segmentation and recognition. Initially, preprocessing of images takes place to improve the quality of the input image using Black Hat filtering, Median filtering and Gamma Correction. Then, Hough Circle Transform model is applied to localize the region of interest, i.e. iris in an effective way. Afterwards, Mask region proposal network with convolution neural network (R-CNN) with Inception v2 model is applied for trustworthy iris recognition and segmentation i.e., recognizing iris/non-iris pixels. For validating the results of the presented model, a detailed simulation takes place using a benchmark CASIA-Iris Thousand dataset and the results are validated in terms of detection accuracy. The attained simulation outcome depicted that the projected technique shows maximum recognition accuracy of 99.14% which is superior to other methods such as UniNet.V2, AlexNet, VGGNet, Inception, ResNet and DenseNet models in a significant way. © 2020, Springer-Verlag GmbH Germany, part of Springer Nature.

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50) Prasad, K.L.S.<sup>a</sup>, Devi, S.S.<sup>b</sup>, Deekshitulu, G.V.S.R.<sup>c</sup>

**On a class of Lorentzian para-Kenmotsu manifolds admitting the Weyl-projective curvature tensor of type (1,3)**  
(2021) *Italian Journal of Pure and Applied Mathematics*, (45), pp. 990-1001.

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### Abstract

In this present paper, we consider a class of Lorentzian almost paracontact metric manifolds namely Lorentzian para-Kenmotsu (briefly LP-Kenmotsu) manifolds admitting the Weyl-projective curvature tensor of type (1,3). We study and have shown that Lorentzian para-Kenmotsu manifolds admitting a flat curvature tensor, an irrotational curvature tensor and a conservative curvature tensor are an Einstein manifolds of constant scalar curvature. Further we study Lorentzian para-Kenmotsu manifolds satisfying the curvature condition  $R(X,Y) \cdot W_2 = 0$ . At the end, we construct an example of a 3-dimensional Lorentzian para-Kenmotsu manifold admitting Weyl-projective curvature tensor which verifies the results discussed in the present work. © 2021 Forum-Editrice Universitaria Udinese SRL. All rights reserved.

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51) Sahu, H.K.<sup>a b</sup>, Padhan, A.K.<sup>c</sup>, Sahu, P.R.<sup>c</sup>

**Smart Devices Performance with SSK-BPSK Modulation and Energy Harvesting in Smart Cities**  
(2021) *IEEE Communications Letters*, 25 (2), art. no. 9206002, pp. 637-640.

**DOI:** 10.1109/LCOMM.2020.3026737

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### Abstract



In this letter, we analyze smart devices' performance in smart cities using radio frequency (RF) based energy harvesting. In a smart city, smart electronics devices play an important role in communication between the devices and centralized access point (AP). Here, we have considered dynamic space shift keying (SSK) and binary phase-shift keying (BPSK) modulation for communication. A single radio frequency (RF) chain of the transmitter dynamically changes the modulation scheme between SSK and BPSK. Based on one-bit feedback from the receiver antenna, the modulation scheme is selected, and this feedback path can be used for energy harvesting. Using multi-user selection combining, the average bit error probability (ABEP) performance of smart devices with wireless power communication network (WPCN) is derived in closed form over Saleh-Valenzuela (S-V) channel. © 1997-2012 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

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52) Gopi, D.<sup>a</sup>, Vadaboyina, A.R.<sup>b</sup>, Dabbakuti, J.R.K.K.<sup>c</sup>

**DGS based monopole circular-shaped patch antenna for UWB applications**

(2021) *SN Applied Sciences*, 3 (2), art. no. 198, .

**DOI:** 10.1007/s42452-020-04123-w

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**Abstract**

A simple low profile defected ground structure based monopole circular-shaped patch antenna is proposing for ultrawide-band applications. The design allows for a simple and compact structure on the FR-4 substrate material. The proposed design initially has a meager antenna gain and bandwidth. To increase the antenna bandwidth and gain, the defective ground structure is implemented with four dumbbell-shaped slots. Parametric analysis is considered to find the radius of circular patch for tuning of UWB frequency applications. The proposed MCP antenna resonates at 2.9 GHz, 9.1 GHz frequencies with a S11 of - 34.84 dB, - 33.74 dB, respectively, and achieves 8.1 GHz (2.5–10.6 GHz) impedance bandwidth concerning the - 10 dB reference line of the reflection coefficient. The gains are 8.4 dBi, 8.2 dBi for the two resonant frequencies, and the radiation patterns are semi-omnidirectional, omnidirectional. The proposed antenna has been validated by observing good agreement between the simulation and the measured results. © 2021, The Author(s).

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53) Venkataiah, S.<sup>a</sup>, Chandra, S.V.J.<sup>b</sup>, Chalapathi, U.<sup>c</sup>, Ramana, C.<sup>d</sup>, Uthanna, S.<sup>a</sup>

**Oxygen partial pressure influenced stoichiometry, structural, electrical, and optical properties of DC reactive sputtered hafnium oxide films**

(2021) *Surface and Interface Analysis*, 53 (2), pp. 206-214.

**DOI:** 10.1002/sia.6902

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**Abstract**

HfO<sub>2</sub> films have been deposited on quartz and p-type Si (100) substrates using DC reactive magnetron sputtering technique by sputtering of hafnium target at different oxygen partial pressures. Variation of cathode potential with oxygen partial pressure was systematically studied. The influence of oxygen partial pressure on chemical composition, crystallographic structure, and optical properties of HfO<sub>2</sub> films was systematically investigated. X-ray photoelectron spectroscopy and

energy dispersive X-ray analysis were employed to determine the chemical composition. The films formed at oxygen partial pressure of  $5 \times 10^{-4}$  Torr were of stoichiometric HfO<sub>2</sub>. X-ray diffractometer studies revealed that the films formed at  $5 \times 10^{-4}$  Torr were weakly crystallized with monoclinic structure. Optical bandgap of the HfO<sub>2</sub> films increased with increasing oxygen partial pressure. Metal oxide semiconductor structures with configuration of Al/HfO<sub>2</sub>/p-Si were fabricated and studied its dielectric and electrical properties. From these studies, it is confirmed that HfO<sub>2</sub> film-based metal oxide semiconductor devices formed at an optimum oxygen partial pressure of  $5 \times 10^{-5}$  Torr showed dielectric constant of 13 with leakage current density of  $4.7 \times 10^{-7}$  A/cm<sup>2</sup>. © 2020 John Wiley & Sons, Ltd.

**Publisher:** John Wiley and Sons Ltd

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**Source:** Scopus

54) Lydia, E.L.<sup>a</sup>, Raj, J.S.<sup>b</sup>, Pandi Selvam, R.<sup>c</sup>, Elhoseny, M.<sup>d</sup>, Shankar, K.<sup>e</sup>

**Application of discrete transforms with selective coefficients for blind image watermarking**

(2021) *Transactions on Emerging Telecommunications Technologies*, 32 (2), art. no. e3771, .

**DOI:** 10.1002/ett.3771

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**Abstract**

Watermarking scheme is not helpful in conveying the original image continually so as identifying the owner's mark from the watermarked image. In the current situation, our chosen topic is significant in real-time applications like fraud recognition, emergency clinic, and government divisions. In this study, an optimal multiblind watermarking model is proposed for the watermark detection process. Our proposed model is a combination of intelligent domain transforms like Discrete Shearlet Transform and Discrete Curvelet Transform (DCurT). The imperceptibility necessity of the plan is accomplished utilizing optimal coefficients that are performed by applying in DCurT with metaheuristic optimization model that is Grasshopper Algorithm. It is played by a chasing behavior of gathering of grasshoppers and cooperation process, here, Random Grasshopper Optimization is utilized for watermarking. The secret image is embedded with a lower band of optimal coefficients with DCurT, and here, the band is DCur (1, 5). The secret data is embedded in the host images to make it secure, and then, the extraction of the embedding process takes place inversely. For experimentation analysis, 20 digital images are considered, and different attacks are applied in the proposed watermarking model. Thus, the watermarked image looks lossless compared with the host image. Moreover, recent literary works and domain transform are also utilized for strength investigation of the proposed watermarking model. © 2019 John Wiley & Sons, Ltd.

**Publisher:** Wiley Blackwell

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**Source:** Scopus

55) Kethavathu, S.N.<sup>a</sup>, Aruna, S.<sup>b</sup>

**SYMMETRICAL HIGH ISOLATED SLOT-COUPLED EIGHT-ELEMENT MULTIPLE-INPUT-MULTIPLE-OUTPUT BOWTIE DIELECTRIC RESONATOR ANTENNA FOR 5.2 GHz WLAN APPLICATIONS**

(2021) *Telecommunications and Radio Engineering (English translation of *Elektrosvyaz and Radiotekhnika*)*, 80 (4), pp. 19-30.

**DOI:** 10.1615/TelecomRadEng.2021037325

<sup>a</sup> Vignan's Institute of Information Technology(A), Andhra Pradesh, Visakhapatnam, 530049, India

<sup>b</sup> Andhra University College of Engineering(A), Andhra Pradesh, Visakhapatnam, 530003, India

**Abstract**

This paper discusses a small and low-cost eight-element multiple-input-multiple-output (MIMO) bowtie dielectric resonator

antenna designed for WLAN (5.2 GHz) applications. The fractional impedance bandwidth (4.77–5.44 GHz) for all ports are 13.12% and enhance the gain for targeted frequency range. The isolation between ports improved by etching two bubbled I-shaped inserts within the rectangular box defected ground structure. The isolation between ports exceeds –25 dB over the operating band. Diversity performance parameters of MIMO antenna are calculated, and they lie within their optimum values. A prototype of all radiators are fabricated and tested experimentally to authenticate the simulated results. © 2021 Begell House Inc.. All rights reserved.

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56) Somasundara Rao, M.<sup>a</sup>, Rao, K.V.<sup>b</sup>, Krishna Prasad, M.H.M.<sup>c</sup>

**CPU runtime optimization in data damage tracking quarantine and recovery (DTQR) scheme based on customized ANN**

(2021) *International Journal of Knowledge-Based and Intelligent Engineering Systems*, 25 (3), pp. 323-333.

**DOI:** 10.3233/KES-210075

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#### **Abstract**

Database Management Systems (DBMS) are regularly used to store and process touchy endeavour information. In any case, it is beyond the realm of imagination to expect to verify the information by depending on the entrance control and security instruments of such frameworks alone; clients may handle their benefits or go around security systems to malevolently adjust and get to the information. Hence, we have developed a reliable, secure, and real-time data damage tracking Quarantine and recovery scheme using Customized ANN approach. The proposed DTQR scheme recovers the accurate data from any newer data and eliminates the fraudulent data. The approach also provides a solution for runtime problems occurring in the DBMS. Moreover, the proposed technique implemented in the working platform of JAVA and the results are analyzed with existing techniques to prove the efficiency of the proposed system. © 2021 - IOS Press. All rights reserved.

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57) Madhusudhana Rao, T.V.<sup>a</sup>, Korada, S.<sup>b</sup>, Srinivas, Y.<sup>c</sup>

**Machine hearing system for teleconference authentication with effective speech analysis**

(2021) *International Journal of Knowledge-Based and Intelligent Engineering Systems*, 25 (3), pp. 357-365.

**DOI:** 10.3233/KES-210079

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#### **Abstract**

The speaker identification in Teleconferencing scenario, it is important to address whether a particular speaker is a part of a conference or not and to note that whether a particular speaker is spoken at the meeting or not. The feature vectors are extracted using MFCC-SDC-LPC. The Generalized Gamma Distribution is used to model the feature vectors. K-means algorithm is utilized to cluster the speech data. The test speaker is to be verified that he/she is a participant in the conference. A conference database is generated with 50 speakers. In order to test the model, 20 different speakers not belonging to the conference are also considered. The efficiency of the model developed is compared using various measures such as AR, FAR and MDR. And the system is tested by varying number of speakers in the conference. The results show that the model performs more robustly. © 2021 - IOS Press. All rights reserved.

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- 58) Laxmi Lydia, E.<sup>a</sup>, Anupama, C.S.S.<sup>b</sup>, Beno, A.<sup>c</sup>, Elhoseny, M.<sup>d e</sup>, Alshehri, M.D.<sup>f</sup>, Selim, M.M.<sup>g</sup>

**Cognitive computing-based COVID-19 detection on Internet of things-enabled edge computing environment**

(2021) *Soft Computing*, .

**DOI:** 10.1007/s00500-021-06514-6

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**Abstract**

In the current pandemic, smart technologies such as cognitive computing, artificial intelligence, pattern recognition, chatbot, wearables, and blockchain can sufficiently support the collection, analysis, and processing of medical data for decision making. Particularly, to aid medical professionals in the disease diagnosis process, cognitive computing is helpful by processing massive quantities of data rapidly and generating customized smart recommendations. On the other hand, the present world is facing a pandemic of COVID-19 and an earlier detection process is essential to reduce the mortality rate. Deep learning (DL) models are useful in assisting radiologists to investigate the large quantity of chest X-ray images. However, they require a large amount of training data and it needs to be centralized for processing. Therefore, federated learning (FL) concept can be used to generate a shared model with no use of local data for DL-based COVID-19 detection. In this view, this paper presents a federated deep learning-based COVID-19 (FDL-COVID) detection model on an IoT-enabled edge computing environment. Primarily, the IoT devices capture the patient data, and then the DL model is designed using the SqueezeNet model. The IoT devices upload the encrypted variables into the cloud server which then performs FL on major variables using the SqueezeNet model to produce a global cloud model. Moreover, the glowworm swarm optimization algorithm is utilized to optimally tune the hyperparameters involved in the SqueezeNet architecture. A wide range of experiments were conducted on benchmark CXR dataset, and the outcomes are assessed with respect to different measures. The experimental outcomes pointed out the enhanced performance of the FDL-COVID technique over the other methods. © 2021, The Author(s), under exclusive licence to Springer-Verlag GmbH Germany, part of Springer Nature.

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**Document Type:** Article

**Publication Stage:** Article in Press

**Source:** Scopus

- 59) Chandrika, V.S.<sup>a</sup>, Karthik, T.S.<sup>b</sup>, Bhaskaran, J.<sup>c</sup>, Hemanth, B.<sup>d</sup>, Loganathan, M.K.<sup>e</sup>, Praveenkumar, C.<sup>a f</sup>

**Sustainable energy harvesting for self-powered micro/ nanosystems enabled by nanotechnology**

(2021) *Journal of Nuclear Energy Science and Power Generation Technology*, 10 (9), art. no. 1000227, .

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#### Abstract

The section provides an overview of energy collecting techniques that have the ability to energize nanosystems. The focus of our discussion is on methods apart from the well-known solar panel and thermoelectrics. The piezo nanomaterials made using aligned ZnO nanowire arrays are the focus of this paper. This is a base improving in manufacturing sector for transforming movement energy, vibration energy, and hydraulic energy into power for self-energized nanostructures. © 2021, SciTechnol, All Rights Reserved.

**Publisher:** SciTechnol

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 60) Seeniappan, K.<sup>a</sup>, Venkatesan, B.<sup>b</sup>, Krishnan, N.N.<sup>c</sup>, Kandhasamy, T.<sup>b</sup>, Arunachalam, S.<sup>d</sup>, Seeta, R.K.<sup>e</sup>, Depoures, M.V.<sup>f</sup>

#### **A comparative assessment of performance and emission characteristics of a DI diesel engine fuelled with ternary blends of two higher alcohols with lemongrass oil biodiesel and diesel fuel**

(2021) *Energy and Environment*, .

**DOI:** 10.1177/0958305X211051323

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#### Abstract

Utilisation of high carbon alcohols in diesel engines as fuel is gaining importance among researchers because of its better fuel properties that are compatible with mineral diesel. The present study utilises two such alcohols namely octanol and decanol along with diesel and biodiesel derived from lemongrass. Two ternary blends, 50% by volume of diesel – 30% by volume of biodiesel – 20% by volume of octanol, and 50% by volume of diesel – 30% by volume of biodiesel – 20% by volume of decanol, were prepared, and different engine characteristics were analysed and compared with both neat diesel and biodiesel operation. Results indicated that peak cylinder pressure lowered with the ternary blend. Peak heat release rate was higher for octanol blend. When compared with octanol blend, 2.5% higher brake thermal efficiency was observed for decanol blend. However, still, the brake thermal efficiency was 3.5% lower than the diesel operation. The oxides of nitrogen emission for decanol blend were 4% lower than octanol blend. In general, smoke emission was lower for higher alcohol blends in comparison with the binary blend operation. Among the higher alcohol blends, octanol portrayed a 15% lower smoke opacity. Both the hydrocarbon emission and the carbon monoxide emission increased with higher alcohol blends. The study revealed that 1-decanol could be a potential fuel candidate for diesel engines operating with biomass-derived lemongrass oil biodiesel. © The Author(s) 2021.

**Publisher:** SAGE Publications Inc.

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**Publication Stage:** Article in Press

**Source:** Scopus

- 61) Rao, P.S.<sup>a</sup>, Rao, T.V.M.<sup>b</sup>, Kurumalla, S.<sup>c</sup>, Prakash, B.<sup>d</sup>

#### **Matrix Factorization Based Recommendation System using Hybrid Optimization Technique**

(2021) *EAI Endorsed Transactions on Energy Web*, 8 (35), pp. 1-7.

**DOI:** 10.4108/eai.19-2-2021.168725

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### Abstract

In this paper, a matrix factorization recommendation algorithm is used to recommend items to the user by inculcating a hybrid optimization technique that combines Alternating Least Squares (ALS) and Stochastic Gradient Descent (SGD) in the advanced stage and compares the two individual algorithms with the hybrid model. This hybrid optimization algorithm can be easily implemented in the real world as a cold start can be easily reduced. The hybrid technique proposed is set side-by-side with the ALS and SGD algorithms individually to assess the pros and cons and the requirements to be met to choose a specific technique in a specific domain. The metric used for comparison and evaluation of this technique is Mean Squared Error (MSE) © 2021. P. Srinivasa Rao et al., licensed to EAI. This is an open access article distributed under the terms of the Creative Commons Attribution license, which permits unlimited use, distribution and reproduction in any medium so long as the original work is properly cited.

**Publisher:** European Alliance for Innovation

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**Publication Stage:** Final

**Source:** Scopus

- 62) Vaiyapuri, T.<sup>a</sup>, Lydia, E.L.<sup>b</sup>, Sikkandar, M.Y.<sup>c</sup>, Diaz, V.G.<sup>d</sup>, Pustokhina, I.V.<sup>e</sup>, Pustokhin, D.A.<sup>f</sup>

**Internet of Things and Deep Learning Enabled Elderly Fall Detection Model for Smart Homecare**  
(2021) *IEEE Access*, 9, art. no. 9471869, pp. 113879-113888.

**DOI:** 10.1109/ACCESS.2021.3094243

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### Abstract

Recently, the techniques of Internet of Things (IoT) and mobile communications have been developed to gather human and environment information data for a variety of intelligent services and applications. Remote monitoring of elderly and disabled people living in smart homes is highly challenging due to probable accidents which might occur due to daily activities such as falls. For elderly people, fall is considered as a major reason for death of post-traumatic complication. So, early identification of elderly people falls in smart homes is needed to increase the survival rate of the person or offer required support. Recently, the advent of artificial intelligence (AI), IoT, wearables, smartphones, etc. makes it feasible to design fall detection systems for smart homecare. In this view, this paper presents an IoT enabled elderly fall detection model using optimal deep convolutional neural network (IMEFD-ODCNN) for smart homecare. The goal of the IMEFD-ODCNN model is to enable smartphones and intelligent deep learning (DL) algorithms to detect the occurrence of falls in the smart home. Primarily, the input video captured by the IoT devices is pre-processed in different ways like resizing, augmentation, and min-max based normalization. Besides, SqueezeNet model is employed as a feature extraction technique to derive appropriate feature vectors for fall detection. In addition, the hyperparameter tuning of the SqueezeNet model takes place using the salp swarm optimization (SSO) algorithm. Finally, sparrow search optimization algorithm (SSOA) with variational autoencoder (VAE), called SSOA-VAE based classifier is employed for the classification of fall and non-fall events. Finally, in case of fall event detected, the smartphone sends an alert to the caretakers and hospital management. The performance validation of the IMEFD-ODCNN model takes place on UR fall detection dataset and multiple cameras fall dataset. The experimental outcomes highlighted the promising performance of the IMEFD-ODCNN model over the recent methods with the maximum accuracy of 99.76% and 99.57% on the multiple cameras fall and UR fall detection dataset. © 2013 IEEE.

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**Publication Stage:** Final

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Naguboina, V.K.<sup>a</sup>, Gudey, S.K.<sup>b</sup>

**Enhanced Exponential Reaching Law-Based Sliding Mode Control Of Shunt Active Power Filter In An Electrical Distribution System** [وحدة التحكم بالإنزلاق المبنية على قانون الوصول الأمي المحسن لمرشح القدرة الفعالة المتوازي في شبكة التوزيع الكهربائي] (2021) *Journal of Engineering Research*, 18 (1), pp. 52-61.

**DOI:** 10.53540/tjer.vol18iss1pp52-61

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#### Abstract

In this work, a three-phase Shunt Active Power Filter (ShAPF) is proposed to address the current related issues in a three-phase Electrical Distribution System (EDS). A sliding mode controller (SMC) and an Enhanced Exponential Reaching Law-based SMC (EERL-SMC) are proposed for a ShAPF to compensate for the load current. The controller's performance is tested by injecting the current harmonics into the system. A non-linear load along with different loads on the distribution side is connected in parallel in a distribution network at the point of common coupling (PCC). Modelling of the system is done using state-space analysis. The stability of the system is analyzed using the state feedback approach. The reference source currents are generated using the instantaneous PQ theory. For variations in the load, the THD in the source current is realized. It is found that EERL-SMC is more effective for a ShAPF in reducing the high-frequency oscillations and settling time for convergence. The source voltage and current waveforms are observed to be sinusoidal. Both the controllers are effective in reducing the THD levels in the source current as per the IEEE standards. A comparison between the controllers is presented in terms of settling time, THD in source current. PSCAD v4.6 is used for simulation works. © 2021. Journal of Engineering Research. All Rights Reserved

**Publisher:** Sultan Qaboos University

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

64) Kumar, M.T.K.<sup>a</sup>, Kishore, P.V.V.<sup>a</sup>, Madhav, B.T.P.<sup>a</sup>, Kumar, D.A.<sup>b</sup>, Kala, N.S.<sup>c</sup>, Rao, K.P.K.<sup>c</sup>, Prasad, B.<sup>d</sup>

**Can Skeletal Joint Positional Ordering Influence Action Recognition on Spectrally Graded CNNs: A Perspective on Achieving Joint Order Independent Learning** (2021) *IEEE Access*, 9, pp. 139611-139626.

**DOI:** 10.1109/ACCESS.2021.3119455

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#### Abstract

3D skeletal based action recognition is being practiced with features extracted from joint positional sequence modeling on deep learning frameworks. However, the spatial ordering of skeletal joints during the entire action recognition lifecycle is found to be fixed across datasets and frameworks. Intuition inspired us to investigate through experimentation, the influence of multiple random skeletal joint ordered features on the performance of deep learning systems. Therefore, the argument: Can joint order independent learning for skeletal action recognition practicable? If practicable, the goal is to discover how many different types of randomly ordered joint feature representations are sufficient for training deep networks. Implicitly, we further investigated on multiple features and deep networks that recorded highest performance on jumbled joints. This work proposes a novel idea of learning skeletal joint volumetric features on a spectrally graded CNN to achieve joint order independence. Intuitively, we propose 4 joint features called as quad joint volumetric features (QJVF), which are found to offer better spatio temporal relationships between time series joint data when compared to existing features. Consequently, we propose a Spectrally graded Convolutional Neural Network (SgCNN) to characterize spatially divergent features extracted from jumbled skeletal joints. Finally, evaluation of the proposed hypothesis has been experimented on our 3D skeletal action KLHA3D102, KLYOGA3D datasets along with benchmarks, HDM05, CMU and NTU RGB D. The results demonstrated that the joint order independent feature learning is achievable on CNNs trained on quantified spatio temporal feature maps extracted from randomly shuffled skeletal joints from action sequences. © 2013 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Article  
**Publication Stage:** Final  
**Source:** Scopus

- 65) Satyanarayana, K.V.<sup>a</sup>, Rao, N.T.<sup>b</sup>, Bhattacharyya, D.<sup>c</sup>, Hu, Y.-C.<sup>d</sup>

**Identifying the presence of bacteria on digital images by using asymmetric distribution with k-means clustering algorithm**

(2022) *Multidimensional Systems and Signal Processing*, 33 (2), pp. 301-326.

**DOI:** 10.1007/s11045-021-00800-0

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**Abstract**

This paper is mainly aimed at the decomposition of image quality assessment study by using Three Parameter Logistic Mixture Model and k-means clustering (TPLMM-k). This method is mainly used for the analysis of various images which were related to several real time applications and for medical disease detection and diagnosis with the help of the digital images which were generated by digital microscopic camera. Several algorithms and distribution models had been developed and proposed for the segmentation of the images. Among several methods developed and proposed, the Gaussian Mixture Model (GMM) was one of the highly used models. One can say that almost the GMM was playing the key role in most of the image segmentation research works so far noticed in the literature. The main drawback with the distribution model was that this GMM model will be best fitted with a kind of data in the dataset. To overcome this problem, the TPLMM-k algorithm is proposed. The image decomposition process used in the proposed algorithm had been analyzed and its performance was analyzed with the help of various performance metrics like the Variance of Information (VOI), Global Consistency Error (GCE) and Probabilistic Rand Index (PRI). According to the results, it is shown that the proposed algorithm achieves the better performance when compared with the previous results of the previous techniques. In addition, the decomposition of the images had been improved in the proposed algorithm. © 2021, The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature.

**Publisher:** Springer

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**Publication Stage:** Final  
**Source:** Scopus

- 66) Vummadiseti, S.<sup>a</sup>, Pasalapudi, S.R.<sup>b</sup>, Gottapu, S.K.<sup>c</sup>, Goriparthi, K.K.<sup>c</sup>, Batu, A.<sup>d</sup>

**Structural Classification of Basalt FRP at High Temperatures**

(2021) *Advances in Materials Science and Engineering*, 2021, art. no. 6917471, .

**DOI:** 10.1155/2021/6917471

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**Abstract**

In this study, two different temperatures are considered to verify the mechanical response of basalt fiber-reinforced polymer specimens. Initially, fibers are subjected to 300°C temperature for 4 hours and 600°C temperature for 2 hours in an electrical muffle furnace effectively. Later, laminates were prepared with these fibers and machined into test strips to verify their mechanical properties by conducting tensile and flexural tests. These laminates were compared with specimens prepared with normal fibers, i.e., fibers without temperature treatment. Moreover, the ductility and elastic behavior of the basalt fiber-laminated specimens are studied to figure out the possible structural applications. The residual stress of specimens



subjected to 300°C temperature under tensile loading is about 84%, whereas for 600°C temperature, it is only 13% of maximum stress. A similar trend has been observed for specimens tested under flexural loading condition. Hence, it is concluded that the basalt fiber-reinforced polymer laminate can withstand and depict satisfactory results up to 300°C elevated temperature irrespective of time. © 2021 Sudhir Vummadisetti et al.

**Publisher:** Hindawi Limited

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

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**Enhancement in performance of DHT precoding over WHT for EC companded OFDM in wireless networks**  
(2021) *Applied Nanoscience (Switzerland)*, .

**DOI:** 10.1007/s13204-021-02016-x

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#### Abstract

In this paper, a new hybrid methodology that combines precoding transform and companding transforms is being proposed for next-generation heterogeneous wireless networks. This method will improve the performance of the orthogonal frequency division multiplexing (OFDM) system by reducing the Peak to average power ratio (PAPR). A hybrid methodology that combines exponential companding (EC), which is a non-linear companding technique with Discrete Hartley Transform (DHT), as well as Walsh Hadamard Transform (WHT), is proposed and investigated. When the three simulated results are compared with original OFDM signal, piecewise linear companding shows an improvement factor of 28.8% over the original OFDM signal. Exponential companding is having an improvement factor of 33.49% over the original OFDM signal. Walsh Hadamard transform combined with exponential companding shows an improvement factor of 34.99% over OFDM. Discrete Hartley Transform combined with Exponential Companding is having an improvement factor of 38.09% over OFDM. The two proposed methods do not introduce any In-band distortion as well as Out-of-band Radiation when compared to the existing technique PLC (Meixia et al. in IEEE Trans Broadcast 60(3):532-539, 2014) which can be observed from the PSD analysis. Among the two proposed methods, the DHT precoded OFDM with the EC system shows significant BER improvement over the remaining methods. In addition to AWGN Channel, this proposed method shows significant BER performance improvement under the SUI-1 to 6 (WiMAX Channels) channels making use of 256-QAM as the modulation technique. As we move to a higher-order constellation, it is possible to transmit more bits per symbol; in such cases, the proposed technique will achieve better improvement in the performance of BER over all the existing techniques. © 2021, King Abdulaziz City for Science and Technology.

**Publisher:** Springer Science and Business Media Deutschland GmbH

**Document Type:** Article

**Publication Stage:** Article in Press

**Source:** Scopus

68) Lydia, E.L.<sup>a</sup>, Madhusudhana Rao, T.V.<sup>a</sup>, Vijaya Kumar, K.<sup>b</sup>, Mohan, A.K.<sup>c</sup>, Lingamgunta, S.<sup>c</sup>

**Challenging data models and data confidentiality through “pay-as-you-go” approach entity resolution**  
(2021) *Lecture Notes on Data Engineering and Communications Technologies*, 66, pp. 469-482.

**DOI:** 10.1007/978-981-16-0965-7\_37

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#### Abstract

Problem importance: Predictive analytics seems to be an exceptionally complex and vital concern in domains like computer science, biology, agriculture, business, and national security. When big data applications were indeed accessible, highly efficient cooperation processes are often meaningful. Simultaneously time, new subjective norms originate when the high quantities of data will conveniently assert confidential data. This paper has reviewed two complementary huge issues: data integration and privacy, the ER "pay-as-you-go" approach (Whang et al. in *IEEE Trans Knowl Data Eng* 25(5):1111–1124 (2012) [1]) in which it explores how the developments of ER is maximized to short-term work. Stepwise ER problem (Whang and Molina in *PVLDB* 3(1):1326–1337 (2010) [2]) is not even a unique process; it is done concurrently by the better usage of information, schemes, and applications. Joint ER problem with multiple independent datasets are fixed in collaboration (Whang and Molina in *ICDE* (2012) [3]) and the problem of ER with inconsistencies (Whang et al. in *VLDB J* 18(6):1261–1277 (2009) [4]). To overcome the research gap in the existing system, the proposed research work addresses an entity resolution (ER) problem that tends to address the records in databases referring to a certain complex real-time entity. © The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd. 2021.

**Publisher:** Springer Science and Business Media Deutschland GmbH

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**Source:** Scopus

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**Wearable sensor based acoustic gait analysis using phase transition-based optimization algorithm on IoT** (2021) *International Journal of Speech Technology*, .

**DOI:** 10.1007/s10772-021-09893-1

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### Abstract

Gait monitoring with IOT has emerged as an important area of research because of the need of assessment of daily activities of patients and elder people. Ailments such as Parkin's stroke and the need of monitoring physically challenged persons in a crowd have been the driving force in the research of gait analysis. The evaluation of athletic performance is yet another area of application. Current measurement techniques rely on gait parameters, and the accuracy due to different gait-related occurrences is very restricted. Many sophisticated sensor-based gait patterns were established to keep the patient from falling and alerting in an emergency. The main objective of this research endeavour paper is to utilize phase transition based optimization in IOT environment for developing characteristic phases which maybe stable, unstable or Meta stable. The method proposed by IOT is used to detect early stage failure to monitor by data produced by signals interacted with wearable sensors. Moreover, optimisation is performed for forecasting and detecting fall more effectively in comparison with conventional gait analysis. In this phase transition based optimization fitness function of the subject is defined by degrees of order and disorder. Similar to genetic algorithm, the elements of individual nodes are considered based on initial population and size. The current generation evolves the next through operators along with terminal condition. For high fitness value, the stability is worse and based on fitness, the 3 phases are defined. For the experimentation, real time data of 50 participants having 20 elder persons and 20 physically challenged persons with other from stroke cases is processed on MATLAB 14.1. Sensors are placed at leg, hip and toe: the collected data are processed in the processing unit before classification. Following cuckoo search method with many iterations. False alarm rate probability and detection probability are plotted using the ROC and having a threshold between these on the histogram in dynamic range. It is observed that the proposed method has less false ratio and greater accuracy in comparison with KNN 88% and HMDTW models. Moreover, the average precision of 96.42% is achieved by this method; the maximum detection rate is 96% for given gait cycle. It is inferred that phase transition and adaptive cuckoo search method can be effectively combined so give better classification accuracy, detection sets and time of duration. Interpolated IOT adds to the effectiveness of the proposed system to the extent of accuracy of 98.44% and false ratio of 2.02%. © 2021, The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature.

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70)

Lydia, E.L.<sup>a</sup>, Gummadi, J.M.<sup>b</sup>, Nukapeyi, S.<sup>c</sup>, Lingamgunta, S.<sup>d e</sup>, Mohan, A.K.<sup>d e</sup>, Daniel, R.<sup>f</sup>

### Cloud-based smart environment using internet of things (IoT)

(2021) *Lecture Notes on Data Engineering and Communications Technologies*, 66, pp. 217-225.

**DOI:** 10.1007/978-981-16-0965-7\_18

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### Abstract

Internet of things (IoT) is a primary computational paradigm to develop a smart environment in every area of health, city, factory, and home in our daily lives. It incorporates wireless transmissions to all sensor devices through the internet. Equipping a smart environment to the society, IoT as the primary source provides alter-native diversified communicating characteristics. Its ecosystem is the solution to all communication technologies as well as designed architectures. This paper deals with distinct core requirements to generate reusable features and technologies to develop a smart environment. Technological architectures like Radio Frequency Identification (RFID) and Constrained Node Network (CNN) are identified to enhance the Internet of things. This paper also describes the necessity of having smart environment sensors with the Internet of Things (IoT). This shows the involvement of a smart environment crossing all communicative disputes from the technical and informative perspective that desires to fulfill the efforts of the people in the coming years. © The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd. 2021.

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71) Vetriselvi, T.<sup>a</sup>, Lydia, E.L.<sup>b</sup>, Mohanty, S.N.<sup>c d</sup>, Alabdulkreem, E.<sup>e</sup>, Al-Otaibi, S.<sup>f</sup>, Al-Rasheed, A.<sup>f</sup>, Mansour, R.F.<sup>g</sup>

### Deep learning based license plate number recognition for smart cities

(2021) *Computers, Materials and Continua*, 70 (1), pp. 2049-2064.

**DOI:** 10.32604/cmc.2022.020110

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### Abstract

Smart city-aspiring urban areas should have a number of necessary elements in place to achieve the intended objective. Precise controlling and management of traffic conditions, increased safety and surveillance, and enhanced incident avoidance and management should be top priorities in smart city management. At the same time, Vehicle License Plate Number Recognition (VLPNR) has become a hot research topic, owing to several real-time applications like automated toll fee processing, traffic law enforcement, private space access control, and road traffic surveillance. Automated VLPNR is a computer vision-based technique which is employed in the recognition of automobiles based on vehicle number plates. The current research paper presents an effective Deep Learning (DL)-based VLPNR called DL-VLPNR model to identify and recognize the alphanumeric characters present in license plate. The proposed model involves two main stages namely, license plate detection and Tesseract-based character recognition. The detection of alphanumeric characters present in license plate takes place with the help of fast RCNN with Inception V2 model. Then, the characters in the detected number plate are extracted using Tesseract Optical Character Recognition (OCR) model. The performance of DL-VLPNR model was

tested in this paper using two benchmark databases, and the experimental outcome established the superior performance of the model compared to other methods. © 2021 Tech Science Press. All rights reserved.

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- 72) Anupama, C.S.S.<sup>a</sup>, Natrayan, L.<sup>b</sup>, Lydia, E.L.<sup>c</sup>, Wahab Sait, A.R.<sup>d</sup>, Escorcia-Gutierrez, J.<sup>e</sup>, Gamarra, M.<sup>f</sup>, Mansour, R.F.<sup>g</sup>

**Deep learning with backtracking search optimization based skin lesion diagnosis model**

(2021) *Computers, Materials and Continua*, 70 (1), pp. 1297-1313.

**DOI:** 10.32604/cmc.2022.018396

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**Abstract**

Nowadays, quality improvement and increased accessibility to patient data, at a reasonable cost, are highly challenging tasks in healthcare sector. Internet of Things (IoT) and Cloud Computing (CC) architectures are utilized in the development of smart healthcare systems. These entities can support real-time applications by exploiting massive volumes of data, produced by wearable sensor devices. The advent of evolutionary computation algorithms and Deep Learning (DL) models has gained significant attention in healthcare diagnosis, especially in decision making process. Skin cancer is the deadliest disease which affects people across the globe. Automatic skin lesion classification model has a highly important application due to its fine-grained variability in the presence of skin lesions. The current research article presents a new skin lesion diagnosis model i.e., Deep Learning with Evolutionary Algorithm based Image Segmentation (DL-EAIS) for IoT and cloud-based smart healthcare environments. Primarily, the dermoscopic images are captured using IoT devices, which are then transmitted to cloud servers for further diagnosis. Besides, Backtracking Search optimization Algorithm (BSA) with Entropy-Based Thresholding (EBT) i.e., BSA-EBT technique is applied in image segmentation. Followed by, Shallow Convolutional Neural Network (SCNN) model is utilized as a feature extractor. In addition, Deep-Kernel Extreme Learning Machine (D-KELM) model is employed as a classification model to determine the class labels of dermoscopic images. An extensive set of simulations was conducted to validate the performance of the presented method using benchmark dataset. The experimental outcome infers that the proposed model demonstrated optimal performance over the compared techniques under diverse measures. © 2021 Tech Science Press. All rights reserved.

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- 73) Sampath Dakshina Murthy, A.<sup>a b</sup>, Karthikeyan, T.<sup>a</sup>, Vinoth Kanna, R.<sup>c</sup>

**Gait-based person fall prediction using deep learning approach**

(2021) *Soft Computing*, .

**DOI:** 10.1007/s00500-021-06125-1

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**Abstract**

Technology development and digital techniques provide wide opportunities to develop automatic systems. With the help of automated assessment systems, fall prediction for elders or persons with walking disabilities can be identified. Instead of conventional manual video assessment, the prediction accuracy can be improved if the person's gait model is analyzed. Various gait analysis models are evolved in the recent era that uses support vector machine, artificial neural network, and backpropagation neural network for analysis. However, analyzing gait energy images for fall prediction is addressed in limited research works. Considering this research gap this research work proposed a gait-based fall prediction model using a deep learning approach and identifies the early fall of persons with walking disabilities. Gait energy image is used as input for the proposed deep convolutional neural network (DCNN) to predict the early fall. The proposed DCNN model attains a classification accuracy of 99.1% and prediction ratio of 98.64% which is much better than conventional ResNet 50 and CNN method-based gait analysis. Few other parameters, such as specificity, sensitivity, and detection accuracy, are also analyzed to validate the proposed model performance. © 2021, The Author(s), under exclusive licence to Springer-Verlag GmbH Germany, part of Springer Nature.

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**Hyperparameter search based convolution neural network with Bi-LSTM model for intrusion detection system in multimedia big data environment**

(2021) *Multimedia Tools and Applications*, .

**DOI:** 10.1007/s11042-021-11271-7

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**Abstract**

In recent years, there is an exponential increase in the growth of the multimedia data, which is being generated from zettabyte to petabyte scale. At the same time, security issues in networks, Internets and organizations are also continues to increase. The process of finding intrusions in such a big data environment is not easier. Different types of intrusion-detection system (IDS) have been presented for diverse kinds of networking attacks, however, many models could be identified unknown attacks. Deep learning (DL) approaches lately employed to large-scale big data analysis for effectual outcome. In this view, this paper presents a new deep learning based hyperparameter search (HPS) convolutional neural network with Bi-directional long short term memory (CBL) model called HPS-CBL for intrusion detection in big data environment. The HPS-CBL model make use of CBL technique for the identification of intrusions in the network. Since the proper tuning of hyperparameters of the CBL network is highly important, the proposed model uses improved genetic algorithm (IGA) for hyperparameter tuning. The proposed HPS-CBL is validated using a UNSW-NB15 dataset and the results are validated under diverse evaluation parameters. The obtained experimental outcome clearly stated the superior nature of the HPS-CBL model over the compared methods by attaining a maximum precision of 99.24%, recall of 98.69%, F-score of 98.97% and accuracy of 98.18% respectively. © 2021, The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature.

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- 75) Smyshlyayev, A.V.<sup>a</sup>, Petrov, R.E.<sup>b</sup>, Lydia, E.L.<sup>c</sup>, Okagbue, H.I.<sup>d</sup>, Mikhailova, M.V.<sup>e</sup>, Zakieva, R.R.<sup>f</sup>

**Patient-oriented approach in public health as a factor in the formation of a model of healthy behaviour (formation of sports lifestyle, introduction of individual physical activity)**

(2021) *Journal of Human Sport and Exercise*, 16 (Proc2), pp. 387-394.

**DOI:** 10.14198/jhse.2021.16.Proc2.23

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### Abstract

Currently, the introduction of the patient-oriented approach in healthcare is relevant in the framework of improving the quality and accessibility of medical care. The aim of the research was to study the conditions and principles of the formation of a patient-oriented model of a medical organization. The study used research materials in the field of patient-oriented treatment in healthcare. The main research method was content analysis. The patient-centred approach is based on eight principles: respect for consumer values; integrity of the medical diagnostic process; patient awareness; creation of comfortable conditions; providing emotional support; ensuring the continuity of the treatment process; ensuring access to medical care. The introduction of the patient-oriented approach may be hindered by a number of factors: an inflexible system of remuneration and linking the number of patients served to the level of remuneration. In addition, the key basic principle of the patient-oriented approach is to increase patient compliance and patient loyalty. Thus, when forming patient-oriented management in a medical organization, it is necessary to be guided in decision-making primarily by the interests of the patient. The introduction of the patient-oriented approach leads to increased commitment and loyalty of future patients. The development of a patient-oriented approach is also an important factor in strengthening public health (the formation of a sports lifestyle, the introduction of individual physical activity). © Faculty of Education. University of Alicante

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**Source:** Scopus

76) Raju, K.N.<sup>a</sup>, Sirisha, A.<sup>b</sup>, Nanaji, U.<sup>c</sup>, Sharma, S.K.<sup>b</sup>, Kumar, C.R.<sup>d</sup>

### An adaptive hello interval for AODV through ANFIS to improve the performance of MANETs

(2021) *International Journal of Knowledge-Based and Intelligent Engineering Systems*, 25 (2), pp. 235-242.

**DOI:** 10.3233/KES-210067

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### Abstract

Mobile Ad Hoc Network is an easily deployable wireless network without any need of centralized infrastructure. The change of position by wireless devices lead to link failures and route failures. The mobile nodes sent hello messages at regular intervals to update the status of their neighbors. Increasing the number of periodical notifications such as hello messages will give an idea about the topology and at the same moment consumes more network resources. Reducing these periodic notifications results in discovering the neighbors at very slow rate. Therefore the rate of hello messages has most significant role while considering the performance of MANETs. Routing Protocols such as AODV in MANETs performs the operation basing on static hello interval. In this paper an adaptive hello interval approach is proposed based on a soft computing technique 'Adaptive Neuro Fuzzy Inference system' for in MANETs. The result states that the proposed solution yields a great improvement over the traditional protocol 'AODV'. © 2021 - IOS Press. All rights reserved.

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**Source:** Scopus

77) Gali, V.<sup>a</sup>, Varaprasad, M.V.G.<sup>b</sup>, Gupta, S.K.<sup>a</sup>, Gupta, M.<sup>a</sup>

**Performance investigation of multifunctional grid connected PV interleaved inverter with power quality enhancement**

(2021) *Energy Systems*, .

**DOI:** 10.1007/s12667-021-00465-5

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**Abstract**

Design and hardware prototype development of interleaved inverter in the laboratory for photovoltaic applications is discussed in this paper. Conventional voltage source inverter (VSI) is suffering with shoot-through problems which lead to electromagnetic interference (EMI), temperature rise in power electronic devices, ringing effect, etc. To eliminate these problems, interleaved inverter topology is proposed in this paper. This topology works with control technique to perform multifunctional operation in order to enhance the system efficiency. The control strategy is distributed into two parts, one is to enhance the power harvesting from PV array using maximum power point tracking (MPPT) algorithm. Second one is self-charging of DC-link voltage control loop with double band hysteresis current controller (DBHCC). The self-charging DC-link voltage control loop generates the reference current signal for mitigating current related power quality problems and DBHCC offers lower switching frequency, therefore low switching losses. A MATLAB®/Simulink software is used for implanting the proposed system. A rigorous simulation study has been carried out to verify the multi-functionality and ruggedness of the proposed system. A laboratory prototype is developed using TMS320F28027 DSP controller to validate the simulation results. The test results show that the proposed system is performing multifunctional operation by injecting active power to the grid during day time and mitigate the PQ problems during the night time effectively without shoot-through problems. © 2021, The Author(s), under exclusive licence to Springer-Verlag GmbH Germany, part of Springer Nature.

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78) Vasantharaj, A.<sup>a</sup>, Rani, P.S.<sup>b</sup>, Huque, S.<sup>c</sup>, Raghuram, K.S.<sup>d</sup>, Ganeshkumar, R.<sup>e</sup>, Shafi, S.N.<sup>f</sup>

**Automated Brain Imaging Diagnosis and Classification Model using Rat Swarm Optimization with Deep Learning based Capsule Network**

(2021) *International Journal of Image and Graphics*, art. no. 2240001, .

**DOI:** 10.1142/S0219467822400010

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**Abstract**

Earlier identification of brain tumor (BT) is essential to increase the survival rate of the patients. The commonly used imaging technique for BT diagnosis is magnetic resonance imaging (MRI). Automated BT classification model is required for assisting the radiologists to save time and enhance efficiency. The classification of BT is difficult owing to the non-uniform shapes of tumors and location of tumors in the brain. Therefore, deep learning (DL) models can be employed for the effective identification, prediction, and diagnosis of diseases. In this view, this paper presents an automated BT diagnosis using rat swarm optimization (RSO) with deep learning based capsule network (DLCN) model, named RSO-DLCN model. The presented RSO-DLCN model involves bilateral filtering (BF) based preprocessing to enhance the quality of the MRI. Besides, non-iterative grabcut based segmentation (NIGCS) technique is applied to detect the affected tumor regions. In addition, DLCN model based feature extractor with RSO algorithm based parameter optimization processes takes place. Finally, extreme learning machine with stacked autoencoder (ELM-SA) based classifier is employed for the effective classification of BT. For validating the BT diagnostic performance of the presented RSO-DLCN model, an extensive set of simulations were carried out and the results are inspected under diverse dimensions. The simulation outcome demonstrated the promising results of the RSO-DLCN model on BT diagnosis with the sensitivity of 98.4%, specificity of 99%, and accuracy of 98.7%. © 2022 World Scientific Publishing Company.

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**Source:** Scopus

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**Generative Adversarial Networks with Quantum Optimization Model for Mobile Edge Computing in IoT Big Data**  
 (2021) *Wireless Personal Communications*, .

**DOI:** 10.1007/s11277-021-08706-7

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#### Abstract

In present times, a massive quantity of big data has been generated by the Internet of Things (IoT) devices for a wide range of applications. The IoT devices generate an enormous data quantity that is troublesome for data processing and analytics functionalities, which is effortlessly managed by the cloud before the explosive development of the IoT. Specifically, the big IoT data analytics by mobile edge computing (MEC) becomes a hot research topic and needs comprehensive research works for intelligent decision making. This paper introduces a new generative adversarial network (GAN) with a quantum elephant herd optimization (QEHO) algorithm for MEC in IoT enabled big data environment called GAN-QEHO. The presented GAN-QEHO algorithm follows two-stage processes, namely feature selection (FS) and data classification. The QEHO algorithm is used to elect an optimal feature subset for the FS process. By the quantization of elephant individuals, the search scope of feature space can be enhanced, and an optimal tradeoff has been attained among exploration and exploitation. Then, the GAN model is employed for the classification process to identify different class labels. In order to validate the experimental results analysis of the GAN-QEHO algorithm, a series of simulations take place in terms of diverse aspects. © 2021, The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature.

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**Publication Stage:** Article in Press  
**Source:** Scopus

- 80) Dhanunjayarao, B.N.<sup>a b</sup>, Sanivada, U.K.<sup>c</sup>, Swamy Naidu, N.V.<sup>b</sup>, Figueiro, R.<sup>c d</sup>

**Effect of graphite particulate on mechanical characterization of hybrid polymer composites**  
 (2021) *Journal of Industrial Textiles*, .

**DOI:** 10.1177/15280837211010670

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#### Abstract

Quest for producing lightweight and biodegradable materials has encouraged researchers to replace synthetic fibers with natural fibers. Hence a study is made to investigate the effects of introducing secondary reinforcement (natural fibers), stacking sequence, and addition of graphite particles on the mechanical characteristics and water uptakes along with diffusivity of hybrid (glass/jute) composites. Different weight fractions of graphite particulates are incorporated into the epoxy to produce different samples having 4 plies for each sample by hand layup vacuum bagging method. The obtained specimens are subjected to various mechanical tests, water absorption tests as per the ASTM standards, and optical microscopy was used to study the fracture morphology of the samples. The results displayed that the properties are deteriorated a little with the addition of secondary reinforcement, however they have improved with the addition of graphite.



E-Glass as skin layer and treated jute as core layer composite exhibits ameliorate tensile strength (201.5 MPa), compression strength (515.12 MPa), flexural strength (106.9 MPa), hardness (25 BHN). However highest impact energy of 26 J is recorded for the sample with jute as skin layer and E-Glass as the core layer. Water absorption tests revealed that the addition of graphite has reduced the water absorption in the hybrid samples. © The Author(s) 2021.

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**Source:** Scopus

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**A new ranking approach for finding optimum solution for iftp of type-1**

(2021) *Advances in Mathematics: Scientific Journal*, 10 (3), pp. 1377-1388.

**DOI:** 10.37418/amsj.10.3.26

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**Abstract**

In today's daily life situations TP we frequently face the situation of unreliability in addition to unwillingness due to various unmanageable compo-nents. To handle with unreliability and unwillingness multiple researchers have recommended the intuitionistic fuzzy (IF)delineation for material. So, here, we contemplate a fuzzy TP of type-1 IFN's, i.e., availability and demand are TIFN's and costs are real numbers. We apply IFZPM and IFMODIM to find optimum solution of a IFTP of type-1 make use of proposed ranking function. The same existing method is applied to proposed ranking function is comparatively give the same result. A relevant numerical example is also included. © 2020 Global Research Online. All rights reserved.

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**Synthesis, structural and microstructural properties of CBN ferroelectric ceramics**

(2021) *Ferroelectrics*, 573 (1), pp. 154-165.

**DOI:** 10.1080/00150193.2021.1890471

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**Abstract**

Ca x Ba1-x Nb2O6 (CBN) ceramics with tetragonal tungsten bronze (TTB) structures are very attractive from academic and technological fronts due to their stupendous ferroelectric properties. Polycrystalline samples of Ca x Ba1-x Nb2O5 were prepared by a high temperature solid state reaction technique. The phase formation, microstructure and optical properties of the prepared samples were investigated by X-ray diffraction, scanning electron microscope and Raman spectrometer, respectively. X-ray analysis confirms the partially filled tetragonal tungsten bronze (TTB) structure. Scanning electron micrographs provide information related to the morphology and grain size distribution of the samples. Detailed analysis of the structural and optical properties suggests that these samples have undergone a phase transition well above the room temperature. © 2021 Taylor & Francis Group, LLC.

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**Synthesis and analysis of zirconium titanate thin films by using sol-gel method**

(2021) *Biointerface Research in Applied Chemistry*, 11 (5), pp. 12761-12768.

**DOI:** 10.33263/BRIAC115.1276112768

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**Abstract**

Titanium-doped zirconium oxide (mixed high-k) has been used as the gate oxide layer for the future generation metal oxide semiconductor devices. This mixed high-k layer was prepared by using Sol-Gel based spin-coated method. This mixed high-k layer's chemical, structural, and initial electrical properties are investigated thoroughly. It is clearly confirmed that the suitable chemical composition and bond formation of the proposed mixed high-k layer from EDAX and FTIR analysis observations. The XRD spectra strengthened the presence of ZrTiO<sub>2</sub>. The measured dielectric constant of the proposed mixed high-k layer from the extracted C-V plots has been varying from 29.1 to 37.6 with respect to spin coating from 4000 to 6000 rpm. With lower spin rates, the leakage current is less. © 2020 by the authors.

**Publisher:** AMG Transcend Association

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 84) Hait, P.<sup>a b</sup>, Sil, A.<sup>a</sup>, Choudhury, S.<sup>a</sup>

**Prediction of global damage index of reinforced concrete building using artificial neural network**

(2021) *International Journal for Computational Methods in Engineering Science and Mechanics*, 22 (5), pp. 386-399.

**DOI:** 10.1080/15502287.2021.1887405

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<sup>b</sup> Civil Engineering Department, Vignan's Institute of Information Technology (A), Visakhapatnam, India

**Abstract**

Determination of structural damage index (DI) is tedious and time consuming process using the available conventional methods. Traditional multivariable regression (MVR) model had been fitted by researchers to find out global damage index (GDI) of buildings although the outcome was not up to the mark. In this paper, the GDI of 18 samples of 8-storey and 12-storey reinforced concrete (RC) buildings with nine irregular plans in each height category have been predicted using artificial neural network (ANN). The results show that maximum damage occurs at the ground storey and minimum damage occurs at the top storey for all cases considered. From the MVR model, it has been found that, inter-storey drift (IDR) and stiffness are not significant input parameters whereas, joint rotation, dissipated hysteretic energy, ductility, and peak roof displacement are the significant input parameters. Based on the numerical results derived, an ANN based GDI prediction model has been derived. In comparison to MVR model, the performance of ANN model is found to be satisfactory. © 2021 Taylor & Francis Group, LLC.

**Publisher:** Taylor and Francis Ltd.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 85) Prasamsa, K.V.<sup>a</sup>, Kameswari, P.A.<sup>b</sup>, Raju, K.N.<sup>c</sup>, Surendra, T.<sup>d</sup>, Devi, D.M.<sup>a</sup>

**A key exchange algorithm with binary quadratic forms to design complex security framework**  
(2021) *Advances in Mathematics: Scientific Journal*, 10 (1), pp. 589-595.

**DOI:** 10.37418/AMSJ.10.1.58

<sup>a</sup> Department of Mathematics, Vignan's Institute Of Information Technology, Visakhapatnam, A.P, India

<sup>b</sup> Department of Mathematics, Andhra University, A.P, India

<sup>c</sup> Department of CSE, Lendir Institute Of Information Technology, Vizianagram, A.P, India

<sup>d</sup> Department of Mathematics, Gitam University, Visakhapatnam, AP, India

#### Abstract

A binary quadratic form  $f(x, y)$  is a homogeneous polynomial  $f(x, y) = ax^2 + bxy + cy^2$  of degree 2 denoted by  $(a, b, c)$  where the coefficients  $a, b$  and  $c$  are fixed integers and the variables  $x$  and  $y$  are restricted to integers. A binary quadratic form will possess its equivalent form by the unimodular substitution. Therefore, computing the unimodular matrix used, from the equivalent form is difficult in general for the binary quadratic forms. This difficulty regarding the unimodular substitutions for computing the equivalent binary quadratic forms is another source for trapdoor functions in Public Key Cryptosystem. In this paper, we described how linear transformations of  $x$  and  $y$  variables can change one binary quadratic form into other form by a unimodular substitution in the key exchange cryptosystem and proposed a method for recovering the secret key in the key exchange system using binary quadratic forms. © 2021, Research Publication. All rights reserved.

**Publisher:** Research Publication

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 86) Meeravali, S.<sup>a</sup>, Bhattacharyya, D.<sup>b</sup>, Rao, N.T.<sup>c</sup>, Hu, Y.-C.<sup>d</sup>

**Performance analysis of an improved forked communication network model**  
(2021) *Connection Science*, 33 (3), pp. 645-673.

**DOI:** 10.1080/09540091.2020.1867064

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<sup>c</sup> Department of Computer Science and Engineering, Vignan's Institute of Information Technology, Visakhapatnam, India

<sup>d</sup> Department of Computer Science and Information Management, Providence University, Taichung City, Taiwan

#### Abstract

The utilisation of communication network models is growing day by day in a drastic way around the world. In order to communicate the data round the devices, the utilisation or the establishment of communication networks is mandatory. In this paper, a forked communication network model with the base of a queuing model and the equations developed for a better understanding of the model. The results calculated with the help of MATLAB and MathCAD Software. The results observed in detail in the results section. To better understand the performance of the current forked model of communication network, the performance metrics of the current network model had compared with the performance metrics of the previous two three-node communication networks. The comparison done with the arrival process of packets to the network in one model follows the Duane process. In other model follows the Poisson process, whereas in the current model follows the Homogeneous Poisson process of arrivals. The comparison had given in detail in the comparison section. © 2021 Informa UK Limited, trading as Taylor & Francis Group.

**Publisher:** Taylor and Francis Ltd.

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

- 87) Ramana, C.V.V.<sup>a</sup>, Jagadeesh Chandra, S.V.<sup>b</sup>, Dubey, R.S.<sup>c</sup>, Eswara Rao, B.<sup>b</sup>

**Solution-based spin cast-processed O-shaped memory devices**  
(2021) *Journal of Materials Science: Materials in Electronics*, 32 (2), pp. 2258-2267.

**DOI:** 10.1007/s10854-020-04990-4

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<sup>b</sup> Department of Electronics and Communication Engineering, Vignan's Institute of Information Technology (A), Duvvada, Vishakhapatnam, Andhra Pradesh 530049, India

<sup>c</sup> Advanced Research Laboratory for Nanomaterials and Devices, Department of Nanotechnology, Swarnandhra College of Engineering and Technology, Narsapur, West Godavari, Andhra Pradesh 534280, India

### Abstract

We have studied the current transport mechanism by investigating the hysteresis behavior of current–voltage characteristics obtained by solution-processed spin casting O-shaped memory devices made up with hybrid organic/inorganic nanocomposites of polyaniline–zinc oxide (PANI–ZnO) onto the indium tin oxide (ITO)-coated glass. The nanocomposites are characterized by Raman spectroscopy, FTIR, XRD, FE-SEM, and HR-TEM. The electrical characterization of the nanocomposites showed distinct I–V characteristics with large hysteresis. A hysteresis-type I–V characteristic represents O-shaped memory. The performance of hysteresis behavior remained constant, even after fifty operation cycles. Based on our investigation analysis, a change of charge transport mechanism occurs, and our data analysis shows that a charge carrier transport mechanism occurs. A normalized differential conductance (NDC) also likely exists. The PANI–ZnO layers controlled the movement of the carriers, and the indium tin oxide–polyaniline–zinc oxide–aluminum (ITO–PANI–ZnO–Al) memory device shows a hysteresis-type current–voltage characteristic. It portrays a specific kind of memory devices with low-cost and low power consumption non-volatile memory applications. © 2021, The Author(s), under exclusive licence to Springer Science+Business Media, LLC part of Springer Nature.

**Publisher:** Springer

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus

88) Srinivasarao, P.<sup>a</sup>, Peddakapu, K.<sup>b</sup>, Mohamed, M.R.<sup>b</sup>, Deepika, K.K.<sup>c</sup>, Sudhakar, K.<sup>d e</sup>

### Simulation and experimental design of adaptive-based maximum power point tracking methods for photovoltaic systems

(2021) *Computers and Electrical Engineering*, 89, art. no. 106910, .

**DOI:** 10.1016/j.compeleceng.2020.106910

<sup>a</sup> Department of Electrical & Electronic Eng., Nalanda Institute of Eng. &Tech.A.P, India

<sup>b</sup> College of Engineering., Universiti Malaysia Pahang, Kuantan, Malaysia

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<sup>e</sup> Automotive Engineering Centre, Universiti Malaysia Pahang, Pekan, Pahang 26600, Malaysia

### Abstract

This paper presents a filter-based adaptive fuzzy proportional integral derivative (FPIDN) controller for photovoltaic (PV) systems. The proposed maximum power point tracking (MPPT) method is implemented in two blocks. The first block represents by an adaptive calculation block; to produce a reference voltage for every maximum power point (MPP), whereas the second is the FPIDN controller; utilized to manage duty cycle of the PWM converter. The effectiveness of the proposed MPPT has been evaluated to different MPPT methods. The efficiency of the proposed MPPT recorded at 99.45% and 99.72% with MPP capture time clocks at 0.048s, outperforms the benchmarked traditional MPPT methods under diverse irradiance and temperature conditions. © 2020 Elsevier Ltd

**Publisher:** Elsevier Ltd

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**Publication Stage:** Final

**Source:** Scopus

89) Sahu, H.K.

### SSK modulated WPCN with Euclidean distance based selection combining receiver

(2021) *Wireless Networks*, 27 (1), pp. 685-692.

**DOI:** 10.1007/s11276-020-02480-3

Department of Electronics and Computer Engineering, Vignan's Institute of Information Technology, Duvvada, Visakhapatnam, 530049, India

**Abstract**

In this paper, the performance of space shift keying (SSK) modulation in a wireless-powered communication network (WPCN) is analysed with selection combining based on generalized Euclidean distance at the receiver. The network considered here is with multiple number of transmitting antennas and multiple number of receiving antennas operates under Rayleigh fading. Based on the Euclidean distance between the SSK modulation constellation points, this scheme selects any number of antennas out of  $N_a$  receiving antennas. Selecting one or  $N_r$  ( $N_r < N_a$ ) number of receiving antennas with energy harvesting, the system performance will improve and the receiver complexity as well as the number of radio frequency (RF) chains can be reduced. A closed form expression for the average bit error probability (ABEP) is derived for two transmitting antennas and  $N_a$  receiving antennas with WPCN using SSK modulation. The numerical results and simulation results are presented to illustrate the energy harvesting on system performance. © 2020, Springer Science+Business Media, LLC, part of Springer Nature.

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Beside VSEZ, Duvvada, Vadlapudi Post, Gajuwaka, Visakhapatnam - 530 049.

Reviews

## Documents

- 1) Gangu, K.K.<sup>a b</sup>, Jonnalagadda, S.B.<sup>b</sup>

**A Review on Metal-Organic Frameworks as Congenial Heterogeneous Catalysts for Potential Organic Transformations**

(2021) *Frontiers in Chemistry*, 9, art. no. 747615, .

DOI: 10.3389/fchem.2021.747615

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<sup>b</sup> School of Chemistry and Physics, Westville Campus, University of KwaZulu-Natal, Durban, South Africa

**Abstract**

Metal-organic frameworks (MOFs) have emerged as versatile candidates of interest in heterogeneous catalysis. Recent research and developments with MOFs positively endorse their role as catalysts in generating invaluable organic compounds. To harness the full potential of MOFs in value-added organic transformation, a comprehensive look at how these materials are likely to involve in the catalytic processes is essential. Mainstays of MOFs such as metal nodes, linkers, encapsulation materials, and enveloped structures tend to produce capable catalytic active sites that offer solutions to reduce human efforts in developing new organic reactions. The main advantages of choosing MOFs as reusable catalysts are the flexible and robust skeleton, regular porosity, high pore volume, and accessible synthesis accompanied with cost-effectiveness. As hosts for active metals, sole MOFs, modified MOFs, and MOFs have made remarkable advances as solid catalysts. The extensive exploration of the MOFs possibly led to their fast adoption in fabricating new biological molecules such as pyridines, quinolines, quinazolinones, imines, and their derivatives. This review covers the varied MOFs and their catalytic properties in facilitating the selective formation of the product organic moieties and interprets MOF's property responsible for their elegant performance. Copyright © 2021 Gangu and Jonnalagadda.

**Publisher:** Frontiers Media S.A.

**Document Type:** Review

**Publication Stage:** Final

**Source:** Scopus

- 2) Chandra, S.<sup>a</sup>, Jagdale, P.<sup>b</sup>, Medha, I.<sup>a c</sup>, Tiwari, A.K.<sup>d</sup>, Bartoli, M.<sup>b</sup>, De Nino, A.<sup>e</sup>, Olivito, F.<sup>e</sup>

**Biochar-supported tio2-based nanocomposites for the photocatalytic degradation of sulfamethoxazole in water—a review**

(2021) *Toxics*, 9 (11), art. no. 313, .

DOI: 10.3390/toxics9110313

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<sup>d</sup> School of Environmental Sciences, Jawaharlal Nehru University, New Delhi, 110067, India

<sup>e</sup> Department of Chemistry and Chemical Technologies, University of Calabria, Via P. Bucci, Rende, 87036, Italy

**Abstract**

Sulfamethoxazole (SMX) is a frequently used antibiotic for the treatment of urinary tract, respiratory, and intestinal infections and as a supplement in livestock or fishery farming to boost production. The release of SMX into the environment can lead to the development of antibiotic resistance among the microbial community, which can lead to frequent clinical infections. SMX removal from water is usually done through advanced treatment processes, such as adsorption, photocatalytic oxidation, and biodegradation. Among them, the advanced oxidation process using TiO<sub>2</sub> and its composites is being widely used. TiO<sub>2</sub> is a widely used photocatalyst; however, it has certain limitations, such as low visible light response and quick recombination of e<sup>-</sup>/h<sup>+</sup> pairs. Integrating the biochar with TiO<sub>2</sub> nanoparticles can overcome such limitations. The biochar-

supported TiO<sub>2</sub> composites showed a significant increase in the photocatalytic activities in the UV-visible range, which resulted in a substantial increase in the degradation of SMX in water. The present review has critically reviewed the methods of biochar TiO<sub>2</sub> composite synthesis, the effect of biochar integration with the TiO<sub>2</sub> on its physicochemical properties, and the chemical pathways through which the biochar/TiO<sub>2</sub> composite degrades the SMX in water or aqueous solution. The degradation of SMX using photocatalysis can be considered a useful model, and the research studies presented in this review will allow extending this area of research on other types of similar pharmaceuticals or pollutants in general in the future. © 2021 by the authors. Licensee MDPI, Basel, Switzerland.

**Publisher:** MDPI

**Document Type:** Review

**Publication Stage:** Final

**Source:** Scopus

- 3) Bhattacharyya, D.<sup>a</sup>, Dinesh Reddy, B.<sup>b</sup>, Kumari, N.M.J.<sup>c</sup>, Rao, N.T.<sup>b</sup>

**Comprehensive analysis on comparison of machine learning and deep learning applications on cardiac arrest**  
(2021) *Journal of Medical Pharmaceutical and Allied Sciences*, 10 (4), pp. 3125-3131.

**DOI:** 10.22270/jmpas.V10I4.1395

<sup>a</sup> Koneru Lakshmaiah Education Foundation, Greenfield, Andhra Pradesh, Vaddeswaram, India

<sup>b</sup> Vignan Institute of Information Technology, Andhra Pradesh, Visakhapatnam, India

<sup>c</sup> Technology and Research, Vignan Foundation for Science, Andhra Pradesh, Guntur, India

#### Abstract

Machine Learning is the technology of having machines to understand and behave as humans do. Refining their learning in supervised manner over time, by feeding them information and data in the form of experiences in the real world. Heart disease has a wide variety of consequences, varying from asymptotically to extreme arrhythmias, and even premature cardiac failure. A comparative computational analysis was conducted on open-source datasets among the most frequently used classification algorithms in Machine Learning and Neural Networks by randomly splitting data in to test and training and in-depth survey of feature selection is addressed. Our study further concentrates on working with massive datasets from prospective study. © 2021 MEDIC SCIENTIFIC. All Rights Reserved.

**Publisher:** MEDIC SCIENTIFIC

**Document Type:** Review

**Publication Stage:** Final

**Source:** Scopus

- 4) Debnath, S.<sup>a d</sup>, Arif, W.<sup>a</sup>, Roy, S.<sup>b</sup>, Baishya, S.<sup>a</sup>, Sen, D.<sup>c</sup>

**A Comprehensive Survey of Emergency Communication Network and Management**  
(2021) *Wireless Personal Communications*, .

**DOI:** 10.1007/s11277-021-09411-1

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<sup>c</sup> GSSST, Indian Institute of Technology Kharagpur, Kharagpur, West Bengal, India

<sup>d</sup> Department of ECE, Vel Tech Rangarajan Dr. Sagunthala R & D Institute of Science and Technology, Chennai, India

#### Abstract

The performance of wireless communication network is important in emergency rescue operations while ensuring optimum usage of limited wireless resources. Due to the disruption of normal wireless communication in a post-disaster scenario, the sustenance of an emergency communication network plays a significant role in relief operations. Under such a scenario, it becomes crucial to monitor the performance and reliability of the protocol in a time-bound manner. Some of the prominent challenges faced by the communication network during this period are related to energy efficiency, resources allocation, reliable connectivity, QoS, network throughput, and interoperability. A comprehensive performance appraisal of the emergency network considering the above-mentioned aspects is extremely important. This review provides a comprehensive survey of the widely used communication technologies applied for setting up an emergency communication network to mitigate the post disaster aftermath. The article also delivers an overview of the integration of new technologies with the existing standards for improving the performance of the disaster communication networks. Finally, we propose



some promising solutions to overcome the limitations of existing emergency communication technologies to improve the overall network performance. © 2021, The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature.

**Publisher:** Springer

**Document Type:** Review

**Publication Stage:** Article in Press

**Source:** Scopus

- 5) Balireddy, S.N.<sup>a b</sup>, Jeyaraj, P.<sup>a</sup>, Mailan Chinnapandi, L.B.<sup>c</sup>, Reddi, C.V.S.N.<sup>d</sup>

**Effect of lamination schemes on natural frequency and modal damping of fiber reinforced laminated beam using Ritz method**

(2021) *International Journal for Simulation and Multidisciplinary Design Optimization*, 12, art. no. 15, .

**DOI:** 10.1051/smdo/2021016

<sup>a</sup> National Institute of Technology Karnataka Surathkal, Mangalore 575 025, India

<sup>b</sup> Vignan's Institute of Information Technology, Andhra Pradesh, Visakhapatnam, 530051, India

<sup>c</sup> Vellore Institute of Technology Chennai, Tamilnadu, 600 127, India

<sup>d</sup> Aditya Engineering College, Andhra Pradesh, Surampalem, India

**Abstract**

The current study focussed on analysing natural frequency and damping of laminated composite beams (LCBs) by varying fiber angle, aspect ratio, material property and boundary conditions. Ritz method with displacement field based on the shear and normal deformable theory is used and the modal damping is calculated using modal strain energy method. Effects of symmetric angle-ply and cross-ply, anti symmetric cross-ply, balanced and quasi-isotropic lay up schemes on modal damping are presented for the first time. Results revealed that influence of lay-up scheme on natural frequencies is significant for the thin beams while the modal damping of the thin beams are not sensitive to lay-up scheme. However, the lay-up scheme influences the damping significantly for the thick beams. Similarly, high strength fiber reinforced LCBs have higher natural frequency while low strength fiber reinforced LCBs have higher damping due to the better fiber-matrix interaction. © S.N. Balireddy et al., Published by EDP Sciences, 2021.

**Publisher:** EDP Sciences

**Document Type:** Review

**Publication Stage:** Final

**Source:** Scopus

- 6) Bhuvaneswari, N.<sup>a</sup>, Suneetha, P.<sup>a</sup>, Kethavathu, S.N.<sup>a</sup>, Pachiyannan, M.<sup>b</sup>

**Recent trends in circular polarization antennas with various feeding structure: A review**

(2021) *Telecommunications and Radio Engineering (English translation of *Elektrosvyaz and Radiotekhnika*)*, 80 (1), pp. 27-34.

**DOI:** 10.1615/TELECOMRADENG.2021035572

<sup>a</sup> Vignan's Institute of Information Technology(A), Andhra Pradesh, Visakhapatnam, 530049, India

<sup>b</sup> Vignan's Foundation for Science, Technology and Research Institute, Andhra Pradesh, 522213, India

**Abstract**

This paper presents the review of circular polarization antennas in various applications in wireless communication. Channel capacity plays an important role in wireless communication. It is found that many researchers have reported novel structures to get circular polarization characteristics. Architectural novelty is involved in the radiator and the feeding structure. The different features in circular polarization antennas are observed with their applications in present-day wireless communication. Various methodologies to obtain circular polarization using microstrip feed and co-planar waveguide feed by different researchers have been discussed. Finally, the antenna miniaturization techniques with respect to polarization are presented. © 2021 by Begell House, Inc.

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Conference Papers

## Documents

- 1) Pramodkumar, A.<sup>a</sup>, Kirankumar, G.<sup>b</sup>, Venkatachari, D.<sup>c</sup>, Sudan, D.M.<sup>d</sup>

**Designing of band-notched UWB antenna and analysis with C-Shaped SRR for Wi-MAX/WLAN and satellite communications**

(2021) *AIP Conference Proceedings*, 2407, art. no. 020006, .

**DOI:** 10.1063/5.0074176

<sup>a</sup> Department of ECE, Vardhamana College of Engineering, Shamshabad, Hyderabad, India

<sup>b</sup> Department of ECE, NIT Andhrapradesh, Tadepalligudem, India

<sup>c</sup> Department of ECE, Lendi Institute of Engineering and Technology, Vizianagram, India

<sup>d</sup> Department of ECE, VIGNAN's Institute of Information Technology, Visakhapatnam, India

**Abstract**

A Compact form of ultra-wideband antenna with C-Shaped Split ring resonator is proposed, it has a band-notched characteristics. This antenna consists of a rectangular patch with C-shaped split ring nature. The proposed antenna is resonating from 2.8-10GHz with VSWR<2. The Circle fashioned slit is imprinted in the emit patch. The main principle of this work is to achieve higher gain for UBW frequencies range except the stop bands. At 3.6GHz, 5.7GHz and 8GHz frequencies the suggested antenna is approximately exhibits the emission pattern in omnidirectional in the plane of H. In order to get the stable radiation pattern characteristics throughout the entire bandwidth, S11 loss of the respective antenna should be less than-10dB. The suggested antenna is successfully simulated and observed various required specifications such as radiation pattern, S11 loss, gain with the aid of HFSS Software. We promised that the recommended antenna is suitable for Wi-MAX/WLAN and Satellite applications. © 2021 Author(s).

**Publisher:** American Institute of Physics Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 2) Kandregula, R., Hemanth, B., Harikishan, A.

**Design and analysis of AC14 ship anchor**

(2021) *Journal of Physics: Conference Series*, 2070 (1), art. no. 012235, .

**DOI:** 10.1088/1742-6596/2070/1/012235

Department of Mechanical Engineering, Vignan's Institute of Information Technology, Andhra Pradesh, Visakhapatnam, 530049, India

**Abstract**

A Ship's anchor makes a ship to be at a fixed location against currents and winds when ship is in rest position. Purpose of anchor is to restrict the drifting of ship, which is occurs due to the currents. Even though there are many different types of anchor, present paper intended to do design and analysis on stockless anchor AC14 type. Project aims to determine the equivalent von-mises stress and maximum deformation in anchor when subjected to proof test. Proof test load is decided based on the mass of the anchor. (Reference is taken for the relationship of proof test load and mass of the anchor. Solid modeling of Stockless ship anchor model is carried out on NX 11.0 and modal analysis of ship anchor is carried out using ANSYS 16.0. © Content from this work may be used under the terms of the Creative Commons Attribution 3.0 licence.

**Publisher:** IOP Publishing Ltd

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

3) Ganesh, N., Rambabu, S.

**Finite element analysis of porous Ti-6Al-4V alloy structures for biomedical applications**

(2021) *Journal of Physics: Conference Series*, 2070 (1), art. no. 012224, .

**DOI:** 10.1088/1742-6596/2070/1/012224

Department of Mechanical Engineering, Vignan's Institute of Information Technology, Andhra Pradesh, Visakhapatnam, 530049, India

**Abstract**

In this article, design and finite element simulation of porous Ti-6Al-4V alloy structures was presented. Typically, titanium and titanium alloy implants can be manufactured with required pore size and porosity volume by using powder bed fusion techniques due to advancement in additive manufacturing technologies. However, the mismatch of elastic modulus between human cortical bone and the dense Ti-6Al-4V alloy implant resulted in stress shielding which accelerate the implant failure. The porous implant structures help in reduce the mismatch of elastic modulus between the cortical bone and implant structure and also improve the bone ingrowth. Hence, the present work focuses on design of Ti-6Al-4V alloy porous structures with various porosities ranging from 10% to 70% and simulated to determine the elastic modulus suitable for human cortical bone. The sample with 45% porosity is found to be best suited for replacement of cortical bone with elastic modulus of 74Gpa, preventing stress shielding effect and enhanced chances of bone ingrowth. © Content from this work may be used under the terms of the Creative Commons Attribution 3.0 licence.

**Publisher:** IOP Publishing Ltd

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

4) Kumar, P.S.<sup>a</sup>, Rao, G.V.<sup>b</sup>, Rao, E.V.R.<sup>c</sup>, Naidu, C.H.K.<sup>d</sup>

**Runoff volume prediction in the megadrigadda reservoir catchment due to past land use/land cover trends- A case study**

(2021) *Journal of Physics: Conference Series*, 2040 (1), art. no. 012012, .

**DOI:** 10.1088/1742-6596/2040/1/012012

<sup>a</sup> Vignan's Institute of Information Technology, Andhra Pradesh, Visakhapatnam, India

<sup>b</sup> Anurag University, Telangana, Hyderabad, India

<sup>c</sup> Nalla Malla Reddy Engineering College, Telangana, Hyderabad, India

<sup>d</sup> Srinivasa Institute Of Engineering and Technology, Andhra Pradesh, Amalapuram, India

**Abstract**

One major source of water on the Earth is Surface water resources such as Rivers, Rain water sewers, Streams etc. With the rapid change in the mode of usage of land for various purposes like residential, agricultural, industrial, water storage basins, the volume of Surface runoff due to Rain & melting of Snow changes. Estimating such quantities of runoff is essential for proper managing of Water resources over the Earth surface. Runoff estimation of each Mini Water has been done by SCS-CN Curve number method. The required data for this method include Land Use/Land Cover trends of past years, Hydrological Soil Groups, Rainfall trends and AMC Type. Based on the analysis a considerable change in the Groundwater Recharge in the study area is found due to the variations in the Built-up & vegetative cover features ultimately resulting in increasing Surface Runoff there by excess inflow may enter into the Megadrigadda reservoir resulting in Flash floods during monsoons. In the coming years there are chances of the Dam being breached thereby affecting the Visakhapatnam Airport area in its Downstream. © 2021 Institute of Physics Publishing. All rights reserved.

**Publisher:** IOP Publishing Ltd

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

5) Nitish, S.S.S.<sup>a</sup>, De, S.<sup>b</sup>, Ramya, A.V.S.L.<sup>a</sup>, Kumar, G.S.<sup>a</sup>

**Comparative study on soil stabilization using industrial by products and coconut coir**

(2021) *Journal of Physics: Conference Series*, 2040 (1), art. no. 012014, .

**DOI:** 10.1088/1742-6596/2040/1/012014

<sup>a</sup> Department of Civil Engineering, Vignan's Institute of Information Technology, Visakhapatnam, India

<sup>b</sup> Department of Civil Engineering, Aditya College of Engineering, Surampalem, India

#### **Abstract**

Waste disposal has become a serious concern in developing countries like India. The substitution of these waste materials in the form of stabilizing agents in soil stabilization is a modern approach by which waste materials can be advantageously used. In many instances, the soil has proven to be problematic for the construction of various infrastructures like embankments, pavements, foundations, hydraulic barriers, etc. In the present study, a particular type of soil is stabilized to improve the physical properties by using multiple admixtures. In general, additives such as lime, cement, sawdust, stone dust, and other compounds are used for the stabilization of soil over years. This study is conducted to evaluate the viability of using Coconut Coir Fibre (CC) along with stone dust (SD)/pond ash (PA) as a stabilization material. A comparative analysis on the effect of CC with SD as well CC with PA on engineering characteristics of silty soil is presented in the present study. A sequence of laboratory experiments was conducted on silty soil blended with Coconut Coir Fibre along with proportions of Stone Dust/Pond Ash from 0.5% to 1.5% and 30% as constant respectively by mass of dehydrated soil. The experimental outcomes shown a significant change in properties of soil, which conclude that the coconut coir along with stone dust as a very potential additive to improve the characteristics of silty soil compared to that of pond ash. © 2021 Institute of Physics Publishing. All rights reserved.

**Publisher:** IOP Publishing Ltd

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 6) Satyanarayana Murty, P.<sup>a</sup> , Sampath Dakshina Murthy, A.<sup>a</sup> , Omkar Lakshmi, B.<sup>b</sup>

#### **COVID-19 (SARS-COV2) visual digital data fusion using hybrid technique**

(2021) *AIP Conference Proceedings*, 2408, art. no. 030006, .

**DOI:** 10.1063/5.0072673

<sup>a</sup> Department of Electronics and Communication Engineering, Vignan's Institute of Information Technology, Visakhapatnam, Duvvada, India

<sup>b</sup> Department of Electrical and Electronics Engineering, Koneru Lakshmaiah Education Foundation, Vaddeswaram, Guntur, India

#### **Abstract**

A COVID 19 outbreak caused by the new SARSCoV2 virus was declared by the World Health Organization (WHO) in March 2020. Since then, other studies have used Chest Xray or CT scans to identify this infection. Often, one aspect of the study is that these XRAY or CT scans of Covid patients have to be enhanced. The purpose of picture fusion is to merge complimentary, multi-sensor and/or multi-view images. Our major purpose of our work is to assist doctors speed up treatments in order to give their patients the most effective remedies as soon as possible. This study employs two multi-view data sets, which are merged using hybrid methodology and divided into two phases, as input images for our system. In first stage we use two fusion rules of Dual tree Complex Wavelet Transform (DT-CWT) and Discrete Cosine Transform (DCT) separately on both the images. In second stage we use fusion rule based on Singular Value Decomposition (SVD) on those fused images acquired from first stage. The performance of fused image is carried out by standard deviation (SD), root mean square (RMSE), peak signal to noise ratio (PSNR), percentage fit error (PEF), mean absolute error (MAE), mutual information (MI), quality index (QI) and measure of structural similarity (SSIM). © 2021 Author(s).

**Publisher:** American Institute of Physics Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 7) Sariki, R.K.<sup>a</sup> , Kambavalasa, S.K.<sup>b</sup> , Bandari, N.K.<sup>a</sup> , Moinji, R.K.<sup>c</sup>

#### **Design and fabrication of POF Couplers/Splitters for Networking and Displacement Sensing**

(2021) *2021 International Symposium of Asian Control Association on Intelligent Robotics and Industrial Automation, IRIA 2021*, pp. 183-186.

**DOI:** 10.1109/IRIA53009.2021.9588705

<sup>a</sup> Vignan's Institute of Information Technology(A), VSKP, Department of ECE, Andhra Pradesh, India

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<sup>c</sup> Lendi Institute of Engineering and Technology(A), VSKP, Department of ECE, Andhra Pradesh, India

**Abstract**

Plastic Optical Fiber (POF) coupler/ Splitter are important tools of Plastic Optical Networks. Design of fabricating these couplers is significant for the growth of communication system Wide applications including displacement sensors and automobile sensors are taken into consideration. Compared to silica glass fiber and copper cables, POF couplers/ splitters are raising ahead in present technology. The fabrication of 2X2 coupler and 1X2 coupler is done by using heating and gluing. The results of the fabrication have been studied and the values obtained are efficient. © 2021 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 8) Bhargavi, Ch.V.<sup>a</sup> , Mani, G.<sup>a</sup> , Cherukuri, N.<sup>b</sup> , Prasad, C.<sup>b</sup> , Krishna, A.<sup>b</sup> , Basha, C.Z.<sup>b</sup>

**A Novel Framework for Facemask Detection Using R-Convolution Neural Network**

(2021) *Proceedings of the 3rd International Conference on Inventive Research in Computing Applications, ICIRCA 2021*, pp. 958-962.

**DOI:** 10.1109/ICIRCA51532.2021.9544775

<sup>a</sup> Vignan Institute of Information Technology, Department of Cse, AP, Vizag, India

<sup>b</sup> Koneru Lakshmaiah Education Foundation, Department of Cse, AP, Vaddeswaram, 522502, India

**Abstract**

Covid-19 virus has changed the total life style of human beings. This covid-19 started in the country china and spread all over the world. World health organization (WHO) suggested the face masks to be covered which can reduce the spread of corona virus. All countries made it compulsory to wear masks to cut-off the covid spread. Hence detection of wearing masks or not has become an important area to work on for computer vision. Many works are being done on face mask detection, but mostly basis on the classification of mask and no-mask. Here in this paper. a novel approach is proposed which not only classifies mask and no-mask people, but also identifies whether a mask is properly covered or not. Thus in this paper use of R-CNN (Convolution Neural Network) is proposed which results to achieve an accuracy up to 0.93. © 2021 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 9) Vadaboyina, A., Adari, S.R.S., Puli, R., Mungalla, S.S., Manoj, Y.S., Datla, P.V.

**Adaptive Robotic Path Planning Using ML**

(2021) *2021 6th International Conference on Recent Trends on Electronics, Information, Communication and Technology, RTEICT 2021*, pp. 912-917.

**DOI:** 10.1109/RTEICT52294.2021.9573529

Electronics and Computers, Vignan's Institute of Information Technology (A), Visakhapatnam, India

**Abstract**

Currently, the trail arranging issue is one among the preeminent investigated points in self-governing mechanical technology. That is the reason tracking down a safe way during a jumbled climate for a portable robot is a pivotal necessity for the achievement of any such versatile robot project. In this work, a created calculation upheld free sections and a defining moment technique for tackling the issue of robot way arranging during a static climate is introduced. The point of the defining moment approach is to scan a protected way for the portable robot, to make the robot move from a beginning situation to an objective situation without hitting snags. This proposed calculation handles two unique goals which are the path wellbeing and accordingly the way length. Also, a solid control law which is named sliding mode control is proposed to

direct the adjustment of a self-governing portable robot to follow an ideal direction. At last, reproduction results show that the created approach might be a decent choice to get the satisfactory way and exhibit the productivity of the proposed control law for vigorous following of the portable robot. © 2021 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

10) Chekka, A.B.<sup>a</sup>, Aggala, N.J.<sup>b</sup>

**High frequency Chirp signal generator using multi DDS approach on FPGA**

(2021) *Proceedings of the 5th International Conference on Trends in Electronics and Informatics, ICOEI 2021*, art. no. 9453012, pp. 137-142.

**DOI:** 10.1109/ICOEI51242.2021.9453012

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**Abstract**

The range resolution and target detection capability in Radar Pulse compression techniques can be improved efficiently by a Linear frequency modulated (LFM) waveform or a chirp signal. As the conventional method of generating Linear frequency modulated waveform causes several limitations like instability and nonlinearity, this paper has proposed a digital technique to generate LFM signal by using a multi-DDS approach. For hardware implementations of any digitally designed module, the Joint Test Action Group (JTAG) plays a vital role in real-time processing. The JTAG standards in Field Programmable gate arrays (FPGA) are allowed to debug any design with the help of Hardware Co-Simulation JTAG block. In this paper, a linear frequency modulated waveform is generated using a Direct Digital Synthesizer (DDS) and System generator Xilinx block set. The Generated chirp signal is further implemented on FPGA-ZYNQ board (ZC7045-2ffg900), by generating a Hardware Co-simulation JTAG block, essentially required for radar signal processing. © 2021 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

11) Krishnaraj, N.<sup>a</sup>, Elhoseny, M.<sup>b</sup>, Lydia, E.L.<sup>c</sup>, Shankar, K.<sup>d</sup>, ALDabbas, O.<sup>e</sup>

**An efficient radix trie-based semantic visual indexing model for large-scale image retrieval in cloud environment**

(2021) *Software - Practice and Experience*, 51 (3), pp. 489-502.

**DOI:** 10.1002/spe.2834

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<sup>e</sup> Department of Computer Engineering, Faculty of Engineering, Al Balqa' Applied University, Salt, Jordan

**Abstract**

In recent years, massive growth in the number of images on the web has raised the requirement of developing an effective indexing model to search digital images from a large-scale database. Though cloud service offers effective indexing of compressed images, it remains a major issue due to the semantic gap between the user query and diverse semantics of large-scale database. This article presents a radix trie indexing (RTI) model based on semantic visual indexing for retrieving the images from cloud platforms. Initially, an interactive optimization model is applied to identify the joint semantic and visual descriptor space. Next, an RTI model is applied to integrate the semantic visual joint space model for finding an effective solution for searching large-scale sized dataset. Finally, a Spark distributed model is applied for deploying the online image retrieval service. The performance of the proposed method is validated on two standard dataset, namely, Holidays 1 M and Oxford 5 K in terms of mean average precision (mAP) and processing time under varying dataset sizes. During experimentation, the presented RTI model shows the maximum mAP value of 0.83 under the dataset size of 1000. Similarly, under the sample count of 1000, it is noted that the standalone server requires a maximum of 118 minutes to complete the



process, whereas the spark cluster requires a minimum of around only 19 minutes to finish the process. The experimental outcome showed improvement in terms of various measures over the best rivals in the literature. © 2020 John Wiley & Sons, Ltd.

**Publisher:** John Wiley and Sons Ltd

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

12) Dash, S., Sarojini, L.

**Analysis and charge control of lithium ion battery with application for off-grid PV system**

(2021) *Journal of Physics: Conference Series*, 1714 (1), art. no. 012001, .

**DOI:** 10.1088/1742-6596/1714/1/012001

Vignan Institute of Information Technology, Visakhapatnam, Andhra Pradesh, India

**Abstract**

For the implementation of the PV micro grid, initially we designed the PV module. Once the PV module is designed we then decided to use P&O technique as an MPPT technique. The output pulse of the MPPT technique is then fed to the boost converter as gate pulse. The output of PV with dc to dc converter is then fed to DC grid from where the 3-phase Inverter with LC filter which converts the DC to 3-phase AC system and then is fed to load. Also the battery system with bidirectional controller is followed by a charge controller is also connected to DC micro grid so that the battery can charge or discharge as per the application. © 2021 Institute of Physics Publishing. All rights reserved.

**Publisher:** IOP Publishing Ltd

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

13) Roy, S.<sup>a</sup>, Ghosh, S.<sup>b</sup>, Saha, P.B.<sup>c</sup>, Singh, M.S.<sup>b</sup>, Sarkhel, A.<sup>b</sup>, Pattanayak, S.<sup>d</sup>

**Design and Analysis of Low Cost Biodegradable Substrate Material for Microwave device Application**

(2021) *2021 IEEE Indian Conference on Antennas and Propagation, InCAP 2021*, pp. 614-617.

**DOI:** 10.1109/InCAP52216.2021.9726363

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<sup>c</sup> National Institute of Technology Agartala, Electronics and Communication Engg., Agartala, India

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**Abstract**

In this article, a low-cost biodegradable substrate is designed for antenna and other microwave applications. The substrate is designed by using dry paddy, polyester resin, methyl ethyl ketone peroxide (MEKP), and cobalt. A detail procedure for designing the substrate is discussed in details and the properties of the substrate are measured by using dielectric assessment kit and vector network analyzer. The value of the dielectric constant, loss factor, loss tangent, and conductivity obtained from the measurement are 2.43, 0.29, 0.16, and 0.12 S/m respectively. Based on substrate parameter and height an antenna is designed further for upcoming 5G application band. To improve the performance of the antenna in particular frequency band, a detailed slot analysis is carried out. The antenna covers bandwidth of about 580 MHz centered at 3.4 GHz with basic design and bandwidth of about 740 MHz centered at 3.68 GHz when four slots are introduced in the patch. The substrate also used for frequency selective absorber application in which the designed absorber shows 23.64% absorption bandwidth with high angular stability. © 2021 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 14) Pasumarthi, S.<sup>a</sup>, Naik, K.S.<sup>a</sup>, Muthusamy, P.<sup>b</sup>

**Flower MIMO antenna for WLAN applications with DGS isolation**

(2021) *2021 IEEE Indian Conference on Antennas and Propagation, InCAP 2021*, pp. 255-258.

**DOI:** 10.1109/InCAP52216.2021.9726180

<sup>a</sup> Vignan's Institute of Information Technology (A), Electronics and Communication Engineering, Visakhapatnam, India

<sup>b</sup> Deemed to Be University, Electronics and Communication Engineering, Vignan's Foundation for Science, Technology and Research Institute, Guntur, India

**Abstract**

This article describes a simple four-element flower MIMO antenna for WLAN applications. The suggested MIMO antenna is placed orthogonally and fed by a V-shaped feed line. The target antenna operates at a frequency of 5.2GHz, which is its maximum operational frequency. The overall dimensions of the antenna are 50×50×1.6mm<sup>2</sup>. The MIMO antenna has a bandwidth of 200MHz, which is sufficient for most applications. The research was carried out initially with a single monopole antenna, then with four element MIMO without isolation, and lastly with four element MIMO with isolation to get the improved isolation result. A sequence of overlapping circles vertically and horizontally on the ground serves as an isolator between the two radiating components. As a result, mutual coupling is diminished, and isolation is increased to less than -10dB when the frequency is tuned to the required range. When compared with and without isolation structures, it is found that with isolation structures the isolation is improved. The S-parameters, radiation patterns, ECC and DG, as well as the gain of the proposed antenna, are all discussed. The results of the simulations show that the suggested MIMO antenna system is well suited for use in wireless local area networks. © 2021 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 15) Saha, P.B.<sup>a</sup>, Ghoshal, D.<sup>a</sup>, Roy, S.<sup>b</sup>, Kumar Dash, R.<sup>a</sup>

**Compact-Size Wearable Button Antenna with Low SAR for IOT, Medical and GPS Applications**

(2021) *2021 IEEE Indian Conference on Antennas and Propagation, InCAP 2021*, pp. 395-398.

**DOI:** 10.1109/InCAP52216.2021.9726411

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<sup>b</sup> Vignan's Institute of Information Technology, Department of ECE, Visakhapatnam, India

**Abstract**

A compact size wearable button antenna has been designed and presented in this paper. The designed antenna covers widely used 2.4 GHz ISM band for internet of things (IOT) and medical applications. It can also be used for IRNSS-1, S-band (2484 MHz to 2500 MHz) GPS tracking application. The wearable antenna button is designed on a circular piece of low cost FR-4 epoxy substrate with radius 10 mm only. The operating frequency range of the antenna is 2.37 GHz to 2.6 GHz with 230 MHz bandwidth and 2.6 dB peak gain at 2.4 GHz. The usability of the antenna has been examined by on-cloth and on-body performance analyses. The average specific absorption rate (SAR) of the antenna with human body interaction is around 0.1 W/Kg satisfying the guideline of FCC. © 2021 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 16) Saha, P.B.<sup>a</sup>, Ghoshal, D.<sup>a</sup>, Roy, S.<sup>b</sup>, Dash, R.K.<sup>a</sup>

**Frequency Reconfigurable Two-element MIMO Antenna for 3G/4G/5G Cellular Communications**

(2021) *2021 IEEE Indian Conference on Antennas and Propagation, InCAP 2021*, pp. 965-968.

**DOI:** 10.1109/InCAP52216.2021.9726377

<sup>a</sup> National Institute of Technology Agartala, Department of ECE, Agartala, India

<sup>b</sup> Vignan's Institute of Information Technology, Department of ECE, Visakhapatnam, India

### Abstract

A frequency reconfigurable two-element multiple input multiple output (MIMO) antenna with inverted-E shaped unit radiator is designed and presented in this communication. The proposed MIMO Antenna can be electrically reconfigured in two distinct operating modes. In the first mode, it operates at all the 3G (1800 MHz, 2100 MHz), 4G (2300 MHz) and mid-band 5G (3500 MHz) bands of cellular communication whereas in second mode, it operates at 3500 MHz mid-band 5G only. The unit radiator of the MIMO is an inverted-E shaped monopole resonator which achieves its resonant modes by varying the feed position. The isolation of the MIMO has been enhanced from 4 dB to 22 dB using a square split ring resonator (SRR) at the ground plane. The MIMO offers above 300 MHz bandwidth and more than 12 dB gain throughout the operating bands. The performance of the MIMO in diversity environment has been examined using all the standard MIMO parameters like envelope correlation co-efficient (ECC < 0.06), diversity gain (DG > 0.98), total active reflection co-efficient (TARC < -20dB), mean effective gain (MG < 0.5dB) and channel capacity loss (CCL < 0.1 bits/sec/Hz). © 2021 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

17) Singh, M.S.<sup>a</sup>, Roy, S.<sup>b</sup>, Ghosh, S.<sup>a</sup>, Sarkhel, A.<sup>a</sup>

### Wearable textile based MIMO antenna for 5G Application

(2021) *2021 IEEE Indian Conference on Antennas and Propagation, InCAP 2021*, pp. 159-162.

**DOI:** 10.1109/InCAP52216.2021.9726301

<sup>a</sup> National Institute of Technology Meghalaya, Electronics and Communication Engg., Shillong, India

<sup>b</sup> Vignan's Institute of Information Technology, Electronics and Communication Engg., Visakhapatnam, India

### Abstract

A compact dual element MIMO antenna based on jeans material for wearable application is proposed in this communication. The proposed antenna is designed to cover upcoming 5G application band. A modified T-shaped open ended slot is implemented on the partial ground plane to optimize the isolation between the elements. The antenna exhibits an overall size of  $0.537 \lambda_0 \times 0.326 \lambda_0 \times 0.016 \lambda_0$  covering the frequency range from 3.02 GHz to 4.5 GHz. The antenna maintains an isolation of  $\sim 21$  dB over the desired frequency range. The antenna shows low envelope correlation co-efficient (ECC < 0.01) with high diversity gain (DG >> 9.9) at the entire range. The antenna analysis is performing in human phantom for validating the wearable application scenario. Moreover, safety regulation is analyzed through the specific absorption rate. © 2021 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

18) Chintam, A.<sup>a</sup>, Rajendra, G.K.<sup>a</sup>, Anitha, R.J.<sup>a</sup>, Yalamati, S.<sup>b</sup>, Chandra, M.D.<sup>c</sup>

### Deep Neural Network-Based Classification and Diagnosis of Idiopathic Parkinsonism Disease

(2021) *2021 International Conference on Computational Intelligence and Computing Applications, ICCICA 2021*, .

**DOI:** 10.1109/ICCICA52458.2021.9697322

<sup>a</sup> Computer Science and Engineering, Vignan's Institute of Information Technology (A), Andhrapradesh, Vishakapatanam, India

<sup>b</sup> Computer Science and Engineering, Nadimpalli Satyanarayana Raju Institute of Technology (A), Andhrapradesh, Vishakapatanam, India

<sup>c</sup> Computer Science and Engineering, Raghu Engineering College, Vishakapatanam, India

### Abstract

Present days deep neural networks play a crucial role in the prediction and classification of diseases. Without a doubt, DNN has a promising future in the medical area, particularly in clinical imaging. The fame of profound learning approaches is a result of their capacity to deal with a lot of information identified with the patients with reliability, accuracy in a limited ability to focus time. Nonetheless, the specialists might set aside time in breaking down and produce reports. In this work, have

proposed a Deep Neural Network-based Parkinson's disease classification (DPDC). Our proposed technique is one such genuine model giving quicker and more precise outcomes for the characterization of Parkinson's sickness patients with magnificent accuracy of 94.87%. Because of the traits of the dataset of the patient, the model can be utilized for the recognizable proof of Parkinsonism's. © 2021 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 19) Sravani, A.<sup>a</sup>, Anusha, C.<sup>b</sup>, Shankar, N.V.S.<sup>c</sup>

**A Comparative Analysis of Machine Learning Algorithms in Stock Prediction**

(2021) *Proceedings of the International Conference on Industrial Engineering and Operations Management*, pp. 2619-2623.

<sup>a</sup> Computer Science and Engineering, GITAM Institute of technology, Andhra Pradesh, Visakhapatnam, India

<sup>b</sup> Computer Science and Engineering, Vignan's Institute of Information technology(A), Andhra Pradesh, Visakhapatnam, India

<sup>c</sup> Mechanical Engineering, Vignan's Institute of Information technology(A), Andhra Pradesh, Visakhapatnam, India

**Abstract**

In order to earn more money in less time in this pandemic period, the ultimate option is to invest some amount in the stock market. If we invest more then we will have more profit whenever we invest in a good company. In Stock exchange, the goal is to understand the future worth of the economic stock. The recent trend in stock market prediction innovations is making use of machine learning that makes forecasts based up on the worth's of present stock exchange indices by training on their previous values. Our work analyzes machine learning algorithms and also say the best algorithms for predicting stock values. Also comparing results of four algorithms namely Linear Regression, LSTM, k -nearest neighbors, fb-prophet algorithms. Factors considered are open, close, high, date and last. Furthermore, the proposed work examines the use of the prediction system in real-world settings and also problems related to the precision of the overall worth are given, also provides a machine-learning model to forecast the long life of stock in a open market. The effective forecast of the stock will certainly be a excellent possession for stock exchange organizations as well as will certainly provide real-life solutions stock capitalists encounter. © IEOM Society International.

**Publisher:** IEOM Society

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 20) Anusha, C.<sup>a</sup>, Sravani, A.<sup>b</sup>, Praveen, M.A.<sup>a</sup>

**Diabetes Diagnosis and Classification Using Feed Forward Neural Network Algorithm**

(2021) *Proceedings of the International Conference on Industrial Engineering and Operations Management*, pp. 2590-2596.

<sup>a</sup> Computer Science and Engineering, Vignan's Institute of Information technology(A), Andhra Pradesh, Visakhapatnam, India

<sup>b</sup> Computer Science and Engineering, GITAM Institute of technology (Deemed to be University), Andhra Pradesh, Visakhapatnam, India

**Abstract**

Diabetes mellitus (DM) is a persistent sickness that may cause numerous difficulties. Machine learning methods are used to analyze and classification of diabetes. The learning-based calculations play an important role in supporting dynamic in infection conclusion and expectation. In this work, conventional categorization algorithms and artificial neural networks are researched for the diabetes dataset. Likewise, different execution strategies with various angles are assessed for the Naive Bayes, K-nearest neighbour, decision trees, Extremely Randomized tree, radial basis function and multi-layer perceptron (MLP) algorithms. It upholds the patient's assessment that conceivably experiences the ill effects of diabetes later on. This paper gave that the feed-forward neural network algorithm multi-layer perceptron algorithm gives the most noteworthy expectation precision with the least Mean square error rate of 0.15. The multi-layer perceptron (MLP) gives the most reduced bogus negative rate and bogus positive rate with the most elevated region under the curve of 0.88. © IEOM Society International.

**Publisher:** IEOM Society

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 21) Shankar, N.V.S.<sup>a</sup>, Kamma, T.<sup>a</sup>, Krishna, B.M.<sup>b</sup>, Kumar, C.H.<sup>b</sup>, Shalem, B.<sup>c</sup>

**Smart Actuators: A Review**

(2021) *Proceedings of the International Conference on Industrial Engineering and Operations Management*, pp. 2226-2238.

<sup>a</sup> Department of Mechanical Engineering, Vignan's Institute of Information Technology, AP, Visakhapatnam, 530046, India

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<sup>c</sup> Department of Mechanical Engineering, DNR College of Engineering and Technology, AP, Bhimavaram, 534202, India

**Abstract**

Robotic systems are a combination of actuators and control systems for manipulating a tool or end effector along a specified path. Different types of actuators exist for different applications like bio mimicking, rehabilitation and prosthesis, and are classified based on their principle of actuation. These actuators include Serial Elastic Actuators, Shape Memory Alloys (SMA), Dielectric Elastomer Actuator (DEA), fluidic actuation etc. Various robotic systems have been developed with different actuators. SEA are conventional electric actuators are coupled with flexible elements. The main purpose is the introduction of compliance. Smart materials like SMA, Soft actuators like DEA and Flexible Elastomer Actuators using Fluidic actuation principles, pertaining to their actuation principles, can be used for biomimicking applications and their compliance nature due to their flexibility results in better shock absorbing and energy recovery capabilities. This paper presents a comprehensive literature survey relating to various actuators and their applications. A brief review of use of EMG and EEG as control systems is also presented in this article. Mathematical formulations have also been summarized in this article. © IEOM Society International.

**Publisher:** IEOM Society

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 22) Rao, E.J.<sup>a</sup>, Krishna, K.M.<sup>b</sup>, Katta, M.<sup>c</sup>, Busa, K.<sup>d</sup>

**Efficient Design of Multiplier using EGDI Technique**

(2021) *IEEE 2nd International Conference on Applied Electromagnetics, Signal Processing, and Communication, AESPC 2021 - Proceedings*, .

**DOI:** 10.1109/AESPC52704.2021.9708531

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<sup>b</sup> Vignan's Institute of Information Technology (VIIT), Department of Electronics and Communication Engineering, A.P., India

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<sup>d</sup> Aditya College of Engineering, Department of Electronics and Communication Engineering, A.P., India

**Abstract**

The current tendency is to look at the possibility of using high-speed, low-power arithmetic components for Video, Image, and Voice processing. Vedic Multiplier (VM) can increase the speed of operation three times compared to conventional Wallace Multiplier. The Architecture of Enhanced Gate diffusion Input (EGDI) is more amenable to Vedic Multiplier than the standard Architecture and a power-saving architecture based on Gate Diffusion Input (GDI). This paper has presented various VM-based arithmetic elements utilizing EGDI, GDI, and CMOS through 130 nm CMOS standard Library of Mentor Graphics. The results have been compared with conventional CMOS, GDI and fixed to be a very encouraging process VM-EGDI as a formidable contribution. Finally, design an FIR using VM-EGDI reduces the 18%-37%, 50%-75% of power and delay compared to FIR using VM-GDI and VM-CMOS. © 2021 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 23) Cherukuri, N.<sup>a</sup>, Kumar, G.R.<sup>b</sup>, Gandhi, O.<sup>c</sup>, Krishna Thotakura, V.S.<sup>d</sup>, Nagamani, D.<sup>e</sup>, Basha, C.Z.<sup>f</sup>

**Automated Classification of rice leaf disease using Deep Learning Approach**

(2021) *Proceedings of the 5th International Conference on Electronics, Communication and Aerospace Technology, ICECA 2021*, pp. 1206-1210.

**DOI:** 10.1109/ICECA52323.2021.9676081

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<sup>f</sup> Koneru Lakshmaiah Educational Foundation, Department of CSE, Vaddeswaram, India

**Abstract**

Day by Day, the population keeps on increasing across the world. In the upcoming years providing food for people around the globe is the major challenge. Among all crops, Rice is the important crop for providing food for more than half of the population around the world. The major challenge in the cultivation of Rice crops is identifying the diseases early. But recognizing illness with the naked eye is sometimes tricky as a result of the productivity affecting. This study focuses on the early detection of Rice leaf disease to improve the overall productivity by more than 20 percent. This paper proposed a Convolution Neural Network (CNN) and deep learning approach to detect and classify diseases like Stem borer, Sheath Blight Rot Brown Spot, False Smut. The major challenge in identifying the leaf disease is that the condition may affect any leaf with different sizes. So a dataset of 1045 images was gathered to train the KNN model. Initially, KNN classifies the leaf with disease and without the disease. In the second phase, the Classification of the Disease will take place by using CNN. Using this approach, we got 95% accuracy for finding healthy leaf and 90% accuracy (highest among all diseases) for Sheath Blight. © 2021 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 24) Gogineni, B.<sup>a</sup>, Kumar, V.V.<sup>b</sup>, Rao, G.R.K.<sup>c</sup>, Nalajala, S.<sup>b</sup>, Deepthi, M.N.V.G.A.<sup>d</sup>, Prasad, C.<sup>b</sup>

**FLEXCRYPT: Kernel Support for Heterogeneous Full Drive Encryption**

(2021) *Proceedings of the 5th International Conference on Electronics, Communication and Aerospace Technology, ICECA 2021*, pp. 732-739.

**DOI:** 10.1109/ICECA52323.2021.9676063

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<sup>d</sup> Aditya Degree College, Department of Computers, AP, Tuni, 533401, India

**Abstract**

FLEXCRYPT, a storage system that provides block level kernel support for heterogeneous Full Drive Encryption (FDE) is introduced in this study. Recent work on Full Drive Encryption shows that stream ciphers achieve significantly improved performance while offering stronger storage security guarantees. However, optimizing for performance conflicts with concerns like battery life. FLEXCRYPT takes advantage of the vast configuration space of stream ciphers to balance these concerns with cipher switching. The key insight in achieving low-overhead switching is to leverage the append-mostly behavior of underlying solid-state storage to dynamically optimize for performance, increased battery life, or powerful security properties. FLEXCRYPT is implemented on an ARM big.LITTLE mobile processor and test its performance under the popular F2FS file system. This evaluation shows FLEXCRYPT cipher switching enables secure, flexible, high performance heterogeneous FDE with reasonable overhead costs. © 2021 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final  
**Source:** Scopus

25) Ajay, T.<sup>a</sup>, Reddy, K.N.<sup>b</sup>, Reddy, D.A.<sup>c</sup>, Kumar, P.S.<sup>d</sup>, Saikumar, K.<sup>e</sup>

**Analysis on SAR Signal Processing for High-Performance Flexible System Design using Signal Processing**  
(2021) *Proceedings of the 5th International Conference on Electronics, Communication and Aerospace Technology, ICECA 2021*, pp. 30-34.

**DOI:** 10.1109/ICECA52323.2021.9676135

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<sup>e</sup> Dept. of ECE, Malla Reddy University, Hyderabad (MRUH), Telangana, India

#### **Abstract**

The main aim of SAR signal processing and radar network is to handle the subsystem presentation and structure style, which significantly influences the execution of high presentation system design. For that reason, it has become a major problem to recognize the superior adaptive inclusive, flexible SAR signal for handling the system with new TI-multi center DSPTMS320c6678 depended on VPX 3U standards. The current paper projects the design plan and execution of an elite continuous SAR signal preparing system. It illustrates the solid ability to measure, solidity, quick remaking and great versatility for a range of imaging calculations. The adaptability and elite could be satisfactorily illustrated by the fruitful implementation of the multi-mode, multi-polarization, multi-goals space-borne and airborne constant SAR imaging frameworks. In comparison, our test result reveals that a SAR RD measurement requires 21.58s for a 4.2GB (16K and 32K complicated focuses) image with 0.2m\*0.2m targets, achieving continuous execution. © 2021 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

26) Yelamati, S.<sup>a</sup>, Kiran, D.R.<sup>b</sup>, Sasank, V.V.S.<sup>b</sup>, Prasad, C.<sup>b</sup>

**Simulating Nash Equilibrium Market Outcomes with Bayesian Analysis of Choice-Based Conjoint Data**  
(2021) *Proceedings of the 5th International Conference on Electronics, Communication and Aerospace Technology, ICECA 2021*, pp. 1436-1441.

**DOI:** 10.1109/ICECA52323.2021.9675883

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<sup>b</sup> Koneru Lakshmaiah Education Foundation, Department of CSE, AP, Visakhapatnam, 522502, India

#### **Abstract**

The implemented model constrains the beta coefficients for price and budget. Both are restricted to positive values only, which makes the model much more realistic. Usually one would assume the price coefficients to be negative only, however in the BLP-type specification there is a reward for not using up the entire budget. Hence, {beta -{price}} must be positive (Pachali et al. 2017b). In some cases, it makes sense to additionally impose ordinal constraints on the betas among brands. This would be beneficial if there were a clear and strict preference for individual specifications of the products in question (i.e. a higher quality ceteris paribus is always more desirable). For this particular beer data set, this cannot reasonably be justified, since there is no objective order of beers. The research question whether a merger between Heineken and Amstel would yield an incremental profit beyond the sum of the individual profits can now be answered by changing the ownership matrix so that those three beers belong to the same owner and thus not price compete anymore. This market is now a duopoly with two players (Heineken together with Amstel vs. Estrella) and referred to as the merge competition scenario. Table 1 displays the weighted average price and the producer surplus before and after the merger and quantifies the absolute and relative difference between those two scenarios. While {bar p} increases by 3.3%, the producer surplus even increased. © 2021 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 27) Krishna, K.M.<sup>a</sup>, Borole, Y.D.<sup>b</sup>, Sharma, S.<sup>c</sup>, Singh, S.P.<sup>d</sup>, Santhosh Kumar, R.<sup>e</sup>, Shrivastava, A.<sup>f</sup>

**Smart Robotic System for Remote Health Monitoring of the Environment Using IoT and Global Positioning System** (2021) *Proceedings of International Conference on Technological Advancements and Innovations, ICTAI 2021*, pp. 460-465.

**DOI:** 10.1109/ICTAI53825.2021.9673276

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#### Abstract

The capacity to gather explicit environmental emissions has grown in urban cultures as a result of creative advances. The purpose of this article is to develop a Cloud-based Smart Device Environment Monitoring platform (CEMSD). Such factors like air quality and temperature may be tracked with this device. PPD42NS is a particle problem sensor for wood dust that is utilized in conjunction with Raspberry Pi 3, Model B DHT11 temperature sensor, MQ131-Ozone (3O3) and PPD42NS particulate issue (PM) sensors to produce CEMSD. Using remote/cell relationships, CEMSD's job is to collect data and transmit it to the cloud. With the assistance of a PC or a smart device, the data will be gathered, monitored, and made available here. Raspberry Pi, Internet of Things (IoT), Python ARM, and GPS are all examples of IoT. © 2021 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 28) Vivek, K.<sup>a</sup>, Kale, M.R.<sup>b</sup>, Thotakura, V.S.K.<sup>c</sup>, Sushma, K.<sup>d</sup>

**An Efficient Triple-Layered and Double Secured Cryptography Technique in Wireless Sensor Networks** (2021) *2021 IEEE International Conference on Distributed Computing, VLSI, Electrical Circuits and Robotics, DISCOVER 2021 - Proceedings*, pp. 117-122.

**DOI:** 10.1109/DISCOVER52564.2021.9663674

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#### Abstract

When implemented in a complex environment, wireless network security is the main factor, and it is the sensor networks' primary concern. Cryptology is a vital component in wireless sensor networks to accomplish this. Many existing cryptographic techniques had not shown good and better results till now. An efficient, strong, triple phased, double secured, and integrated cryptographic approach has been introduced in this study that utilizes both secret-key and public-key methods. Rijndael Encryption Approach (REA), Horst Feistel's Encryption Approach (HFEA), and enhanced Rivest-Shamir-Adleman (e-RSA) are employed in the propounded technique in various stages of the algorithm since secret-key based system offers a significant level of protection and enable key management through publickey based techniques. REA was used in stage 1 of the algorithm; REA+HFEA was used in stage 2, and REA+HFEA+e-RSA was used in the last stage, and all three stages were performed in parallel. Parameters like execution time and decryption time were taken into account for measuring the performance levels of the propounded approach. The propounded algorithm is differentiated from existing techniques using a single evaluation parameter i.e computation time. It is found that propounded approach gave a good performance in terms of computation time with an Average Encryption Time (AET) and Average Decryption Time (ADT) of



1.12 and 1.26 on text sizes of 6, 25, 35, 61, and 184 MegaBytes (MB) respectively. The proposed hybrid model is 1.36 times faster than ECC+RSA+MD-5, 3.25 times faster than AES+ECC, 2.7 times faster than AES+RSA, and 3.24 times faster than AES+ECC+RSA+MD5. © 2021 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 29) Nemani, R.<sup>a</sup>, Cherukuri, N.<sup>b</sup>, Rao, G.R.K.<sup>c</sup>, Srinivas, P.V.V.S.<sup>c</sup>, Pujari, J.J.<sup>d</sup>, Prasad, C.<sup>e</sup>

**Algorithms and Optimization Techniques for Solving TSP**

(2021) *Proceedings of the 5th International Conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud), I-SMAC 2021*, pp. 809-814.

**DOI:** 10.1109/I-SMAC52330.2021.9640907

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**Abstract**

The traveling salesman problem (TSP) is one of the most extensively studied optimization problems in the computer science and computational mathematics field given that there is yet an optimal solution for it to be discovered. This algorithmic issue requests the shortest possible route that visits each city precisely once and returns to its initial starting point if a list of  $n$  places and the distances between each pair are given. This paper conducts a comparative study to test and evaluate the performance of three algorithms: Simulated Annealing, Ant Colony Optimization, and Genetic Algorithm. With the traveling salesman problem classifying under NP-hard computational complexity, the proposed research work will examine the runtime as well as the shortest distance computed by each of these algorithms by setting up analogous environments of  $n$  cities. © 2021 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 30) Ramakristanaiah, C.<sup>a</sup>, Namratha, P.<sup>b</sup>, Ganiya, R.K.<sup>c</sup>, Reddy, M.R.<sup>d</sup>

**A Survey on Humor Detection Methods in Communications**

(2021) *Proceedings of the 5th International Conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud), I-SMAC 2021*, pp. 668-674.

**DOI:** 10.1109/I-SMAC52330.2021.9640751

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**Abstract**

Humor is a part of most of the communications these days. Modeling the humor present in verbal communication is trending recently. Assessing the degree of the humor present in text is a challenging task. Most of the existing studies on humor detection depended on binary classification with respect to the linguistic features. Deep Learning is the best alternative and most prominent technology that is most widely being used in humor detection in verbal communications. Humor Detection needs efficient models and patterns which are not available for all the cases. The researchers in this area are mushrooming day by day. As an effort to boost research and ignite new ideas in this challenging area, this paper explores how deep learning is being used in humor detection. Also reviews various humor detection methodologies which are based on deep learning. This paper presents the critical analysis of the humor detection methodologies and future directions. © 2021 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 31) Mani, G.<sup>a</sup>, Srinivas, P.V.V.S.<sup>b</sup>, Rao, G.R.K.<sup>b</sup>, Prasad, C.<sup>c</sup>, Priyanka, D.<sup>d</sup>, Cherukuri, N.<sup>d</sup>

**Traffic Analysis of High Throughput Traffic on Tor**

(2021) *Proceedings of the 5th International Conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud), I-SMAC 2021*, pp. 844-849.

**DOI:** 10.1109/I-SMAC52330.2021.9640934

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**Abstract**

Tor is a popular anonymity network used by millions to access internet services while maintaining their privacy. The main concept behind Tor is that a user can build a "circuit" of routers called relays, where each relay carries the client's traffic to the next relay, without any single relay knowing the full extent of the path. Thus, anonymity is achieved, because no single relay can trace the client to the destination. However, a paper written in 2005 titled "Low-Cost Traffic Analysis of Tor" by Steven J. Murdoch and George Danezis is demonstrated that a traffic analysis attack was possible against the Tor network. Any attacker could monitor the load on a relay in the Tor network by calculating the round trip time (RTT) to the relay, and when the RTT spiked, it was clear that the relay was being used. With this information, attackers could trace the path of a client in the Tor network and de-anonymize them. This paper was written in 2005, when Tor was still young. At the time of Murdoch and Danezis' paper, the entire Tor network consisted of just fifty relays. As of the time of writing, there were well over 7,000 relays in the network, so the ecosystem of Tor is radically different. With all of the increased traffic, it is highly required to determine if this type of attack was still valid, and would not be masked by other traffic. Our results indicate that if a victim is downloading or streaming a large file as fast as Tor will allow them to, a decrease in bandwidth and an increase in round trip time (RTT) is usually observable on each relay in the circuit. This research work has also discovered the Tor guard relays, a special subset of relays that clients will pick as the first hop in their circuit are very susceptible to this kind of attack. © 2021 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 32) Panda, P.K.<sup>a</sup>, Sahu, H.K.<sup>b</sup>, Muduli, A.<sup>c</sup>

**Capacitor Based Metamaterial Absorber for Obtaining Wideband Absorptivity**

(2021) *2021 International Conference in Advances in Power, Signal, and Information Technology, APSIT 2021*, .

**DOI:** 10.1109/APSIT52773.2021.9641156

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<sup>c</sup> K. L. University, Dept. of Electronics and Comm. Engg., Andhra Pradesh, Guntur, 522502, India

**Abstract**

This work proposes the establishment of capacitive effect to a square shaped SRR to obtain ultra wideband absorptivity. The proposed metamaterial absorber is working in complete X-band (8-12GHz) frequency. Initially the structure was designed by a square shaped ring resonator placed inside another ring with open slot. The dual band absorbance at 9.4 GHz and 13.4 GHz with absorptivity 99.88% and 97.26% respectively is achieved in the initial design. Then, to accomplish wideband absorbance, a lumped component (Capacitance) is introduced, where it capped the complete X-band of absorption above 90%. The FWHM bandwidth of the wideband metamaterial absorber is found to be 6.4 GHz. The suggested absorber shows a good absorptivity for both TE and TM modes. © 2021 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 33) Rambabu, S.<sup>a</sup>, Thirupathi Rao, N.<sup>b</sup>, Ramakotaiah, M.<sup>c</sup>, Simhadri Raju, J.<sup>d</sup>, Venumurali, J.<sup>e</sup>

**Security Vulnerabilities Affecting on Additive Manufacturing Systems in the Era of Industry 4.0: An Extensive Review**

(2021) *2021 IEEE International Conference on Emerging Trends in Industry 4.0, ETI 4.0 2021*, .

**DOI:** 10.1109/ETI4.051663.2021.9619291

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<sup>e</sup> Sri Venkateswara University College of Engineering, Department of Mechanical Engineering, Tirupati, India

**Abstract**

The Industry 4.0 concept refers to the integration of the smart manufacturing systems with the developed information technologies such as machine learning, internet of things (IoT), big data, augmented reality, additive manufacturing/3D printing, and cyber security technologies. This paper presents the potential vulnerabilities and their affects on the additive manufacturing systems at various stages including design phase, manufacturing phase, post-processing and testing phase. It was found that the malicious modification of 3D CAD file, .STL file, toolpath or G-code file affects on the quality and functional performance of the additive manufactured parts by means of introducing the internal voids, modify the external surface geometry, or alter the printer firmware to change the laser power intensity, scanning strategy, and layer thickness. Furthermore, the side-channel leakage of information from the vibration, acoustic, thermal, magnetic and power emissions data could be used to reconstruct the original product design and manufacturing conditions. Finally, the paper concludes the importance of cybersecurity of additive manufacturing systems in order to achieve the desired quality and productivity. © 2021 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 34) Ravi Kumar, S., Sunil Kumar, K., Babu, J., Jagadeesh Chandra, S.V.

**Temperature Independent on Plastic Optical Fiber Evanescent Wave Sensor**

(2021) *2021 4th International Conference on Electrical, Computer and Communication Technologies, ICECCT 2021*, .

**DOI:** 10.1109/ICECCT52121.2021.9616666

Vignan's Institute of Information Technology, Department of ECE, Andhra Pradesh, Visakhapatnam, 530046, India

**Abstract**

We have developed a fiber optic evanescent wave sensor which is capable of monitoring the concentration of liquids by eliminating the changes in the temperature of the surrounding medium. This evanescent technique is based on the evanescent field interactions between the propagating light and the analyte under consideration. A step index polymer optical fiber is manually side polished such that the cladding gets exposed to the solution. Samples of different concentrations of D-Glucose anhydrous (Dextrose anhydrous) procured from Nice Chemicals Pvt Ltd. serves as the analyte. The optoelectronic system consisted of a 650nm narrowband laser, photo detector from Holmarc for light launching and detection respectively. In order to make the measurements independent of temperature effects of the surrounding environment, the POF, after polishing was treated to several cycles of heating and cooling in high temperature oil (Silicone oil). The POF (Plastic optical fiber) was jacketed in a PTFE tube with diameter 3mm during the heat-cool cycles to prevent the ingress of oil into the sensing region. Later, the solution concentration was again monitored and the results show the independency in the photocurrent output on temperature. © 2021 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper  
**Publication Stage:** Final  
**Source:** Scopus

35) Bandari, N.K., Thammana, A., Jagadeesh Chandra, S.V.

**Enhancement Analysis of PLC Transformed OFDM with WHT Precoding**

(2021) *2021 4th International Conference on Electrical, Computer and Communication Technologies, ICECCT 2021, .*

**DOI:** 10.1109/ICECCT52121.2021.9616792

Vignan's Institute of Information Technology, Department of ECE, Visakhapatnam, India

**Abstract**

OFDM, an intriguing answer for wireless systems that request huge information rates. OFDM signal, be that as it may, experiences its enormous Peak-to-Average Power Ratio (PAPR), actuates distortion while going through HPA, a non-linear device. Because of this, the trouble of DAC and HPA increments. Many methods are accessible for lessening OFDM's PAPR. Among them all, companding appears an appealing low-intricacy strategy for decrease of PAPR by the OFDM signal. As of late, a direct companding procedure which plans to limit companding mutilation is suggested. An intence Piecewise Linear companding (PLC) approach is presented in this paper utilizing the Walsh Hadamard Transform (WHT) method. Results show that this proposed new strategy accomplishes a critical decrease in PAPR while holding improved execution in the BER over WiMAX channels and Power density spectrum, PSD contrasted with the Piecewise Linear companding technique © 2021 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper  
**Publication Stage:** Final  
**Source:** Scopus

36) Ramesh, J.<sup>a</sup>, Thammana, A.<sup>a</sup>, Sudha, V.<sup>b</sup>

**Maximization of Energy Efficiency in CR Based IoT Systems Using PSO and GA Algorithms**

(2021) *2021 4th International Conference on Electrical, Computer and Communication Technologies, ICECCT 2021, .*

**DOI:** 10.1109/ICECCT52121.2021.9616935

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<sup>b</sup> National Institute of Technology, Electronics and Communication Engineering, Trichy Tiruchirappalli, India

**Abstract**

IOT systems are more compatible with 5G wireless communication systems. Internet of things has the capability of sharing large amount of data, due to which there is an overhead on the IOT network. The better solution to overcome this problem is by incorporating suitable routing and best energy conversation methods. Cognitive radio is the best solution for routing and energy conservation methods due to its intelligence. But there is swap between spectrum sensing time and energy consumption in cognitive radio networks. To overcome the trade-off, the inclusion of Optimization in cognitive radio is must for better IOT services. In this paper, we try to resolve joint optimization of sensing time and energy consumption by using Genetic Algorithm (GA) and Particle Swarm Optimization (PSO) in cognitive radio network under Co-operative communication scenario. © 2021 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

**Document Type:** Conference Paper  
**Publication Stage:** Final  
**Source:** Scopus

37) Kadali, L.<sup>a</sup>, Manumanthu, S.K.<sup>b</sup>, Jagadeesh Chandra, S.V.<sup>a</sup>

**A CMOS RF-to-DC Rectifier with 86% PCE at Input Power of -14 dBm @ 2.4GHz for RF Energy Harvester**

(2021) *2021 4th International Conference on Electrical, Computer and Communication Technologies, ICECCT 2021, .*

**DOI:** 10.1109/ICECCT52121.2021.9616630

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**Abstract**

RF energy harvesting has a significant disadvantage in that its power density is extremely low in comparison to other ambient energy sources. Reducing and converting weak RF power to usable DC power is what the rectifier does in an RF energy harvesting system. We present a novel design for an improved RF-to-DC power converter whose impedance is matched to 50 ohms. The circuit is designed on three architectures comprising cross-coupling rectifiers, self-biased techniques and the adaptive threshold voltage circuit to achieve a high efficiency of power conversion, and the use of a precise diode operating amplifier for the detection of peak power. Based on CMOS technology, the simulation is implemented using 180nm. The proposed system design has obtained up to 86 percent power conversion efficiency with -14.4 dBm, with minimal input power of -20.04 dBm at 2.4 GHz, with a 20k load resistance and 10 PF. © 2021 IEEE.

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**Source:** Scopus

- 38) Murali Krishna, K.<sup>a</sup>, Borole, Y.D.<sup>b</sup>, Rout, S.<sup>c</sup>, Negi, P.<sup>d</sup>, Deivakani, M.<sup>e</sup>, Dilip, R.<sup>f</sup>

**Inclusion of Cloud, Blockchain and IoT Based Technologies in Agriculture Sector**

(2021) *2021 9th International Conference on Cyber and IT Service Management, CITSM 2021*, .

**DOI:** 10.1109/CITSM52892.2021.9588894

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**Abstract**

India is a country of vast diversification in all respect, but the common fact among all this is that about 80% of our population depends on agriculture and its allied activities for their livelihood. As per a recent government report, more than 50% of unskilled workforces have been engaged in this sector and contribute to roughly 16-20% towards Gross Domestic Product, strengthening the national economy. Unfortunately, our agricultural practice has been following primitive practices and failed to adopt modern-day skills, which helps in good productivity and increases resilience and sustainability with socio-economic benefits. Indian farmer needs to be trained and better equipped to handle ever-growing threats due to globalization, unregulated Foreign Direct Investments (FDI) and MNCs in this sector. Hence the need of the hour is to introduce new agricultural education reforms, technology transfer and prioritization of trans disciplinary science and applied research at a high priority. This shall prove beneficial in minimizing the gap of professional expertise in the agro-market. Researchers and the scientific community have been making efforts in designing, developing and adopting new paradigm changes in agriculture in the country. The government of India has taken significant measures with immediate attention to revolutionizing the effectiveness of advanced training in flourishing agricultural infrastructure. The author has made a novel investigation to assess the present scenario, potential challenge, scope of progress, forthcoming possibilities and finally discussed next-generation technologies which can successively change the course conventional of education and literacy in agro-farming with the huge opportunity of employment generation through entrepreneurship. © 2021 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.

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**Publication Stage:** Final

**Source:** Scopus

- 39) Mrudula Devi, K.<sup>a</sup>, Venkata Ramakrishna, S.<sup>b</sup>, Rama Koteswara Rao, G.<sup>c</sup>, Prasad, C.<sup>d</sup>

**Gradient-based Optimization of the Area under the Minimum of False Positive and False Negative Functions***(2021) Proceedings - 2nd International Conference on Smart Electronics and Communication, ICOSEC 2021, pp. 779-785.*

DOI: 10.1109/ICOSEC51865.2021.9591945

<sup>a</sup> Vignans Institute of Information Technology (Autonomous), Department of BS&H, AP, Visakhapatnam, 530046, India<sup>b</sup> Priyadarshini Institute of Technology and Science For Women, Department of BS&H, AP Chintalapudi522124, India<sup>c</sup> Koneru Lakshmaiah Education Foundation, Department of CSIT, AP, Vaddeswaram, 522502, India<sup>d</sup> Koneru Lakshmaiah Education Foundation, Department of CSE, AP, Vaddeswaram, 522502, India**Abstract**

Collector Operating Characteristic (ROC) bends are plots of genuine awesome expense versus bogus eminent charge which are helpful for assessing twofold order models, but intense to use for becoming more acquainted with because of the way that the Area Under the Curve (AUC) is non-arched. ROC bends can moreover be utilized in various issues that have bogus awesome and real fine charges, for example, changepoint identification. This research work shows that in this noteworthy normal setting, the ROC bend is currently not typically monotonic, thus in case circles are existing the Area Under the Curve (AUC) can be higher than one. Also, this research work suggests another differentiable substitute misfortune include alluded to as the AUM, brief for Area Under Min (FP, FN). Finally, this research study shows that the AUM slope can be successfully figured and utilized in another dominating calculation. In our experimental look into of managed twofold arrangement and changepoint recognition issues, it has been shown that the proposed novelAUM minimization calculation results in expanded AUC and comparable speed comparative by going before baselines. © 2021 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.**Document Type:** Conference Paper**Publication Stage:** Final**Source:** Scopus

- 40) Satyanarayana, A.V.<sup>a</sup>, Hareesh Kumar, K.<sup>b</sup>, Jyothi Pujari, J.<sup>c</sup>, Prasad, C.<sup>d</sup>, Venkata Ramakrishna, S.<sup>e</sup>, Venkata Subba Rao, V.<sup>f</sup>

**Improving the Role Model of Community Auxiliary Robots Testing Using Robot Operating System 2***(2021) Proceedings - 2nd International Conference on Smart Electronics and Communication, ICOSEC 2021, pp. 794-798.*

DOI: 10.1109/ICOSEC51865.2021.9591953

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Over the past few years, robots have undergone significant developments. One of this development is socially assistive robots (SARs) which are able to assist users in the form of social interaction. However, due to their nature which involves direct interaction with the user, testing SARs could be difficult and risky. For this reason, this study proposes a simulation environment for testing SARs created using the Gazebo simulator. In this simulation environment, the robot model will be tested virtually with a user model and other object models. In order for the test performed in the simulation could be applied to real robots, the controller system in the robot will be abstracted by separating each component into nodes using ROS 2. As a result, the system created can produce the same action in moving the robot model and the real robot with an error difference of 2.6% in the simulation and 12.5% in the real world. With the performance of ROS 2, images delivery with a resolution of up to 640 x 480 can produce delays below 50 ms and frequencies above 90% on the same device and between devices. In the simulation, the user model proved capable of being used to simulate the user through the results of the pose detection experiment, while the simulation environment proved capable of being used to simulate the room through the results of the SLAM experiment. © 2021 IEEE.

**Publisher:** Institute of Electrical and Electronics Engineers Inc.**Document Type:** Conference Paper**Publication Stage:** Final**Source:** Scopus

- 41) Vigneshwaran, S.<sup>a</sup>, Madhavan, R.<sup>a</sup>, Yoganjaneyulu, G.<sup>b</sup>, Narayanasamy, R.<sup>c</sup>

**Study on forming and fracture behavior of continuous Annealed, batch annealed and cold rolled SS 430 sheet metals**

(2021) *Materials Today: Proceedings*, 46, pp. 51-60.

DOI: 10.1016/j.matpr.2020.06.032

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<sup>c</sup> Department of Production Engineering, National Institute of Technology, Tamil Nadu, Tiruchirappalli, 620 015, India

**Abstract**

The stainless steel 430 grade sheet metals with three process conditions namely, continuous annealed (CA), batch annealed (BA) and cold rolled (CR) were subjected to forming limit diagram (FLD) experiment. The combined FLD and the fracture limit diagram were plotted for all three processed conditions, which resulted in higher forming limit strain and fracture limit strain values for the CA sheet metal. Further, the parameters like, strain hardening exponent (n), normal anisotropy (r) and formability parameter (nr) reported higher values for CA sheet metal, which signified better formability. Besides, the void coalescence analysis was performed after FLD experiment. Based on void coalescence analysis, the CA sheet metal exhibited higher average void size, void area with least ligament thickness and d-factor indicated its better formability before fracture. These results were consistent with the experimentally evaluated FLD, which showed higher formability for CA sheet metal. Also, the presence of recrystallized microstructure in CA sheet metal resulted in higher strain hardening capability, which resulted higher necking percentage in combined FLD and fracture limit diagram. © 2021 Elsevier Ltd. All rights reserved.

**Publisher:** Elsevier Ltd

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**Publication Stage:** Final

**Source:** Scopus

- 42) Mahanty, M.<sup>a</sup>, Kumar, P.H.<sup>a</sup>, Sushma, M.<sup>b</sup>, Chand, I.T.<sup>a</sup>, Abhishek, K.<sup>a</sup>, Chowdary, C.S.R.<sup>a</sup>

**A Comparative Study on Construction of 3D Objects from 2D Images**

(2021) *Lecture Notes in Networks and Systems*, 210 LNNS, pp. 205-222.

DOI: 10.1007/978-981-16-1773-7\_17

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**Abstract**

The 3D image construction for the 2D images is a longstanding problem, explored by the number of computer graphics, computer vision, and machine learning research organizations from decades. After the evolution of deep learning architectures, scholars have shown their interest in developing 3D images from the 2D greyscale or RGB images because this perspective shows a significant influence in the discipline of computer vision. The applications of this conversion found in various fields of medical image analysis, robotic vision, game design, lunar explorations, 3D modelling, military, geographical structuring, physics, support models, etc. Potentially, when a 2D image converted to 3D representation, the same image can be viewed from different angles and directions. The 3D structure, which in turn generated, is much more informative than 2D images as it contains information about distance from the camera to a particular object. In this paper, we discussed various exiting methods for generating 3D representations from 2D images, using 3D representational data as well as without 3D representational data and proposing a novel approach for the construction of 3D models from existing 2D images using GAN. Generative adversarial networks (GANs) have shown tremendous results in generating new fake data from existing data, where we cannot detect the false data. Various other architectures of GAN, like HOLO-GAN, IG-GAN, have also been proposed to meet the need to convert 2D to 3D representation, which produced excellent results. After analysing, we provide an extensive comparative review on methods and architectures, which can convert 2D images to 3D objects and express our thoughts on the ideas proposed. Further, the concept of GAN extended to represent 360 view images, panorama images in 3D structures, which plays a vital role in spherical view analysis and synthesis, virtual reality design, augmented reality design, 3D modelling of data, etc. © 2021, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

**Publisher:** Springer Science and Business Media Deutschland GmbH

**Document Type:** Conference Paper  
**Publication Stage:** Final  
**Source:** Scopus

43) Pathan, A.<sup>a</sup>, Rao, N.T.<sup>a</sup>, Satyanarayana, M.<sup>b</sup>, Bhattacharyya, D.<sup>b</sup>

**Artificial Intelligence-Based Vehicle Recognition Model to Control the Congestion Using Smart Traffic Signals**  
(2021) *Lecture Notes in Networks and Systems*, 210 LNNS, pp. 161-172.

**DOI:** 10.1007/978-981-16-1773-7\_13

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#### **Abstract**

The present traffic system is a timer-based system which works upon a constant timing. If one side of a traffic junction is having fewer vehicles compared to the other side, still the timer runs the same for both the sides. In our paper, we overcome this problem by using a vehicle recognition model. This AI model runs over the images of all the sides of a traffic junction and recognizes the number of vehicles and the type of vehicles. Depending upon the count and type of vehicles, the timer is reset every time, and the time for every run is calculated by the model. In addition to this, our vehicle recognition (AI) model also focuses on detection of ambulances, so the side with these kinds of vehicles is given first priority over the other sides. This model detects individual vehicles and categorizes them into one of these classes instead of counting vehicles. © 2021, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

**Publisher:** Springer Science and Business Media Deutschland GmbH

**Document Type:** Conference Paper  
**Publication Stage:** Final  
**Source:** Scopus

44) Dinesh Reddy, B.<sup>a</sup>, Ganiya, R.K.<sup>a</sup>, Thirupathi Rao, N.<sup>a</sup>, Kim, H.-J.<sup>b</sup>

**An IoT Model-Based Traffic Lights Controlling System**  
(2021) *Lecture Notes in Networks and Systems*, 210 LNNS, pp. 195-204.

**DOI:** 10.1007/978-981-16-1773-7\_16

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#### **Abstract**

Several problems of pandemic situations arise in various countries and also around the world in recent years. In recent days, the situation of traffic was going very great in number due to these pandemics. Most of these pandemics are occurring due to the viral spread with the contacts or nearby people. As a result, most of the people are interested to purchase their own vehicles that may be either two-wheeler vehicles or any four-wheeler vehicles. As a result, the traffic problems in the cities are growing at a faster level, and also, the pollution levels are getting increased. Hence, in the current article, an attempt had been made to analyse the traffic on the roads to control the congestions on the city roads at regular intervals of time. The current model was developed on the Python platform, for understanding the performance of the current model, four different cases of input images were selected and tested with the current developed model, and the results were discussed in the results section. © 2021, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

**Publisher:** Springer Science and Business Media Deutschland GmbH

**Document Type:** Conference Paper  
**Publication Stage:** Final  
**Source:** Scopus

45) Rajendra Kumar, G.<sup>a</sup>, Dinesh Reddy, B.<sup>a</sup>, Thirupathi Rao, N.<sup>a</sup>, Bhattacharyya, D.<sup>b</sup>



**Performance Analysis of a Simulation-Based Communication Network Model with NS2 Simulator**  
(2021) *Lecture Notes in Networks and Systems*, 210 LNNS, pp. 139-146.

**DOI:** 10.1007/978-981-16-1773-7\_11

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<sup>b</sup> Department of Computer Science and Engineering, K L Deemed to be University, Guntur, 522502, India

**Abstract**

This paper displays a system show for cutting edge cell systems intended to meet the dangerous needs of versatile information while limiting vitality utilisation. The store technique is used in the remote edge of the spread of prominent substance documents, along these lines lessening the substance and the separation between the requestor. Keeping in mind the end goal to improve utilisation of the accessible store space, the reserve system is upgraded and multicast transmission is considered. The numerical after-effects of the following drive demonstrate that mix of reserve and multicast is compelling when there is happening rehashed asked for a couple of substance records show up over the long haul. It can in reality diminish vitality costs within the sight of an extensive interest for postponed resilience content. © 2021, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

**Publisher:** Springer Science and Business Media Deutschland GmbH

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

46) Meeravali, S.<sup>a</sup>, Thirupathi Rao, N.<sup>b</sup>, Bhattacharyya, D.<sup>c</sup>, Kim, T.-H.<sup>d</sup>

**A Steady-State Analysis of a Forked Communication Network Model**  
(2021) *Lecture Notes in Networks and Systems*, 210 LNNS, pp. 281-299.

**DOI:** 10.1007/978-981-16-1773-7\_23

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**Abstract**

Communication between the people around the world is increasing a lot. As a result, several types of network models are being designed to meet the requirements of the users for data transmission with respect to both voice and video communication. There is always a scope for the development of new network models for better and faster communication. As a result, the number of researchers is getting interested toward the utilization of these sensor networks and also working with the wireless sensor devices. In the current article, an attempt has been made to develop a forked communication network model with queuing model-based equations are developed for better understanding of the model to implement and verify its performance at various situations. The results are calculated by the help of MATLAB and MathCAD software. The results can be observed in detail in the results section for a better understanding of the working of the network model. © 2021, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

**Publisher:** Springer Science and Business Media Deutschland GmbH

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

47) Doppala, B.P., NagaMallik Raj, S., Stephen Neal Joshua, E., Thirupathi Rao, N.

**Automatic Determination of Harassment in Social Network Using Machine Learning**  
(2021) *Lecture Notes in Networks and Systems*, 210 LNNS, pp. 245-253.

**DOI:** 10.1007/978-981-16-1773-7\_20

Vignan's Institute of Information Technology (A), Visakhapatnam, India

**Abstract**

Globally the number of Internet users are very high, and the majority of the users are youngsters. They will be participating in many activities in social networks like twitter, Facebook, etc. With lightning speed of Internet, everyone can explore the information of unknown. As a result, much more cyber-based crimes and harassments are raising day by day. Artificial intelligence can bring out solution for such issues. Lot of research has been taken place for the identification of online harassments through comments and messages posted over the platforms. Sometimes context of the statement matters for judging the comment. We propose a mechanism for identifying online harassment based on context by using one of the familiar online platform called Twitter. For this research work, we have used few machine learning algorithms. © 2021, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

**Publisher:** Springer Science and Business Media Deutschland GmbH

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 48) Sushma, D.<sup>a</sup>, Satyanarayana, K.V.<sup>b</sup>, Thirupathi Rao, N.<sup>a</sup>, Bhattacharyya, D.<sup>c</sup>, Kim, T.-H.<sup>d</sup>

**An Automatic Perception of Blood Sucker on Thin Blood Splotch Using Graphical Modeling Methods**  
(2021) *Lecture Notes in Networks and Systems*, 210 LNNS, pp. 71-81.

**DOI:** 10.1007/978-981-16-1773-7\_6

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#### Abstract

Parasite is a host bacterium known as a plasmodium which lives on a different organism. This parasite is susceptible to malaria, dengue, typhoid, etc. The involvement of parasite in the blood cells will also lead to death of the humans. It is also very important to identify and diagnose the parasite in early blood film images in order to save human life. Therefore, the key slogan of this paper is to identify in less time the parasite in red blood cells using a new image processing technique by blood film images in early phases. Aim: In this article, the primary focus is on identifying the blood sucker which occur in red blood cells using thin blood film images in less time using a modern image processing system, in early stage. Method: In several steps, the procedure used detects the presence of blood sucker on photographs of blood films. The first step is to obtain the image from an optical microscope laboratory. Using the standard method, the image is then transferred into the grayscale image. The output image which is a grayscale image is transformed into the single-color image i.e., monochrome image which contains the pixel values using the "Binary Threshold method". This monochrome image is then transformed into a matrix format and printed with binary values i.e., zero's and one's. Conclusion: The output matrix method will be displayed with the binary values by either one or zero which represents the presence or absence of blood sucker. If all zeroes are displayed in whole image, then no blood sucker presence can be reached in that case, and if any ones are displayed in the blood film images, it may be found that the blood film images contain a blood sucker. © 2021, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

**Publisher:** Springer Science and Business Media Deutschland GmbH

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 49) Archana Acharya, T.<sup>a</sup>, Veda Upasan, P.<sup>b</sup>

**A Study on Techniques of Soft Computing for Handling Traditional Failure in Banks**  
(2021) *Lecture Notes in Networks and Systems*, 210 LNNS, pp. 309-319.

**DOI:** 10.1007/978-981-16-1773-7\_25

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#### Abstract

Financial turmoil (crisis) is a condition that arises due sudden decline in the nominal value of the financial assets which results in banking panics. Predicting alarming signals of crisis which is financial in nature is a tough assignment as the total economy is based on it for all industries in general and banks in particular. During the panic situation, there is coincides with the recession. The present conceptual paper gives a review of soft computing applications for predicting the crisis condition or bankruptcy which further help in promoting future empirical research to prevent bank failures and financial crises. © 2021, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

**Publisher:** Springer Science and Business Media Deutschland GmbH

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**Publication Stage:** Final

**Source:** Scopus

50) Chandra, K.R.<sup>a</sup>, Donga, M.<sup>b</sup>, Budumuru, P.R.<sup>a</sup>

**Reversible Data Hiding Using Secure Image Transformation Technique**

(2021) *Lecture Notes in Networks and Systems*, 204 LNNS, pp. 657-668.

**DOI:** 10.1007/978-981-16-1395-1\_49

<sup>a</sup> Vishnu Institute of Technology, Bhimavaram, India

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**Abstract**

With the gigantic popularity of re-appropriating data in the path of the cloud, it's essential towards the protection of data and authorizes the cloud employee to easily change the knowledge at the same time. Underneath such requests, Reversible Data Hiding in Encrypted Images (RDH-EI) attracts associate with an ever-increasing variety of specialists' decisions concerning the structure for RDH-EI upheld Reversible Image Transformation (RIT). Two RDH methods, together with customary RDH conspire and unified putting in and scrambling arrangement, data received to insert watermark within the encoded image, which can fulfill numerous wants on image quality and big implanting limit individually. © 2021, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

**Publisher:** Springer Science and Business Media Deutschland GmbH

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

51) Swathi, K., Vamsi, B., Rao, N.T.

**A Deep Learning-Based Object Detection System for Blind People**

(2021) *Lecture Notes in Networks and Systems*, 210 LNNS, pp. 223-231.

**DOI:** 10.1007/978-981-16-1773-7\_18

Department of Computer Science and Engineering, Vignan's Institute of Information Technology, Visakhapatnam, 530049, India

**Abstract**

Visual impairment is one of the top disabilities among men and women across the world of all ages. Object detection is the primary task for them, and it can be implemented by deep learning techniques. Earlier implementation techniques involve in object detection with a strategy of single labeling. The proposed model uses classification techniques which reduce the recognize time of multi-objects with best time complexities and can help the visually impaired people in assisting the accurate navigation, in both indoor and outdoor circumstances. The proposed hybrid model is a combination of U-Net with base as residual network (ResNet) which improves accuracy in detection of objects in indoor and outdoor for visually impaired people. © 2021, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

**Publisher:** Springer Science and Business Media Deutschland GmbH

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**Source:** Scopus

- 52) Thirupathi Rao, N.<sup>a</sup>, Asish Vardhan, K.<sup>b</sup>, Srinivasa Rao, P.<sup>c</sup>, Bhattacharyya, D.<sup>d</sup>, Kim, H.-J.<sup>e</sup>

**A Detailed Study on Optimal Traffic Flow in Tandem Communication Networks**

(2021) *Lecture Notes in Networks and Systems*, 210 LNNS, pp. 1-15.

DOI: 10.1007/978-981-16-1773-7\_1

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**Abstract**

The utilization of communication networks is increasing in a rapid manner day to day. As the network models are growing a lot, the people using those networks are also increasing a lot. As the number of users is increasing, the provision of Internet and other network facilities also had to be increased. The increase of facilities will cost a lot, as the cost of this network equipment will be more. Hence, before going for the actual installation and utilization of these facilities, the models are based on the real-time situation scenarios and those network models are studied in detail for the better understanding and for better proper utilization and installation of the network facilities. Several models had been developed in the literature for various scenarios. In the current model, a particular situation of the network model was taken by choosing that the model was in forked model condition. Forked model condition means the two nodes are connected in parallel to each other, and the other third node was connected in series with the other two-node parallel combination. The flow of the network will first cross the two nodes which were connected in parallel to each other and then the flow will be carried to the third node in serial communication. The distribution to be considered here for the data flow was the Poisson process with binomial bulk arrivals. In that scenario, the performance of the network model is calculated, and the sensitivity of the model also calculated. The results are discussed in detail in the results section. © 2021, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

**Publisher:** Springer Science and Business Media Deutschland GmbH

**Document Type:** Conference Paper

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**Source:** Scopus

- 53) Laxmi Lydia, E.<sup>a</sup>, Moses Gummadi, J.<sup>b</sup>, Ranjan Pattanaik, C.<sup>c</sup>, Prasad, B.<sup>d</sup>, Usha Kumari, C.<sup>e</sup>, Daniel, R.<sup>f</sup>

**Collective Examinations of Documents on COVID-19 Peril Factors Through NLP**

(2021) *Lecture Notes in Electrical Engineering*, 733 LNEE, pp. 779-788.

DOI: 10.1007/978-981-33-4909-4\_62

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**Abstract**

The outbreak of the novel COVID-19 virus is identified across all experimental scientific tests that assist victims to fight against the pandemic situation. The problem seems to have a large number of scientific COVID-19 articles with different risk factors. The quick identification of documents allows the processing and interpretation of inevitable essential knowledge for investigators. This article provides a solution by creating an unsupervised framework for the interpretation of clinical trials over COVID-19 risk factors with a diverse range of articles related to vaccines and treatments from a large corpus of documents. It also provides practical informative knowledge regarding COVID-19 risk factors and helps researchers to enable any single author to obtain appropriate information. The present application uses artificial intelligence, natural language processing approaches, incorporated throughout the search engines, to search for keywords to classify categories with normalized linguistic data. The text data are instead parsed in phrases and thresholds the text with recognition of data frame components with relevant outcomes. © 2021, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

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- 54) Laxmi Lydia, E.<sup>a</sup>, Moses Gummadi, J.<sup>b</sup>, Ranjan Pattanaik, C.<sup>c</sup>, Krishna Mohan, A.<sup>d</sup>, Jaya Suma, G.<sup>e</sup>, Daniel, R.<sup>f</sup>

**Interdependence in Artificial Intelligence to Empower Worldwide COVID-19 Sensitivity**

(2021) *Lecture Notes in Electrical Engineering*, 733 LNEE, pp. 809-819.

**DOI:** 10.1007/978-981-33-4909-4\_65

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**Abstract**

Researchers from different disciplines are striving to leverage a solution for COVID-19 with a unique commitment of scientific collaborations and with cognitive technologies, and highly flexible learning processes are required to maintain the transmission of knowledge, prototype, and code by integrating the application areas to a specific culture and cross-border cooperation. The research experts in the artificial intelligence (AI) and machine learning (ML) domain were tracked and predicted with real-time data observed throughout the world regarding the pandemic situation and timely assessment of the distributed COVID-19 patient information. The considered physiological features followed by clinical tests of patients with COVID-19 offer very simple access to subsequent data transformation, which was relevant but complicated. This paper works on in-depth exploratory data analysis (EDA) prediction analysis over the global medical database of COVID-19 will be available for benefiting future artificial predictive, analytical, and biomedical research, which includes additional COVID-19 approaches associated with pandemics. © 2021, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

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**Publication Stage:** Final

**Source:** Scopus

- 55) Mohammad, M.N.<sup>a</sup>, Kumari, Ch.U.<sup>b</sup>, Murthy, A.S.D.<sup>c</sup>, Jagan, B.O.L.<sup>d</sup>, Saikumar, K.<sup>d</sup>

**Implementation of online and offline product selection system using FCNN deep learning: Product analysis**

(2021) *Materials Today: Proceedings*, 45, pp. 2171-2178.

**DOI:** 10.1016/j.matpr.2020.10.072

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<sup>c</sup> Department of ECE, Vignan's Institute of Information Technology (A), Visakhapatnam, Andhra Pradesh, India

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**Abstract**

Now a day's Artificial intelligence and deep learning techniques recommended critical E-commerce applications. The human computing, computer aided designs cannot understand the alternative offline and online products. Therefore, customers are critical to find out the products such as groceries, fashion and health. However, it is a major task to overcome this limitation for human perceptions. In this research work an advanced FCNN deep learning model is proposed with global thresholding technique. For this work selecting the digital images and online images for pre-processing and classification. At primary stage segmentation is applied then classification is performed through FCNN, at final calculating the performance measures such as accuracy 98.7%, sensitivity 98.7% and throughput 99.23% has been achieved and outcomes are challenging the present technology. © 2021 Elsevier Ltd.

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**Publication Stage:** Final

**Source:** Scopus

- 56) Laxmi Lydia, E.<sup>a</sup>, Gummadi, J.M.<sup>b</sup>, Pattanaik, C.R.<sup>c</sup>, Jaya Suma, G.<sup>d</sup>, Krishna Mohan, A.<sup>e</sup>, Daniel, R.<sup>f</sup>

**Global Integration and Distribution of Data Through Machine Learning for COVID-19**

(2021) *Lecture Notes in Electrical Engineering*, 733 LNEE, pp. 375-381.

**DOI:** 10.1007/978-981-33-4909-4\_28

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**Abstract**

COVID-19 is referred to as a broad disaster struck out in the society as a challenge. The large quantity of statistical information requires machine tools to improve the knowledge and accelerate COVID-19 forecast, analysis, and its corresponding remedial measures. But, to evade global hazards in these applications, open research will be made mandatory. This article uses machine learning model to integrate COVID-19 data and distribute the data globally. Machine Learning (ML) solutions that rely on COVID-19 data use the SIR model and logistic regression model to analyze how the pandemic cycle propagates all around the inhabitants. The figures of the SIR model concentrate on time-driven case scenarios to predict the behavior of infection, whereas the cumulative cases have become more reliant on significant-data plots. © 2021, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

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**Source:** Scopus

- 57) Reddy, M.P.P.<sup>a</sup>, Kumari, Ch.U.<sup>b</sup>, Kishore, P.<sup>c</sup>, Swaraja, K.<sup>b</sup>, Lydia, E.L.<sup>d</sup>

**Design of automated identification of alcoholic drivers in intoxicated state**

(2021) *Materials Today: Proceedings*, 45, pp. 2069-2072.

**DOI:** 10.1016/j.matpr.2020.09.604

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**Abstract**

High-speed vehicles and reckless driving have caused quite frequent accidents by intoxicated people. Alcoholism is one of the key causes contributing to reckless driving. We used an alcohol sensor in this work to detect the driver's condition and take the appropriate action. Because the flow of information is very critical in case of incidents, the device also integrates on board pressure and MEMS sensor to identify the effects. The camera takes the pictures, and the GPS location information is sent to registered mail via the Raspberry pi3 board's TWILIO app mounted in the car, sending the alert to the registered mobile phone. In addition, FMCW radar is used for anti-collision purposes because of its precise measurements of short range. © 2021 Elsevier Ltd.

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**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

58) Srinivasa Rao, M.<sup>a</sup>, Sekhar, C.<sup>a</sup>, Bhattacharyya, D.<sup>b</sup>

**Comparative Analysis of Machine Learning Models on Loan Risk Analysis**

(2021) *Advances in Intelligent Systems and Computing*, 1280, pp. 81-90.

**DOI:** 10.1007/978-981-15-9516-5\_7

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<sup>b</sup> Department of CSE, K L Deemed to be University, KLEF, Guntur, AP, India

**Abstract**

Financial institutions suffer from the risk of losing money from bad customers, specifically banking sectors, where the risk of losing money is higher, due to bad loans. This causes an economic slowdown of the nation. The banking industry has a significant action of lending cash to individuals who are needing cash. In order to payback, the principal borrowed from the depositor bank collects the interest made by the principal borrowers. Credit risk investigation is turning into a significant field in financial risk management. Many credit risk analysis strategies are utilized for the assessment of credit risk of the client dataset. In this paper, we designed a model which takes loan data of the customers who applied for a loan from a bank and predicted to give the credit of the client or reject the utilization of the client. The proposed model takes the factors which affect the loan status of a person, thus providing accurate results for issuing credit to the client or reject the utilization of the client by considering all possibilities. © 2021, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

**Publisher:** Springer Science and Business Media Deutschland GmbH

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

59) Sekhar, C.<sup>a</sup>, Rao, M.S.<sup>a</sup>, Nayani, A.S.K.<sup>b</sup>, Bhattacharyya, D.<sup>c</sup>

**Emotion Recognition Through Human Conversation Using Machine Learning Techniques**

(2021) *Advances in Intelligent Systems and Computing*, 1280, pp. 113-122.

**DOI:** 10.1007/978-981-15-9516-5\_10

<sup>a</sup> Department of CSE, Vignan's Institute of Information Technology, Visakhapatnam, India

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**Abstract**

Emotion recognition will perform a hopeful role in the field of artificial intelligence, uniquely in the case of human-machine interface development. It is the process of recognizing and analyzing the emotion of chat and text, i.e., moods of the people can be easily found, and this process can be used in various social networking websites and various business-oriented applications. The mood of the person will be confirmed by making proper observations, i.e., by asking multiple questions until his/her situation is correctly recognized. Based on his/her answers, it tries to refresh his/her mind if he/she is in a bad mood (mild) by providing the refreshments based on the interests of the person that were gathered initially. The proposed system goes about as a choice emotionally supportive network and will demonstrate to be a guide for the doctors with the analysis. The user expresses his or her feelings, and the Chatbot replies accordingly. Using Python packages, NLTK and Flair, we analyze the intensity of the emotion. © 2021, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

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**Publication Stage:** Final

**Source:** Scopus

60) Vamsi, B.<sup>a</sup>, Doppala, B.P.<sup>a</sup>, Thirupathi Rao, N.<sup>a</sup>, Bhattacharyya, D.<sup>b</sup>

**Comparative Analysis of Prevalent Disease by Preprocessing Techniques Using Big Data and Machine Learning: An Extensive Review**

(2021) *Advances in Intelligent Systems and Computing*, 1280, pp. 27-38.

**DOI:** 10.1007/978-981-15-9516-5\_3

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#### **Abstract**

Nowadays, in communities like healthcare and biomedical data, there has been a tremendous growth. The healthcare industry maintains a vast quantity of treatments that should be given to patients by analyzing the diseases that once has already occurred among patients, for further references and methodologies in curing the diseases by maintaining this vast track of history that has already been saved in the healthcare industry. In view of big data progress in biomedical data and healthcare communities, veracious study and predictive analysis of this methodologies related to medical data account to early disease recognition, patient care, and community services. When the trait of these methodologies is incomplete, the promptitude of study becomes economized. Furthermore, at particular regions, they show an uncommon trait of these certain differential regional diseases, which may cause the outcomes in diminishing the prediction of disease outbreaks. A prior task is that how the data can be accessed and how the information could be available for particular disease from these vast data saving machines. On the other hand, some machines develop techniques that are applied by providing realistic time sequence data, statistical analysis, and innovative data analytics in terms of patient's family history, laboratory reports, impact of disease, and blood pressure. The proposed work is to identify the problem in patient earlier by producing the exact treatment in advance before the disease attacks the patient completely, which may save the patients' life in reducing the complexities. © 2021, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

**Publisher:** Springer Science and Business Media Deutschland GmbH

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 61) NagaMallik Raj, S.<sup>a</sup>, Dinesh Reddy, B.<sup>a</sup>, Thirupathi Rao, N.<sup>a</sup>, Bhattacharyya, D.<sup>b</sup>

#### **Secure Information Transmission in Bunch-Based WSN**

(2021) *Advances in Intelligent Systems and Computing*, 1280, pp. 383-392.

**DOI:** 10.1007/978-981-15-9516-5\_32

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#### **Abstract**

Remote network incorporates a bigger favourable position in the present correspondence application like ecological, movement, military and well-being perception. To understand these applications, it is important to have a solid directing convention. The self-sorting out nature of MANETs makes them appropriate for some applications and henceforth, extensive exertion has been put into anchoring this kind of systems. Secure correspondence in a system is dictated by the unwavering quality of the key administration conspire, which is in charge of creating, circulating and looking after encryption/decoding keys among the hubs. In this paper, different key administration plans for MANETs are talked about. This examination work proposes a novel secure identity-based key management convention making utilization of cryptographic and information theoretic security. © 2021, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

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**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

- 62) Sushma, D.<sup>a</sup>, Thirupathi Rao, N.<sup>a</sup>, Bhattacharyya, D.<sup>b</sup>

#### **A Comparative Study on Automated Detection of Malaria by Using Blood Smear Images**

(2021) *Advances in Intelligent Systems and Computing*, 1280, pp. 1-18.

**DOI:** 10.1007/978-981-15-9516-5\_1



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#### Abstract

Malaria is a parasitic disease or mosquito-borne blood disease. When the mosquito bites a human being, that particular parasite is freed into the human being bloodstream and infects the red blood cells which cause the malaria. We need to understand if the blood-related illness is malaria or not before we provide the right therapy. For this purpose, we must diagnose red blood cells by recognizing or counting red blood cells (erythrocytes). It is very difficult to manually count and recognize infected red blood cells while testing under a microscope by pathologists because maybe it leads to different variations. The current paper gives an overview of the comparison of three different papers with three different techniques used to identify that the red blood cells are infected or not with great accuracy and also to identify which methods are giving best result while performing the diagnosis automatically. With different techniques and methods like Otsu threshold method, global threshold method and classifiers like artificial neural network and support vector machines. All these techniques and methods are related to the diagnosis of the malaria automatically which will reduce the time taken for performing the diagnosis and also it improves the consistency and gives the accurate, rapid result in diagnosis. From the above three methods used, an attempt has been made to finalize the best method from the above three methods. © 2021, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

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**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

63) Ray, A.<sup>a</sup>, Bhattacharyya, D.<sup>b</sup>

#### Performance Analysis of Different Classification Techniques to Design the Predictive Model for Risk Prediction and Diagnose Diabetes Mellitus at an Early Stage

(2021) *Advances in Intelligent Systems and Computing*, 1280, pp. 177-184.

**DOI:** 10.1007/978-981-15-9516-5\_15

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#### Abstract

Diabetes mellitus is also known as diabetes is the chronic disease. It is basically metabolic disorder. In this type of disease, glucose level is abnormally high in blood and in consequence body unable to produce adequate insulin in order to perform the needs. Glucose is one of the most vital components of health for producing energy of cell and brain. Blood containing excessive amount of glucose can lead to several serious health complications. Designing an innovative prediction model for early recognition of diabetes using machine learning techniques is the major purpose of this research. Our proposed model will be utilized to produce closest result comparing to clinical outcomes. The proposed work is involved to conduct in the comparison of efficiency of distinct machine learning algorithms such as support vector machine (SVM), random forest, decision tree, and K-nearest neighbors (KNN). Few key factors are responsible for diabetes mellitus. Our proposed method focuses on those selective attributes for early detection of diabetes mellitus using predictive analysis method. The efficiency of each algorithm is evaluated by performance measure methods like sensitivity, specificity, positive likelihood ratio, negative likelihood ratio, disease prevalence, positive predictive value, negative predictive value, and accuracy. SVM obtained highest accuracy (77.78%) with lower error rate compared to other algorithms. The vital goal of this study is to assess the suitable classifier by comparing and analyzing the performance of four algorithms that helps the doctors and hospitals for early diagnosed of diabetes mellitus and proper plan of treatment. © 2021, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

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**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

64) Srinivas, P.<sup>a</sup>, Pillala, P.<sup>b</sup>, Thirupathi Rao, N.<sup>c</sup>, Bhattacharyya, D.<sup>d</sup>

#### Performance Investigation of Cloud Computing Applications Using Steady-State Queuing Models

(2021) *Advances in Intelligent Systems and Computing*, 1280, pp. 213-225.

**DOI:** 10.1007/978-981-15-9516-5\_19

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### Abstract

Cloud computing is the technology that was gaining the attention of most of the companies in market and utilization also increasing day to day by almost from companies to ordinary people. The working of these cloud models is effortless. A considerable number of servers are used to store the data and a vast amount of data and the service of providing data to the customers staying at remote locations too. Almost all cloud-based models are not free, and users need to pay a reasonable amount to use the services of these clouds. As the vast data is stored in these servers and the usage of this data by a vast number of customers, there is a chance of overcrowded at servers. Essential data or the hot data like the new movies, exam results or bank transactions, etc., can have the most of the crowds at various time intervals. Hence, it is required to analyse the number of customers is using the current cloud models at different intervals of time. Based on the results, the adjustments or the changes in the network model can be completed. In the current article, an attempt has been made to analyse a cloud model by considering the model working in study state and the performance was analysed for two queuing models. Several queuing models are available in research to analyse the performance of a queuing model. In the current article, the queuing models considered are M/M/1 and M/M/c models. The performance of the queuing models is analysed with various performance metrics of a network, or the cloud model is arrival rates to the model, service rates to the model, traffic density, throughput, etc. The results are displayed in the results section. © 2021, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

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**Source:** Scopus

65) Ramya Sree, Y.<sup>a</sup>, Sudharani, B.<sup>a</sup>, Sravan Kumar, K.<sup>b</sup>, Prasad, D.J.V.<sup>a</sup>, Durga Prasad, C.<sup>a</sup>

### Harmony Search Optimization-Based Direct Estimation of Harmonic Components

(2021) *Lecture Notes in Electrical Engineering*, 728 LNEE, pp. 435-441.

**DOI:** 10.1007/978-981-33-4866-0\_53

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### Abstract

In this paper, harmony search (HS) method has been employed for estimating the accurate harmonic components present in voltage/current waveforms of power system, since the metaheuristic algorithms are more attractive for intricate optimization to solve the problems of nonlinear in nature with the high degree of variables. Unlike conventional estimation approaches, direct curve fitting-based approach is adopted in this paper for the nearest and quick estimation of different harmonic components of distorted voltage signals. Comparative assessment of the HS algorithm with particle swarm optimization (PSO) reveals the advantages in terms of convergence and accuracy. © 2021, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

**Publisher:** Springer Science and Business Media Deutschland GmbH

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus

66) Gupta, S.<sup>a</sup>, Rao, K.V.<sup>b</sup>, Dubba, N.<sup>a</sup>, Subrahmanyam, K.<sup>a</sup>

### Risk Analysis in Movie Recommendation System Based on Collaborative Filtering

(2021) *Advances in Intelligent Systems and Computing*, 1312 AISC, pp. 157-162.

**DOI:** 10.1007/978-981-33-6176-8\_17

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<sup>b</sup> Vignan's Institute of Information Technology, Visakhapatnam, AP, India

### Abstract

The main aim of any project or software is to provide customer satisfaction at the end. The problem in Movie Recommendation System is unusual recommendation of movies to users, i.e., liking and disliking of recommended movie. This problem or risk impacts customer satisfaction, as a result of which the software will not be used much by the end users, and the company will be in huge loss. So, this paper provides you a detail description of recommendation system, steps of how to analyze risks and how to tackle or mitigate them using genetic algorithm based on collaborative filtering approach. Single and multiobjectives were implemented. © 2021, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

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**Source:** Scopus

- 67) Kumari, Ch.U.<sup>a</sup>, Murthy, A.S.D.<sup>b</sup>, Prasanna, B.L.<sup>c</sup>, Reddy, M.P.P.<sup>c</sup>, Panigrahy, A.K.<sup>a</sup>

**An automated detection of heart arrhythmias using machine learning technique: SVM**  
(2021) *Materials Today: Proceedings*, 45, pp. 1393-1398.

**DOI:** 10.1016/j.matpr.2020.07.088

<sup>a</sup> Gokaraju Rangaraju Institute of Engineering and Technology, Hyderabad, India

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<sup>c</sup> Institute of Aeronautical Engineering, Hyderabad, India

### Abstract

Electrocardiogram (ECG) is widely used technique in study of heart beat irregularities such as cardiac arrhythmias, sinus rhythms and heart failure. It is a significant and popular technique to classify and detect the cardiac infraction. ECG signal analyses the electric activity of heart and outputs it in the form of waveforms which help in detection of heart irregularities. The main goal of this research work is to classify the arrhythmia with more accurate results in less computational time. The research is carried in machine learning technique- SVM classifier using Discrete Wavelet Transform (DWT). In this methodology, ECG samples of three different classes-Normal Sinus Rhythm, Congestive Heart Failure and Cardiac Arrhythmia were collected from MIT-BIH and BIDMC databanks. The collected signals were prepared into training set and testing set with a ratio of 70:30 percent respectively. Total 190 features were extracted from the prepared data using Discrete Wavelet Transform. DWT was chosen as it has the ability to vary the window size depending on the frequency. The extracted features were given to SVM classifier, which is best for classification purpose. The results were evaluated using the testing set and the final results were plotted using a confusion matrix. The performance accuracy of the model is 95.92 percent. © 2021 Elsevier Ltd. All rights reserved. Selection and peer-review under responsibility of the scientific committee of the International Conference on Advances in Materials Research - 2019.

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**Publication Stage:** Final

**Source:** Scopus

- 68) Ramesh, P.<sup>a</sup>, Ravi Sankar, R.S.<sup>b</sup>

**Analysis of Quality, Installation of Power Supplied by APSPDCL to Urban and Rural Areas**  
(2021) *Lecture Notes in Electrical Engineering*, 700, pp. 3295-3309.

**DOI:** 10.1007/978-981-15-8221-9\_306

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### Abstract

This paper deals about the installation, supply, and quality of the power. It covers the installation of electricity service in the

house, the time gap between installation and application, problems involved in connection, availability of power, power cut, alternative source of power, opinion on quality of power supplied, fault metering, damage of electrical appliances, etc. the different parameters such as electrification, power cut, alternative source of energy, power quality and fault clearing time by APSSDC, and damage of the electricity appliance due to poor power quality. The opinion of the respondents from urban and rural areas has not varied on the installation of electricity service, problems of electrical appliances due poor quality of power. There is no difference between urban and rural respondents' opinion on frequent causes of power cut and poor quality of power supply. This study is based on the primary data collected through structured questionnaire with related variables. The sample size of 740 respondents was chosen by using proportionate random sampling technique from among urban and rural domestic electricity consumers of Guntur district in Andhra Pradesh. © 2021, Springer Nature Singapore Pte Ltd.

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**Publication Stage:** Final

**Source:** Scopus

69) Ramesh, P.<sup>a</sup> , Ravi Sankar, R.S.<sup>b</sup> , Deepika, K.K.<sup>b</sup>

**Analysis of the Consumers' Satisfaction in Andhra Pradesh, Services Provided by Southern Power Distribution Company Limited**

(2021) *Lecture Notes in Electrical Engineering*, 700, pp. 3285-3294.

**DOI:** 10.1007/978-981-15-8221-9\_305

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**Abstract**

This work deals with the consumers' satisfaction on services rendered by APSPDCL. More power markets are needed in India. The analysis is carried out on advertisement given by the APSPDCL is affected the Indian power crises, power cuts. The sample is drawn from different urban and rural areas of Guntur district like Brodipeta, Arundelpeta, Kothapeta, Old Guntur, Naaz centre, SVN Colony, Vidya nagar, Nagaram palem, Narasaraopet, Chilakaluripet, Tenali, Nandivelugu, Kolakaluru, Athota, Penumuli, Kancharlapalem, Pedaravuru, Kuchipudi, etc. The total number of customers for both the areas is 1,264,898. Out of which 758,939 (60%) are from rural area, and 505,959 (40%) are from urban area. Student test is conducted to know the significant difference of opinion of the respondents on the primary data has been interpreted with the help of simple statistical tools such as percentages, ranking method, Chi-square test of significance is administered to know the association between variables in the questionnaire. mean values of between two areas, i.e. urban and rural areas. The respondents of each category of urban and rural figuring in the sample are picked up by proportionate random sampling method; the results of the field survey revealed that advertisement has influenced the total sample respondents to some regarding global alliance bring benefits to India's power sector the in respondents from rural and urbans. It may be inferred that the need of more power markets in India is required which is very much evident from the recent constitutions of National Power Exchange Centres and State Trading Centres in the country. © 2021, Springer Nature Singapore Pte Ltd.

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70) Pavani Srikavya, B.<sup>a b</sup> , Srinivasa Rao, P.<sup>a</sup> , Kamaluddin, S.<sup>b</sup>

**Lightweight Materials for Engine Cylinder Blocks/Liners—A Critical Review**

(2021) *Lecture Notes in Mechanical Engineering*, pp. 103-116.

**DOI:** 10.1007/978-981-15-9853-1\_10

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<sup>b</sup> Department of Mechanical Engineering, Vignan's Institute of Information Technology (A), Visakhapatnam, India

**Abstract**

Lightweight Materials have become a choice for many industries like automobile and aerospace due to its tunable mechanical properties like extremely high strength to weight ratio. Aluminum is the best lightweight material. Al metal/alloy matrix composites improve the mechanical properties but lack wear resistance. By applying proper coatings will improve

wear resistance. These Al MMCs are used to make engine parts like piston, connecting rod, engine cylinders, drum brakes, disc and cylinder liners. The present review is mainly about the properties of Aluminum Alloys in combination with different reinforcements produced by stir casting method and ultrasonic assisted stir casting method. And survey on the results of different reinforcements on the mechanical and tribological properties. In the present paper the use of composite materials and hard coatings explored so far are reviewed. © 2021, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

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**Publication Stage:** Final

**Source:** Scopus

- 71) Venkatesh, P.H.J.<sup>a</sup>, Viswanath, M.S.R.<sup>a</sup>, Meher, A.K.<sup>a</sup>, Shilwant, R.<sup>b</sup>

**Fabrication of Low Temperature Stage for Atomic Force Microscope**

(2021) *Lecture Notes in Mechanical Engineering*, pp. 217-239.

**DOI:** 10.1007/978-981-15-9853-1\_18

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**Abstract**

The AFM is been used in imaging materials. Operating at low temperatures with some advantages of low thermal noise and drift, used for high resolution measurements. The study of physical phenomenon which occurs at low temperature is possible, for example superconductivity, phase transition, etc., can be studied. Due to all these benefits developing Low temperature AFM appears to be an interesting subject of study. In this thesis, development of a compact design for low temperature stage is done which includes cooling system and temperature controlling system. The main component of cooling system is a low temperature sample stage capable of archiving up to 86 °K. Four different sample stages are designed and fabricated. Experiment was performed on these four different sample stages, which gave the temperature variation with respect to time. By observing these temperature variation optimum sample stage is chosen. These cooling was done in vacuum of order 10–3 mbar vacuum. To achieve this order of vacuum roots pump and sorption was used in series. Roots pump used to create vacuum of 10–1 mbar of vacuum both in Atomic force microscope (AFM) and then AFM is evacuated with sorption pump to achieve vacuum of order 10–3 mbar. AFM scan at low temperatures has been performed. © 2021, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

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- 72) Meher, A.K.<sup>a</sup>, Venkatesh, P.H.J.<sup>a</sup>, Viswanath, M.S.R.<sup>a</sup>, Naga Raju, J.<sup>b</sup>, Kumar, A.<sup>c</sup>

**Applicability of Empirical Correlations for Critical Heat Flux in Transfer Line Cool-Down Boiling**

(2021) *Lecture Notes in Mechanical Engineering*, pp. 457-479.

**DOI:** 10.1007/978-981-15-9853-1\_39

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<sup>b</sup> Department of Mechanical Engineering, J B Institute of Engineering and Technology, Hyderabad, Telangana, India

<sup>c</sup> Department of Cryogenic Engineering, Indian Institute of Technology, Kharagpur, West Bengal, India

**Abstract**

The Cool down of move lines with the cryogenic liquids is a stream bubbling procedure having diverse warmth move regimes. In Cryogenic fuel move frameworks, high exactness numerical models are required for anticipating this two-stage stream bubbling procedure. The punishment of wasteful model leads into higher edge of structuring and working expenses. There has consistently been a drive to figure an all inclusive connection which can cover an expansive scope of liquids alongside the thermodynamic conditions for anticipating heat motion. These relationships anyway don't cover cryogenic liquids explicitly for transient chill off bubbling of move lines. Consequently, the expectation of this investigation is to confirm these two-stage heat move connections for anticipating basic critical heat flux (CHF) against accessible stream bubbling

information for cryogenic liquids. Cryogenic quenching trial test information is looked at against accessible relationships and the mean outright deviation in anticipating most extreme warmth transition from every connection is introduced. Results obtained through this work means that the current relationships are unequipped for precisely anticipating the size of warmth move during the procedure words. © 2021, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

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- 73) Venkatesh, P.H.J.<sup>a</sup>, Viswanadha, V.<sup>b</sup>, Sravan Kumar, K.<sup>b</sup>, Ramesh, K.<sup>b</sup>

**Design of Pico Hydro Power Plant Using an Impulse Turbine**

(2021) *Lecture Notes in Mechanical Engineering*, pp. 251-260.

**DOI:** 10.1007/978-981-15-9853-1\_20

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<sup>b</sup> Department of Electrical and Electronics Engineering Vignan's Institute of Information Technology (A), Visakhapatnam, AP, India

**Abstract**

The practical design of Pelton wheel and analysis is made to measure the flow rate of rainwater entering into a small Pond by using a V-Notch weir. It was performed in a rural area with 65 houses. Every year during rainy season the amount of water used to go waste into the ponds without any utility for the people living in the rural areas with less population, the water during the rainy season flowing into the pond from the small drains into a large single connected single drain. In this paper a practical attempt is made to utilize the rain water by measuring the total flow rate of the rain water and after measuring based on the discharge obtained a small Pico hydropower plant is constructed using Pelton wheel and the amount of power is estimated. © 2021, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

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- 74) Sowjanya, C.<sup>a</sup>, Nagabhushana Rao, V.<sup>a</sup>, Pavani Sri Kavya, B.<sup>b</sup>

**Optimum Design and Analysis of Bell Crank Lever for an Automobile**

(2021) *Lecture Notes in Mechanical Engineering*, pp. 189-208.

**DOI:** 10.1007/978-981-15-9853-1\_16

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<sup>b</sup> Vignan Institute of Information Technology, Visakhapatnam, India

**Abstract**

Bell crank lever plays a vital role in the automotive manufacturing process plant in which they are installed. An attempt has been made to design and analyze the bell crank lever using CATIA and ANSYS Simulation software. The analysis is made under static loading condition for different angles such as 60, 90, 135°. The bell crank lever with different materials such as Cast iron, Low carbon steel, Magnesium alloy, and Aluminum silicon carbide have been selected for similar operating conditions. It has been analyzed by varying lever angles for the different materials and comparison is made on the basis of Von mises stresses, strains, and deformations. The shape optimization process is applied to bell crank lever. Shape optimization process helps to remove unwanted material to ensure light weight of the component. In the shape optimization process different slots such as Tapered slot, Rectangle slot, and curved slots are considered by removing the unnecessary material from component. This technique of shape optimization reduces the mass and can make the component lighter so that it can withstand higher loading conditions. © 2021, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

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**Source:** Scopus

75) Yoganjaneyulu, G.<sup>a</sup>, Sathiya Narayanan, C.<sup>b</sup>

**Application of Entropy—Deng's Similarity Approach for Optimization of Single-Point Incremental Forming Process Parameters of Titanium Grade 2 Sheets**

(2021) *Lecture Notes in Mechanical Engineering*, 23, pp. 297-312.

**DOI:** 10.1007/978-981-15-4739-3\_25

<sup>a</sup> Department of Mechanical Engineering, Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh, India

<sup>b</sup> Department of Production Engineering, National Institute of Technology, Tiruchirapalli, Tamil Nadu, India

**Abstract**

Incrementally forming sheet metals using a single ball-ended tool is one of steadfast areas in which industry is capable of focusing its attention in the future prospect appropriate to huge opportunities existing in automation. Because of low pace of production and action of spring back that effect the dimension, this process has not been adopted in industries. This technique can get better production rate by increasing the rotating spindle speed significantly. This present paper mainly reveals a multiple response optimization technique on process parameters of SPIF by using combination of entropy weight measurement method and similarity-based approach developed by Deng to find out the optimal parameters. Experiments for this study were designed using an orthogonal array, L27, according to Taguchi's method taking input factors namely the type of oil, feed rate, step depth, and tool diameter and spindle speed to obtain suitable responses. Optimum conditions were decided based on output response values and an experimental validation conducted using the above decided parameters. After validation, it has been found that there was an improvement of 9.80%. © 2021, Springer Nature Singapore Pte Ltd.

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76) Sukanya, Y.<sup>a</sup>, Uma, D.<sup>a</sup>, Nageswara Rao, P.A.<sup>b</sup>, Das, R.P.<sup>c</sup>

**A Novel Design of Multiband Monopole Antenna Loaded with Complementary Split Ring Resonator**

(2021) *Lecture Notes in Networks and Systems*, 134, pp. 281-291.

**DOI:** 10.1007/978-981-15-5397-4\_30

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<sup>b</sup> Gayatri Vidya Parishad College, Visakhapatnam, India

<sup>c</sup> Nadimpalli Satyanarayana Raju Institute of Technology, Sontyam, India

**Abstract**

A novel patch antenna having Complementary Split Ring Resonator (CSRR) with meandered Coplanar Waveguide (CPW) fed is proposed in this paper. A compact 3 band structure is developed by engraving slots and meandered CPW fed on the radiating element. A triple-band antenna with its reduced size is achieved by etching circles outside the patch along with CSRR slots and with Modified Ground Plane (MGP). The proposed antenna displays acceptable results at all values of resonance, in terms of enhanced bandwidth, return losses, VSWR. The simulated results for different designs are discussed and compared among them. Parametric study is also implemented for different ring widths and etching of circles with different radius on the proposed design. In order to validate the results CSRR permittivity and permeability characteristics are explained. The proposed antenna with greater qualities is suitable for C-band, S-band, Wireless Local Area Network (WLAN), WIMAX applications. © 2020, Springer Nature Singapore Pte Ltd.

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77)

Sharma, S.K.<sup>a</sup>, Khuntia, B.<sup>b</sup>

**Service layer security architecture for iot using biometric authentication and cryptography technique**

(2021) *Advances in Intelligent Systems and Computing*, 1171, pp. 291-301.

DOI: 10.1007/978-981-15-5400-1\_30

<sup>a</sup> Department of MCA, Vignan's Institute of Information Technology, Visakhapatnam, AP, India

<sup>b</sup> Department of Computer Science, Berhampur University, Berhampur, Odisha, India

**Abstract**

Data security and authentication mechanism is a very challenging job for smart devices. And more ever IOT is suffering with login and verification process. Here in our paper, we have focused on human characteristics base security system which cannot be pinched easily such as iris, thumb, palm, DNA and voice base authentication system. Using biometrics authentication theory, we have presented that how biometric systems are the boundless computational resources and prospective of flexibility, reliability and cost reduction along with high security performances resources. To maintain the security of biometric traits over the Internet channel, end user can apply cryptography algorithm such as Elgamal, MAC Omura, Cramer Shoup, RSA. As a final point, this paper is contributed for evidencing the strength of integrating the biometrics authentication system with cryptography techniques and its application on Internet base applications. In order to develop strong security, we have proposed integrated approach of three mechanism using biometrics, OTP and cryptography. The work is validated for biometrics through AVISPA (SPAN) security tool which is worldwide acceptable for approving the security architecture. © Springer Nature Singapore Pte Ltd 2021.

**Publisher:** Springer

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**Publication Stage:** Final

**Source:** Scopus

78) Malathi, S.<sup>a b</sup>, Aruna, S.<sup>c</sup>, Naik, K.S.<sup>d</sup>, Bharani, B.<sup>c</sup>

**Design of two slot multiple input multiple output uwb antenna for wimax and wlan applications**

(2021) *Advances in Intelligent Systems and Computing*, 1180 AISC, pp. 323-332.

DOI: 10.1007/978-3-030-49339-4\_33

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<sup>c</sup> Andhra University College of Engineering, Visakhapatnam, AP, India

<sup>d</sup> Vignan's Institute of Information Technology, Visakhapatnam, AP, India

**Abstract**

A compact and high effective two slot four element Ultra Wideband (UWB) Multiple input multiple output (MIMO) antenna is introduced in this paper. The proposed four element circular patch antenna of compact size with  $4 \times 4$  cm<sup>2</sup> is mounted on a cheaper cost FR4 substrate. Where the slots of U and J are embedded on a circular patch antenna for UWB applications ranging from 3.1 GHz to 11 GHz. To achieve better insertion loss and mutual coupling between circular elements in the entire UWB range a decoupling resonator are inserted on top and bottom layers of the antenna. The introduced circular MIMO antenna isolated with U and J slots which provide better frequency rejection for WiMAX and WLAN applications. The topside of substrate two symmetrical circular elements is placed orthogonally to other two elements is placed in the bottom side of the model. To study the simulation characteristics of the introduced MIMO antenna, CST Microwave Studio software is used. The proposed UWB MIMO antenna is with higher isolation and wider bandwidth, with a return loss and insertion loss less than  $-10$  dB over a desired frequency range 3.1 GHz to 11 GHz. The gain and directivity of the proposed circular MIMO antenna is 4.84 dBi and 5.319 dBi respectively. Envelop correlation coefficient, diversity gain is also calculated to widen the performance of MIMO antenna. © The Editor(s) (if applicable) and The Author(s), under exclusive license to Springer Nature Switzerland AG 2021.

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79)



Vinnakoti, S.<sup>a</sup>, Vasamsetti, V.L.<sup>b</sup>

**Performance Analysis of Multilevel Converter with Reduced Number of Active Switches**

(2021) *Lecture Notes in Electrical Engineering*, 655, pp. 525-537.

**DOI:** 10.1007/978-981-15-3828-5\_55

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<sup>b</sup> Department of Electrical and Electronics Engineering, Vignan's Institute of Information Technology (A), Visakhapatnam, Andhra Pradesh, India

**Abstract**

In a multi-level inverter, as the number of levels increases there exists the problem of an increase in the number of active power switches particularly in high-power and low-voltage applications such as wind energy conversion system, UPS and photovoltaic inverters. Hence, this paper presents a novel technology which is capable of providing the same or more number of levels as that of the fundamental with reduced number of active switches. The proposed topology utilizes a DC link which is the combination of number of DC cells. The DC interface provides a variable DC connection voltage along with the regulated path through floating capacitors and provides the required degree of control for all inverter phases. The numbers of levels of the converter are increased by connecting the DC cells in a multi-cell structure. The five-level reduced multi-level converter (RMC) is compared with various other topologies such as single-phase five-level and seven-level cascaded H-bridge inverter in terms of number of active switches, and the results are validated through the percentage total harmonic distortions. © 2020, Springer Nature Singapore Pte Ltd.

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80) Pavani, T.<sup>a</sup>, Naga Jyothi, A.<sup>b</sup>, Ushasree, A.<sup>a</sup>, Rajasree Rao, Y.<sup>c</sup>, Usha Kumari, C.<sup>a</sup>

**Design of Metamaterial Loaded Dipole Antenna for GPR**

(2021) *Lecture Notes in Electrical Engineering*, 655, pp. 71-77.

**DOI:** 10.1007/978-981-15-3828-5\_9

<sup>a</sup> Gokaraju Rangaraju Institute of Engineering & Technology, Hyderabad, India

<sup>b</sup> Vignan's Institute of Information Technology (A), Visakhapatnam, Andhra Pradesh, India

<sup>c</sup> LORDS Institute of Engineering Technology, Hyderabad, India

**Abstract**

A novel design of a dipole antenna for water detection is developed for ground-penetrating radar (GPR) system. The water decreasing day by day can increase the importance of the natural object water. Because of the degradation of surface water resources, the requirement for graphics of water resource is accumulated. GPR could be a promising machinery to find and establish formation of water. A dipole antenna incorporated with an inverted S-shaped metamaterial is proposed for GPR applications. The metamaterial-inspired antenna is designed on an FR4 substrate with overall dimensions of 100 × 300 mm. By placement of an inverted S-shaped metamaterial to induce additional resonance due to the occurrence of magnetic dipole moment, the antenna resonant frequency is changed from 1.88 to 1.71 GHz. The return loss and the VSWR plots have been studied along with the radiation patterns. © 2020, Springer Nature Singapore Pte Ltd.

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## Book Chapters

## Documents

- 1) Sristy, N.B.<sup>a</sup> , Kadari, P.<sup>a</sup> , Yadamreddy, H.<sup>b</sup>

**Query optimization strategies for big data**

(2021) *Handbook of Big Data Analytics: Methodologies*, pp. 125-156.

<sup>a</sup> Department of Computer Science and Engineering, National Institute of Technology Andhra Pradesh, Tadepalligudem, India

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**Abstract**

Query optimization for big data architectures like MapReduce, Spark, and Druid is challenging due to the numerosity of the algorithmic issues to be addressed. Conventional algorithmic design issues like memory, CPU time, IO cost should be analyzed in the context of additional parameters such as communication cost. The issue of data resident skew further complicates the analysis. This chapter studies the communication cost reduction strategies for conventional workloads such as joins, spatial queries, and graph queries. We review the algorithms for multi-way join using MapReduce. Multi-way  $\theta$ -join algorithms address the multi-way join with inequality conditions. As  $\theta$ -join output is much higher compared to the output of equi join, multi-way  $\theta$ -join further poses difficulties for the analysis. An analysis of multi-way  $\theta$ -join is presented on the basis of sizes of input sets, output sets as well as the communication cost. Data resident skew plays a key role in all the scenarios discussed. Addressing the skew in a general sense is discussed. Partitioning strategies that minimize the impact of skew on the skew in loads of computing nodes are also further presented. Application of join strategies for the spatial data has dragged the interest of researchers, and distribution of spatial join requires special emphasis for dealing with the spatial nature of the dataset. A controlled replicate strategy is reviewed to solve the problem of multi-way spatial join. Graph-based analytical queries such as triangle counting and subgraph enumeration in the context of distributed processing are presented. Being a primitive needed for many graph queries, triangle counting has been analyzed from the perspective of skew it brings using an elegant distribution scheme. Subgraph enumeration problem is also presented using various partitioning schemes and a brief analysis of their performance. © The Institution of Engineering and Technology 2021.

**Publisher:** Institution of Engineering and Technology

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**Publication Stage:** Final

**Source:** Scopus

- 2) Sasank, V.V.S.<sup>a</sup> , Singamaneni, K.K.<sup>b</sup> , Sampath Dakshina Murthy, A.<sup>c</sup> , Hasane Ahammad, S.K.<sup>a</sup>

**Executing CNN-LSTM algorithm for recognizable proof of cervical spondylosis infection on spinal cord MRI image: Machine learning image**

(2021) *Handbook of Research on Innovations and Applications of AI, IoT, and Cognitive Technologies*, pp. 468-484.

**DOI:** 10.4018/978-1-7998-6870-5.ch032

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**Abstract**

Various estimating mechanisms are present for evaluating the regional agony, neck torment, neurologic deficiencies of the sphincters at the stage midlevel of cervical spondylosis. It is necessary for the cervical spondylosis that the survey necessitates wide range of learning skills about the systemized life, experience, and ability of the expertise for learning the capability, life system, and experience. Doctors check the analysis of situation through MRI and CT scan, but additional interesting facts have been discovered in the physical test. For this, a programming approach is not available. The authors thereby propose a novel framework that accordingly inspects and investigates the cervical spondylosis employing computation of CNN-LSTM. Machine learning methods such as long short-term memory (LSTM) in fusion with convolution

neural networks (CNNs), a kind of neural network (NN), are applied to this strategy to evaluate for making the systematization in various applications. © 2021 by IGI Global.

**Publisher:** IGI Global

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**Source:** Scopus

- 3) Koppula, N.<sup>a</sup>, Sarada, K.<sup>b</sup>, Patel, I.<sup>c</sup>, Aamani, R.<sup>d</sup>, Saikumar, K.<sup>e</sup>

**Identification and recognition of speaker voice using a neural network-based algorithm: Deep learning**  
(2021) *Handbook of Research on Innovations and Applications of AI, IoT, and Cognitive Technologies*, pp. 278-289.

**DOI:** 10.4018/978-1-7998-6870-5.ch019

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<sup>e</sup> Mallareddy University, India

#### **Abstract**

This chapter explains the speech signal in moving objects depending on the recognition field by retrieving the name of individual voice speech and speaker personality. The adequacy of precisely distinguishing a speaker is centred exclusively on vocal features, as voice contact with machines is getting more pervasive in errands like phone, banking exchanges, and the change of information from discourse data sets. This audit shows the location of text-subordinate speakers, which distinguishes a solitary speaker from a known populace. The highlights are eliminated; the discourse signal is enrolled for six speakers. Extraction of the capacity is accomplished utilizing LPC coefficients, AMDF computation, and DFT. By adding certain highlights as information, the neural organization is prepared. For additional correlation, the attributes are put away in models. The qualities that should be characterized for the speakers were acquired and dissected utilizing back propagation algorithm to a format picture. © 2021 by IGI Global.

**Publisher:** IGI Global

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- 4) Ray, A., Tiwari, A., Chandra Mouli, D.

**Early screening of COVID-19 from chest CT using deep learning technique**  
(2021) *Lecture Notes on Data Engineering and Communications Technologies*, 64, pp. 217-239.

**DOI:** 10.1007/978-981-16-0538-3\_11

Department of Computer Science & Engineering, Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh, India

#### **Abstract**

Coronaviruses are mainly a big family of viruses that are highly capable of causing illness both in animals and humans. The scientific name of the most recently discovered corona virus disease is COVID-19. Most of the countries are performing the manual testing which is beneficial to know the actual situation, feature of the disease, so that appropriate decision can be taken. The main drawbacks of manual testing is that it is very expensive, sparse availability of testing kits, inefficient blood test, and minimum 5–6 h will require to generate the report of blood test. So in these circumstances, deep learning plays a crucial role to detect the positive cases as early as possible so as to prevent the further spread of this epidemic and provide fast and efficient treatment to the effected patients. The developed model consists of three groups: COVID-19, Influenza-A viral pneumonia, and healthy cases. Our proposed detection model got 98.78% accuracy. In this study, we propose a fast and efficient way to identify COVID-19 patients with multi-task deep learning (DL) methods from CT scan images. We have developed two models (a) Inception residual recurrent convolutional neural network with transfer learning (TL) approach for COVID-19 detection and (b) NABLA-N network model for segmenting the regions infected by COVID-19. © The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd. 2021.

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5) Keerthi Nayani, A.S.<sup>a</sup>, Sekhar, C.<sup>b</sup>, Srinivasa Rao, M.<sup>b</sup>, Venkata Rao, K.<sup>b</sup>

**Enhancing image resolution and denoising using autoencoder**

(2021) *Lecture Notes on Data Engineering and Communications Technologies*, 54, pp. 649-659.

**DOI:** 10.1007/978-981-15-8335-3\_50

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**Abstract**

Nowadays, in real time, image processing is involved in various sectors like security, health care, banking, and face recognition. While capturing an image, there is more chance of noise engaged with multiple aspects of the surroundings. To improve the quality of the image and to get better classification results, we need to clean the picture, which is called pre-processing of the image. For the past 30 years, there is tremendous research happening on image processing by many researchers. Deep learning-based autoencoders are producing better results with minimum loss. Image denoising can be achieved with autoencoder architecture. The denoised image is taken as input to the next level to improve the resolution. In this paper, we have considered the popular dataset fashion mnist to denoising the image, which includes the noise. We used back-to-back autoencoders to perform both image denoising and resolution enhancement. In this approach, we can do the pre-processing stage once on the dataset for both image denoising and enhancement of image resolution. We have used binary cross-entropy as loss function to evaluate the performance of the model, and later, we have focussed on improving the resolution to the image. Denoising of an image followed by resolution enhancements in the same process minimizes the time and pre-processing steps separately. © The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd. 2021.

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