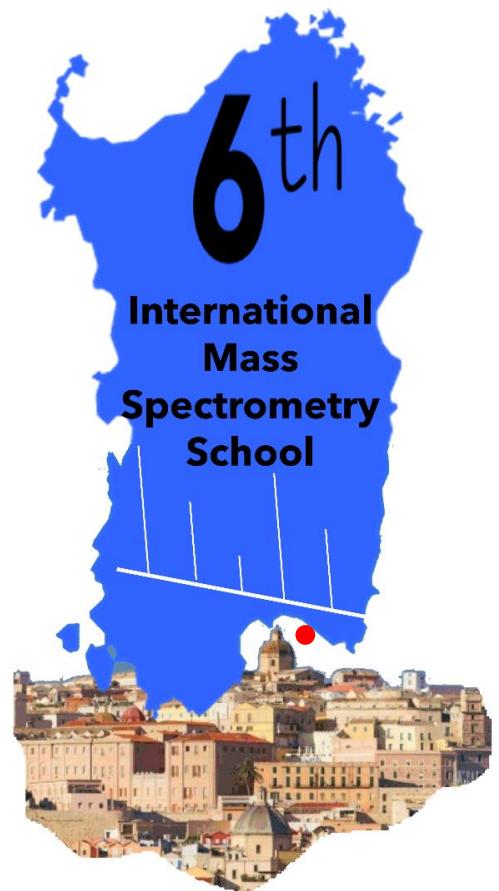




# 6<sup>th</sup> International Mass Spectrometry School

Fundamentals, advances, instrumentation, and applications



Cagliari, Sardinia (Italy)

September 17-22, 2023

<https://www.spettrometriadimassa.it/imss2023>



<https://www.spettrometriadimassa.it/imss2023>

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## **WELCOME FROM THE CHAIR AND THE SCIENTIFIC AND ORGANIZING COMMITTEES OF THE 6<sup>th</sup> IMSS**

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On behalf of the Division of Mass Spectrometry (DSM) of the Italian Chemical Society, we would like to welcome you to the 6<sup>th</sup> International Mass Spectrometry School (IMSS) 2023 in Cagliari, Sardinia, Italy.

The International Mass Spectrometry Foundation started this educational activity, aimed to enforce, promote and diffuse the culture of mass spectrometry, in 2013 with the first edition of this school held in Siena (Italy).

After ten years, moving in Europe and out of Europe (Siena (Italy), Natal (Brazil), Dubrovnik (Croatia), Sitges (Spain) and Belfast (Ireland)) the school comes back to Italy in the town of Cagliari, in the magnificent island of Sardinia to celebrate its 10<sup>th</sup> anniversary.

Many students attended the various editions of IMSS and each completely fulfilled its aims: give a good education, establish and favorite students-tutors and students-students interactions, high level tutors, informal and friendly atmosphere, great social events.

We think that also IMSS 2023 will be a useful occasion to enjoy science, learn or refresh principles and main applications of mass spectrometry with a look at the future, networking among participants and with tutors, enjoy ideas, suggestions by students, taste delicious food, experience the real local life in Cagliari, a very nice and lovely town in South Sardinia!

The city has a heritage of great importance, it's a green, small, clean and safe city with a Mediterranean climate. The international airport, very close to downtown, connects Cagliari to many towns in Europe.

We do wish IMSS 2023 will be an important experience for young scientists, not only from a scientific and cultural standpoint, but also for relationships, networking, talks, social events in the special atmosphere of Cagliari and Sardinia.

With the support of everybody, we do hope that IMSS 2023 will be a successful, amazing and unforgettable school!!



Gianluca Giorgi (IMSS 2023 chair) and  
the IMSS 2023 scientific and organizing committees

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## WELCOME FROM THE IMSF PRESIDENT

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*It gives me great pleasure to invite you to join us at the 6<sup>th</sup> International Mass Spectrometry School in Cagliari, Sardinia for the 17-22 September 2023. Returning to Italy for the 10<sup>th</sup> anniversary of this flagship IMSF activity offers a unique opportunity to advance your MS knowledge.*

*Education is at the heart of the professional development the IMSF aims to stimulate. Come to Cagliari to learn from and connect with mass spectrometrists across the globe.*

*The exciting program of lectures and workshops covers the breadth of mass spectrometry, from fundamentals to applications. Interlaced with collaborative problem solving sessions and outstanding networking opportunities for all delegates, students and tutors alike it is one of the highlights of the 2023 mass spectrometry calendar*



Ron M.A. Heeren (IMSF President)

## **IMSF EXECUTIVE COMMITTEE, IMSF NATIONAL AFFILIATES**

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### **Executive Committee**

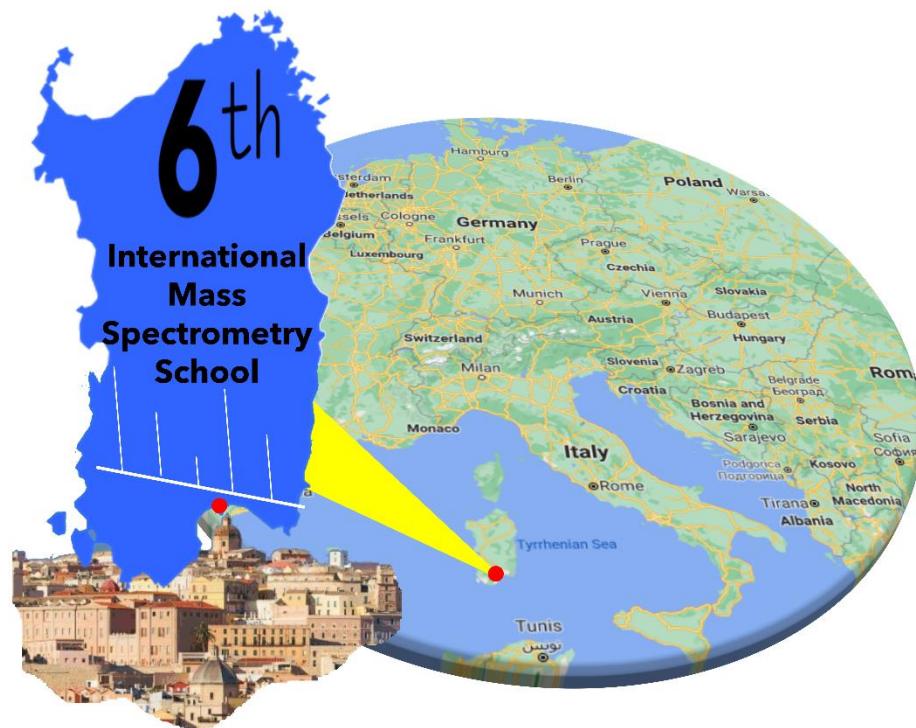
|                               |  |                 |
|-------------------------------|--|-----------------|
| ✓ Ron M. A. Heeren            | President  | The Netherlands |
| ✓ Stephen Blanksby            | Vice President   | Australia       |
| ✓ John Langley                | Past President   | UK              |
| ✓ Maarten Altelaar            | Treasurer  | The Netherlands |
| ✓ Martina Marchetti-Deschmann | Secretary  | Austria         |
| ✓ Diego Cobice                | Educational Officer                                    | Ireland         |
| ✓ Gavin Reid                  | Vice-President (Conference)<br>Chair IMSC 2024         | Australia       |
| ✓ Gianluca Giorgi             | Vice-President (Education)<br>Chair IMSS 2023          | Italy           |
| ✓ Julia Chamot-Rooke          | Region A Repres. (Europe/Africa)                       | France          |
| ✓ Yu Xia                      | Region B Repres. (Asia/Oceania)                        | China           |
| ✓ Vicki Wysocki               | Region C Repres. (North America)                       | USA             |
| ✓ Rosa Erra-Balsells          | Region D Representative<br>(Central and South America) | Argentina       |

### **National Affiliates**

- ✓ Argentina – Rosa Erra Balsells
- ✓ Australia/New Zealand – Tara Pukala
- ✓ Austria – Günter Allmaier
- ✓ Belgium – Jeff Rozenski
- ✓ Brazil – Marcos Eberlin
- ✓ Canada – Derek Wilson
- ✓ Czech Republic – Jan Preisler
- ✓ Denmark – Steen Pontoppidan
- ✓ Finland – Olli Laine
- ✓ France – Isabelle Fournier
- ✓ Germany – Thorsten Benter
- ✓ Greece – Despina Tsipi
- ✓ Hong Kong – Andy Siu
- ✓ Hungary – Karoly Vekey
- ✓ India – Rajesh Kumar Vatsa
- ✓ Ireland – Mike Kinsella
- ✓ Israel – Yariv Brotman
- ✓ Italy – Gianluca Giorgi
- ✓ Japan – Michisato Toyoda
- ✓ Korea – Byungjoo Kim
- ✓ Malaysia - Low Teck Yew
- ✓ The Netherlands – Anouk Rijssen
- ✓ Norway – Leon Reubaert
- ✓ Peoples Rep. of China – Yuanjiang Pan
- ✓ Poland – Katarzyna Pawlak
- ✓ Portugal – Maria Helena Florencio
- ✓ Romania – Zaharie Moldovan
- ✓ Russia – Albert Lebedev
- ✓ Singapore – Lin Qingsong
- ✓ Slovenia – Helena Prosen
- ✓ South Africa – Egmont Rohwer
- ✓ Spain – Estaban Abad
- ✓ Sweden – Jonas Bergquist
- ✓ Switzerland – Yury Tsybin
- ✓ Taiwan – Yi-Sheng Wang
- ✓ United Kingdom – Neil Oldham
- ✓ United States of America – Julia Laskin
- ✓ Ukraine – Marina Kosevich

## INTERNATIONAL MASS SPECTROMETRY SCHOOLS

|   |      |
|---|------|
| 1 <sup>st</sup> IMSS – Siena, Italy       | 2013 |
| 2 <sup>nd</sup> IMSS – Natal, Brazil      | 2015 |
| 3 <sup>rd</sup> IMSS – Dubrovnik, Croatia | 2017 |
| 4 <sup>th</sup> IMSS – Sitges, Spain      | 2019 |
| 5 <sup>th</sup> IMSS – Belfast, Ireland   | 2022 |



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**6<sup>th</sup> IMSS SCIENTIFIC COMMITTEE**

---



**Gianluca Giorgi**  
Univ. of Siena



**Cecilia Bergamini**  
ARPAE, Bologna



**Giuliana Bianco**  
Univ. of Basilicata



**Donatella Caruso**  
Univ. of Milano



**Riccardo Flamini**  
CREA-VE, Conegliano



**Roberta Galarini**  
IZSUM, Perugia



**Fulvio Magni**  
Univ. of Milano Bicocca



**Luciano Navarini**  
illycaffè, Trieste

---

## 6<sup>th</sup> IMSS ORGANIZING COMMITTEE

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**Michela Begala**  
Univ. of Cagliari



**Pierluigi Caboni**  
Univ. of Cagliari



**Luigi Atzori**  
Univ. of Cagliari



**Tiziana Cabras**  
Univ. of Cagliari



**Giovanna Lucia Delogu**  
Univ. of Cagliari



**Giorgia Sarais**  
Univ. of Cagliari



**Carlo Tuberoso**  
Univ. of Cagliari



**Pietro Urgeghe**  
Univ. of Sassari

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## 6<sup>th</sup> IMSS TUTORS

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|                                    |                              |                 |
|------------------------------------|------------------------------|-----------------|
| <b>Carlos Afonso</b>               | Université de Rouen          | France          |
| <b>Giuliana Bianco</b>             | Univ. of Basilicata          | Italy           |
| <b>Pierluigi Caboni</b>            | University of Cagliari       | Italy           |
| <b>Diego Cobice</b>                | Ulster University            | Ireland         |
| <b>Chiara Cordero</b>              | Univ. of Torino              | Italy           |
| <b>Valérie Gabelica</b>            | Université de Bordeaux       | France          |
| <b>Pascal Gerbaux</b>              | University of Mons           | Belgium         |
| <b>Gianluca Giorgi</b>             | University of Siena          | Italy           |
| <b>Ron M. A. Heeren</b>            | Maastricht University        | The Netherlands |
| <b>Giancarlo Ia Marca</b>          | University of Florence       | Italy           |
| <b>John Langley</b>                | University of Southampton    | UK              |
| <b>Martina Marchetti-Deschmann</b> | Technischen Universität Wien | Austria         |
| <b>Giuseppe Paglia</b>             | University of Milano Bicocca | Italy           |
| <b>Michele Suman</b>               | Barilla, Parma               | Italy           |
| <b>Vicki Wysocki</b>               | Ohio State University        | USA             |



## ECTS CREDITS

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The 6<sup>th</sup> IMSS will give ECTS credits to students who passed the examination test.

According to the Italian rules, 1 ECTS credit = 25 working hours, a participant could be eligible for 1.5 ECTS credits.

The ECTS credits will be reported in the final Certificate of Attendance with the Exam outcome together with the actual number of the working hours, so to facilitate conversions in different countries.

---

## NICO NIBBERING TRAVEL AWARDS

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The International Mass Spectrometry Foundation established the Nico Nibbering Travel Awards to support students participation in the 6<sup>th</sup> IMSS.

Prof. Nibbering was a passionate advocate for young scientists and supported the education and career-development of mass spectrometrists from many countries around the world through his mentorship and the delivery of education and workshop programs.

The Nico Nibbering Student Travel Awards serve to honor his many contributions to international mass spectrometry and build on his legacy of supporting young scientists in this field.

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## BEST ORAL AWARDS

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to be assigned to two young researchers under 35 years of age presenting an oral communication.

Each award consists of a certificate and an expenses contribution.

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## BEST POSTER AWARD

---



to be assigned to a young researcher under 35 years of age presenting a poster communication.

The award consists of a certificate and a 2024 online subscription to JMS.

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## BEST MS SOLVER AWARD

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to be assigned to the Best MS Solver.  
The award consists of a certificate and a gift.

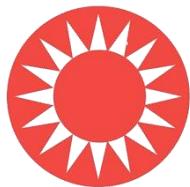
## PATRONAGES



Università degli Studi di Cagliari



con il patrocinio  
**uniss**  
UNIVERSITÀ DEGLI STUDI DI SASSARI



**SARDIGNA CHIRCAS  
SARDEGNA RICERCHE**



ISTITUTO  
ZOOPROFILATTICO  
SPERIMENTALE  
DELLA SARDEGNA  
“G. Pegreffi”



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## MEDIA PARTNERS

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## SPONSORS

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Trusted Answers



## GENERAL INFORMATION

The IMSS 2023 is held in Cagliari, the most important city of Sardinia located in its Southern part.

The city has a soul consisting of a millenary history, culture, nature, beach tourism, charmed by the views of Castello, the ramparts and the Roman remains, the Sardinian sea, as well as by the dynamism of a surprisingly lively city.

### **School venue**

The IMSS 2023 venue is

**Hotel Regina Margherita \*\*\*\***

viale Regina Margherita 44, Cagliari



## VISIT SARDINIA



Discover Sardinia, its landscapes, amazing beaches, delicious food & wines

**SARDEGNA Turismo**

<https://www.sardegnaturismo.it/en>

## SOCIAL EVENTS

---

|                           |  |
|---------------------------|--|
| <b>SUNDAY</b> Sept. 17    | h. 8:30 p.m.<br><b>Welcome cocktail at TERRAPIENO CLUB HOUSE</b><br>Viale Regina Elena 14, Cagliari                        |
| <b>MONDAY</b> Sept. 18    | h. 6:00 p.m.<br><b>Urban trekking in Cagliari:</b> discover the beautiful and sneaking corners of the town.<br>Guided tour |
| <b>TUESDAY</b> Sept. 19   | h. 7:30 p.m.<br><b>Dinner &amp; live music at<br/>CAPOLINEA BEACH POETTO</b><br>Lungomare Poetto – Cagliari                |
| <b>WEDNESDAY</b> Sept. 20 | h. 2:15 p.m.<br><b>All to the beach!!</b> Enjoy the magnificence of sand and sea of the Sardinia beaches.<br>Travel by bus |
| <b>THURSDAY</b> Sept. 21  | h. 8:00 p.m.<br><b>Social dinner at AQUILA CLUB</b><br>Calata dei Trinitari – Cagliari                                     |

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## PROGRAM

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### **Sunday, September 17**

|       |   |            |
|-------|---|------------|
| 17:30 | Registration  |            |
| 18:15 | Opening session   |            |
| 18:45 | Mass spectrometry. Where is it from? Where it is and where is it going? | J. Langley |
| 20:00 | <i>End of session</i>   |            |
| 20:30 | <i>Welcome cocktail</i>   |            |

### **Monday, September 18**

#### ***Ionization techniques: volatile molecules***

|       |  |            |
|-------|--|------------|
| 8:30  | Mass spectrometry: an introduction   | J. Langley |
| 9:30  | Ionization of volatile molecules: electron ionization (EI), chemical ionization (CI). Fragmentation processes, energetics (Part 1) | G. Giorgi  |
| 10:15 | <i>Coffee break &amp; poster session</i>   |            |
| 11:00 | Ionization of volatile molecules: electron ionization (EI), chemical ionization (CI). Fragmentation processes, energetics (Part 2) | G. Giorgi  |
| 12:00 | Study of complex mixtures of volatile molecules: GC, fast GC, GCxGC  | C. Cordero |
| 13:15 | <i>Buffet lunch</i>  |            |

#### ***Ionization techniques: polar molecules***

|       |  |            |
|-------|--|------------|
| 14:30 | Soft ionization techniques: ESI, DESI, APCI. Ambient mass spectrometry. Mechanisms of ion production         | C. Afonso  |
| 16:00 | <i>Coffee break &amp; poster session</i>   |            |
| 16:30 | Study of complex mixtures of polar molecules: HPLC, UHPLC, LC x LC   | J. Langley |
| 18:00 | <i>End of session</i>  |            |
| 18:00 | <i>Urban trekking in Cagliari: discover the beautiful and sneaking corners of the town .....</i> Guided tour |            |

**Tuesday, September 19*****MALDI. Analyzers (I)***

---

|       |  |                        |
|-------|--|------------------------|
| 8:30  | Matrix-assisted laser desorption ionization,<br>MALDI-2. Mechanisms of ion production                | R.M.A. Heeren          |
| 9:30  | Analyzers (I). Ion separation in space: beam<br>instruments: sectors, quadrupole, time-of-<br>flight | M. Marchetti-Deschmann |
| 10:30 | <i>Coffee break &amp; poster session</i>   |                        |

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***Analyzers (II). High resolution, accurate mass measurements***

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|       |  |           |
|-------|--|-----------|
| 11:00 | Analyzers (II). Ion separation in time: ion<br>traps, FT-ICR, Orbitrap                         | C. Afonso |
| 12:00 | High resolution mass spectrometry, accurate<br>mass measurements. Examples and<br>applications | G. Bianco |
| 13:00 | <i>Buffet lunch</i>  |           |

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***Tandem mass spectrometry***

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|       |  |            |
|-------|--|------------|
| 14:30 | Tandem Mass Spectrometry (MS/MS) and<br>MS <sup>n</sup> : ion activation   | P. Gerbaux |
| 16:30 | <i>Coffee break &amp; poster session</i>                                   |            |
| 17:15 | Tandem Mass Spectrometry (MS/MS) and<br>MS <sup>n</sup> : ion dissociation | P. Gerbaux |
| 18:30 | <i>End of session</i>  |            |
| 19:30 | <i>Poetto beach: dinner and live music!</i>                                |            |

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**Wednesday, September 20*****Fragmentation/decomposition reactions. Artificial intelligence in MS. Proteomics***

|       |  |            |
|-------|--|------------|
| 8:30  | Examples of fragmentation/decomposition reactions  | D. Cobice  |
| 10:00 | <i>Coffee break &amp; poster session</i>   |            |
| 10:30 | Artificial intelligence in MS  | C. Cordero |
| 11:45 | Bottom-up, top-down, and complex-down proteomics   | V. Wysocki |
| 13:00 | <i>Buffet lunch</i>  |            |
| 14:15 | <i>All to the beach!</i> Travel by bus<br>Enjoy the magnificence of sand and sea of the Sardinia beaches |            |
| 19:00 | <i>Go back to Cagliari</i>   |            |



**Thursday, September 21*****MS Imaging, ion mobility***


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8:30 Imaging mass spectrometry R.M.A. Heeren

---

9:45 Ion mobility V. Gabelica

---

11:00 *Coffee break & poster session*

***Do it by yourself !***


---

11:30 Exercises on MS, HRMS and MS/MS interpretation, mechanisms, ..... D. Cobice, V. Gabelica, G. Giorgi

**Award for the best MS solver!**

---

13:00 *Buffet lunch*

***Short orals. Workshop. Problem solving. MS in lipidomics & metabolomics***


---

14:20 Short orals by students:

- OR1 P1 **Decoding the key aroma compounds of cocoa using mass spectrometry**  
Amandine André, Elodie Gillich, Lisa Ullrich, Irene Chetschik  
 ZHAW Zürich University of Applied Sciences, School of Life Sciences and Facility Management, ILGI Institute of Food and Beverage Innovation, Research Group Food Chemistry, Wädenswil, Switzerland
- 
- OR2 P10 **MALDI 1 & 2 MS imaging of lipid double-bond positional isomers using off-line ozonolysis**  
D. Bezdeková,<sup>1</sup> J. Preisler,<sup>1</sup> M. Hendrych,<sup>2</sup> K. Dreisewerd,<sup>3</sup> A. Bednářík<sup>1</sup>  
<sup>1</sup> Chemistry Department, Faculty of Natural Sciences, Masaryk University, Czech Republic  
<sup>2</sup> First Pathological Department, St. Anne's University Hospital Brno, Czech Republic  
<sup>3</sup> Institute of Hygiene and Interdisciplinary Center for Clinical Research (IZKF), University of Münster, Germany
- 
- OR3 P13 **The quest for the unambiguous identification of β-naphthol and triarylcarbonium colorants by MeV-SIMS - Procedures for mass calibration & data evaluation**  
Teodora Raicu,<sup>1</sup> Matea Krmpotić,<sup>2</sup> Zdravko Siketić,<sup>2</sup> Iva Bogdanović-Radović,<sup>2</sup> Dubravka Jembrih-Simbürger<sup>1</sup>  
<sup>1</sup> Institute for Natural Sciences and Technology in the Arts (INTK), Academy of Fine Arts Vienna, Vienna, Austria  
<sup>2</sup> Ruđer Bošković Institute, Zagreb, Croatia
- 
- OR4 P15 **Structural characterization of mobility-selected ions: combining TIMS with IR ion spectroscopy on an FT-ICR MS platform**  
Lara van Tetering, Kas Houthuijs, Jelle Schuurman, Jonathan Martens, Giel Berden, Jos Oomens  
 FELIX Laboratory, Institute for Molecules and Materials, Radboud University, Nijmegen, Netherlands

**OR5 P26 Leveraging LC-TIMS-QTOFMS for addressing analytical challenges in chemical exposome studies**

*Konstantina S. Diamanti,<sup>1</sup> Dimitrios E. Damalas,<sup>1</sup> Georgios O. Gkotsis,<sup>1</sup> Eleni I. Panagopoulou,<sup>1</sup> Maria-Christina Nika,<sup>1</sup> Carsten Baessmann,<sup>2</sup> Bob Galvin,<sup>2</sup> Nikolaos S. Thomaidis<sup>1</sup>*

<sup>1</sup> Laboratory of Analytical Chemistry, Department of Chemistry, National and Kapodistrian University of Athens, Panepistimiopolis Zografou, Athens, Greece

<sup>2</sup> Bruker Daltonics GmbH & Co. KG, Bremen, Germany

---

**OR6 P28 Saliva peptidome profiling in glioblastoma multiforme brain tumour by HPLC-MS top-down platform**

*Alexandra Muntiu,<sup>1</sup> Diana Valeria Rossetti,<sup>2</sup> Federica Vincenzoni,<sup>1,3</sup> Irene Messana,<sup>2</sup> Massimo Castagnola,<sup>4</sup> Giuseppe La Rocca,<sup>3,5</sup> Alessandro Olivi,<sup>3,5</sup> Andrea Urbani,<sup>1,3</sup> Giovanni Sabatino,<sup>3,5</sup> Claudia Desiderio<sup>2</sup>*

<sup>1</sup> Dipartimento di Scienze Biotecnologiche di Base, Cliniche Intensivologiche e Perioperatorie, Università Cattolica del Sacro Cuore, Rome, Italy

<sup>2</sup> Istituto di Scienze e Tecnologie Chimiche "Giulio Natta", Consiglio Nazionale delle Ricerche, Rome, Italy

<sup>3</sup> Fondazione Policlinico Universitario A. Gemelli IRCCS, Università Cattolica del Sacro Cuore, Rome, Italy

<sup>4</sup> Centro Europeo di Ricerca sul Cervello-IRCCS Fondaz. Santa Lucia, Rome, Italy

<sup>5</sup> Institute of Neurosurgery, Fondazione Policlinico Universitario A. Gemelli IRCCS, Catholic University, Rome, Italy

---

**OR7 P32 Metabolomics applied to discover prognostic markers in human heart transplantation**

*E.C. Montatixe Fonseca,<sup>1</sup> M.C. Mimmi,<sup>3</sup> A. Corazza,<sup>4</sup> M. Belliato,<sup>2</sup> C. Pellegrini,<sup>1</sup> S. Pelenghi<sup>1</sup>*

<sup>1</sup> Cardiac Surgery Unit 1, IRCCS San Matteo Hospital Foundation, Pavia, Italy

<sup>2</sup> Anesthesiology and Intensive Care Unit 2, IRCCS San Matteo Hospital Foundation, Pavia, Italy

<sup>3</sup> Department of Molecular Medicine, University of Pavia, Italy

<sup>4</sup> Department of Medical Area, University of Udine, Italy

---

**OR8 P45 A mass spectrometry-based multi-omics approach to explore the mechanisms of drug resistance in methicillin-resistant *Staphylococcus aureus***

*Pedro C. Rosado,<sup>1</sup> M. Matilde Marques,<sup>1,2</sup> Gonçalo C. Justino<sup>1</sup>*

<sup>1</sup> Centro de Química Estrutural - Institute of Molecular Sciences, Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal

<sup>2</sup> Departamento de Engenharia Química, Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal

---

**OR9 P51 MS fingerprinting of cyclic modified peptides and proteins with chloromethyl acryl reagents**

*Maria J. S. A. Silva,<sup>1,3</sup> Lujuan Xu,<sup>1,2</sup> Pedro M. P. Gois,<sup>3</sup> Seah Ling Kuan,<sup>1,2</sup> Tanja Weil<sup>1,2</sup>*

<sup>1</sup> Max-Planck Institute for Polymer Research, Mainz, Germany

<sup>2</sup> Institute of Inorganic Chemistry I, Ulm University, Ulm, Germany

<sup>3</sup> Research Institute for Medicines (iMed.ULisboa), Faculty of Pharmacy, Universidade de Lisboa, Lisbon, Portugal

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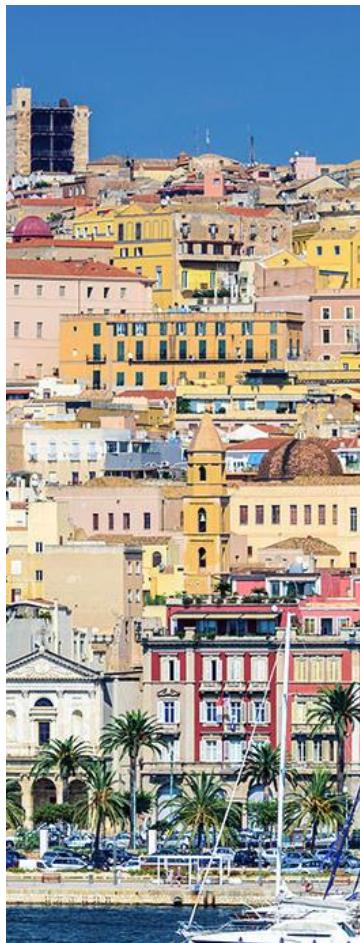
**OR10 P53 A spatial multi-omics investigation into spinal cord remodeling in mouse mutant strains with altered myelin basic protein abundance**

*Rachel Pryce,<sup>1</sup> Hooman Bagheri,<sup>2</sup> Alan C. Peterson,<sup>2</sup> Pierre Chaurand<sup>1</sup>*

<sup>1</sup> Department of Chemistry, Université de Montréal, Montreal, Quebec, Canada

<sup>2</sup> Department of Neurology and Neurosurgery, McGill University, Montreal, Quebec, Canada

|       |  |
|-------|--|
| 16:00 | Workshop with Companies                  |
| 16:40 | Problem solving                          |
| 17:30 | <i>Coffee break &amp; poster session</i> |
| 18:00 | MS in lipidomics & metabolomics          |
|       | P. Caboni                                |
| 19:30 | <b>Awards for the best orals!</b>        |
| 19:40 | <i>End of session</i>                    |
| 20:30 | <i>Social dinner</i>                     |



**Friday, September 22*****Quantitation; biomedical applications; data analysis; MS in food***

|       |  |                        |
|-------|--|------------------------|
| 8:30  | Quantitation by MS and MSn                       | M. Marchetti-Deschmann |
| 9:30  | Biomedical applications of MS: newborn screening | G. la Marca            |
| 10:30 | Data analysis                                    | G. Paglia              |
| 11:30 | <i>Coffee break &amp; poster session</i>         |                        |
| 12:00 | Food authentication and traceability             | M. Suman               |
| 13:00 | <b>Award for the best poster!</b>                |                        |
| 13:10 | ECTS test  |                        |
| 13:30 | <i>Arrivederci!</i>                              |                        |



## LESSONS DOWNLOAD

---

J. Langley



J. Langley\_1



G. Giorgi



C. Cordero



C. Afonso



J. Langley\_2



R.M.A. Heeren



M. Marchetti



C. Afonso



G. Bianco



P. Gerbaux



D. Cobice



C. Cordero



V. Wysocki



R.M.A. Heeren



V. Gabelica



Exercises



P. Caboni



M. Marchetti



G. La Marca



G. Paglia



M. Suman



## POSTER SESSIONS

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**Poster P1-P28**    **set up:** MONDAY 8:00-8:30 a.m. **Removal:** TUESDAY 6:30 p.m.

**Poster P29-P55**    **set up:** WEDNESDAY 8:00-8:30 a.m. **Removal:** FRIDAY 1:00 p.m.

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## POSTER COMMUNICATIONS

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**P1 Decoding the key aroma compounds of cocoa using mass spectrometry**

Amandine André, Elodie Gillich, Lisa Ullrich, Irene Chetschik

ZHAW Zürich University of Applied Sciences, School of Life Sciences and Facility Management, ILGI Institute of Food and Beverage Innovation, Research Group Food Chemistry, 8820 Wädenswil, Switzerland

**P2 Antioxidant compounds produced by Maillard reaction between glucose and glycine: HRMS identification**

Sara Bolchini,<sup>1</sup> Ksenia Morozova,<sup>1</sup> Lucrezia Angeli,<sup>1</sup> Tiny van Boekel,<sup>2</sup> Matteo Scampicchio <sup>1</sup>

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<sup>2</sup> Food Quality & Design, Wageningen University & Research, P.O. Box 17, 6700 AA Wageningen, The Netherlands

**P3 Method development for the determination of aflatoxin M1, aflatoxicol and sterigmatocystin in sheep, goat and buffalo cheeses in LC-MS/MS**

Stefano Sdogati,<sup>1</sup> Ivan Pecorelli,<sup>1</sup> Roberto Condoleo,<sup>2</sup> Guglielmo Militello,<sup>2</sup> Ilaria Di Marco Pisciottano,<sup>3</sup> Sara Lambiase,<sup>3</sup> Carmela Rossini,<sup>3</sup> Stefania Massafra,<sup>4</sup> Elena Torres,<sup>4</sup> Maurizio Cossu,<sup>5</sup> Giovanni Lo Cascio,<sup>6</sup> Antonio Macaluso,<sup>6</sup> Licia Pantano,<sup>6</sup> Bruno Neri,<sup>2</sup> Pasquale Gallo,<sup>3</sup> Marilena Gili,<sup>4</sup> Andrea Sanna,<sup>5</sup> Antonio Vella,<sup>6</sup> Carlo Boselli <sup>2</sup>

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<sup>6</sup> Istituto Zooprofilattico Sperimentale della Sicilia, Via Gino Marinuzzi, 3 - 90129 Palermo

**P4 Characterization of the volatile compounds in two monovarietal wines from different worldwide origins using HS-SPME- GCxGC-ToF/MS**

Aakriti Darnal,<sup>1,2</sup> Simone Poggesi,<sup>1,2</sup> Edoardo Longo,<sup>1,2</sup> Emanuele Boselli <sup>1,2</sup>

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**P5 Structural elucidation of agrochemical derivatives using infrared ion spectroscopy**

T. van Wieringen,<sup>1</sup> M. J.A. Vink,<sup>1</sup> G. Berden,<sup>1</sup> J. Oomens,<sup>1</sup> S.J. Perry,<sup>2</sup> A. Chantzis,<sup>2</sup> J. Martens <sup>1</sup>

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**P6 Inductively Coupled Plasma Mass Spectrometry in food analysis. Trace and toxic elements for food authentication and valorisation**

A. Mara, I. Langasco, M.I. Pilo, N. Spano, G. Sanna

Department of Chemical, Physical, Mathematical and Natural Sciences, University of Sassari, Italy

**P7 Use of mass spectrometry to characterise the unique polyphenolic profile of PIWI wines**

Gavin Duley,<sup>1,2</sup> Adriana Teresa Ceci,<sup>1,2</sup> Edoardo Longo,<sup>1,2</sup> Emanuele Boselli<sup>1,2</sup>

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**P8 Determination of tropane alkaloids in food matrices using LC-UHPLC-MS/MS**

Larissa Caminhas, Susanne Rath

University of Campinas (UNICAMP) - Brazil

**P9 Gas chromatography-mass spectrometry method for the quantitative determination of ethylene and diethylene glycols contamination in cough syrups**

Monerah A. Altamimy, Yahya M. Alshehri, Norah Altalyan, Shaikah Alzaid

Reference Laboratory for Medicines and Cosmetics, Research and Laboratories sector  
Saudi Food and Drug Authority, Riyadh, Saudi Arabia

**P10 MALDI 1 & 2 MS imaging of lipid double-bond positional isomers using off-line ozonolysis**

D. Bezdeková,<sup>1</sup> J. Preisler,<sup>1</sup> M. Hendrych,<sup>2</sup> K. Dreisewerd,<sup>3</sup> A. Bednářík<sup>1</sup>

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<sup>3</sup> Institute of Hygiene and Interdisciplinary Center for Clinical Research (IZKF), University of Münster, Germany

**P11 Investigating the potential of novel polymer-based MALDI matrices for the detection of compounds of low molecular weight by leveraging MALDI-HRMS analytical workflows**

E. Aleiferi,<sup>1</sup> M. Tsakanika,<sup>2</sup> D. E. Damalas,<sup>1</sup> A. Kritikou,<sup>1</sup> G. Sakellariou,<sup>2</sup> N. S. Thomaidis<sup>1</sup>

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**P12 Effective temperature of porous silicon substrates in LDI-MS in function of etching parameters**

Clara Whyte Ferreira,<sup>1,2</sup> Bastien Cabrera-Tejera,<sup>1</sup> Wendy Müller,<sup>1</sup> Yannick Coffinier,<sup>3</sup> Romain Tuyaerts,<sup>2</sup> Gilles Scheen,<sup>2</sup> Gauthier Eppe,<sup>1</sup> Edwin De Pauw<sup>1</sup>

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<sup>3</sup> Univ. Lille, CNRS, UMR 8520 - IEMN, Lille, France

**P13 The quest for the unambiguous identification of β-naphthol and triarylcarbonium colorants by MeV-SIMS - Procedures for mass calibration & data evaluation**

Teodora Raicu,<sup>1</sup> Matea Krmpotić,<sup>2</sup> Zdravko Siketić,<sup>2</sup> Iva Bogdanović-Radović,<sup>2</sup> Dubravka Jembrih-Simbürger<sup>1</sup>

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<sup>2</sup> Ruđer Bošković Institute, Bijenička cesta 54, Zagreb, HR - 10000, Croatia

**P14 Preferred protonation site of aromatic amines: elucidation via IR ion spectroscopy**

Laura Finazzi,<sup>1</sup> Jonathan Martens,<sup>1</sup> Giel Berden,<sup>1</sup> Jos Oomens <sup>1,2</sup>

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<sup>2</sup> van 't Hoff Institute for Molecular Sciences University of Amsterdam Amsterdam, The Netherlands

**P15 Structural characterization of mobility-selected ions: combining TIMS with IR ion spectroscopy on an FT-ICR MS platform**

Lara van Tetering, Kas Houthuijs, Jelle Schuurman, Jonathan Martens, Giel Berden, Jos Oomens

FELIX Laboratory, Institute for Molecules and Materials, Radboud University, Nijmegen, Netherlands

**P16 Mass spectrometry and photochemical study of photoisomerization and thermal back-isomerization of heteroaryl azobenzenes anchored on peptoids for the chemical storage of solar energy**

Gwendal Henrard,<sup>1,2</sup> Thomas Robert,<sup>1</sup> Benjamin Tassignon,<sup>1,2</sup> Julien De Winter,<sup>1</sup> Jérôme Cornil,<sup>2</sup> Pascal Gerbaux<sup>1</sup>

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**P17 21-T FT-ICR MS: chemical and structural characterization of complex peat- burning particulate matter**

E. Schneider,<sup>1,2</sup> C. P. Rüger,<sup>1,2</sup> M. L. Chacón-Patiño,<sup>3</sup> M. Somero,<sup>4</sup> M. Ruppel,<sup>5</sup> M. Ihälainen,<sup>4</sup> K. Köster,<sup>4</sup> O. Sippula,<sup>4</sup> H. Czech,<sup>1,6</sup> R. Zimmermann <sup>1,2,6</sup>

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<sup>6</sup> Joint Mass Spectrometry Centre, Cooperation Group "Comprehensive Molecular Analytics" (CMA), Helmholtz Munich, 81479 Munich, Germany

**P18 Contaminants of emerging concern in drinking water: integrated chemical and bioanalytical tools**

M. Profita,<sup>1</sup> P. Valbonesi,<sup>1</sup> I. Vasumini,<sup>2</sup> E. Fabbri<sup>1</sup>

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<sup>2</sup> Romagna Acque Società delle Fonti SpA, Ravenna, Italy

**P19 Detection of pesticides using Multi-Scheme Chemical Ionization (MION) Inlet and Orbitrap mass spectrometer with a filter desorbing unit**

Fariba Partovi,<sup>1,2</sup> Joona Mikkilä,<sup>1</sup> Jyri Mikkilä,<sup>1</sup> Tuija Jokinen,<sup>4</sup> Aleksei Shcherbinin,<sup>1</sup> Matti Rissanen <sup>2,3</sup>

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**P20 Structural characterisation of glyphosate and AMPA metal complexes using ion mobility-mass spectrometry**

O. Rusli, O. H. Lloyd Williams, N. J. Rijs

School of Chemistry, UNSW Sydney, Australia

**P21 Unveiling the chemical universe of PFAS in biota using a combined targeted and untargeted workflow, utilizing LC – VIP HESI(-) – tims – QToF MS**

Georgios O. Gkotsis,<sup>1</sup> Dimitrios E. Damalas,<sup>1</sup> Carsten Baessmann,<sup>2</sup> Bob Galvin,<sup>2</sup> Nikolaos S. Thomaidis<sup>1</sup>

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**P22 Analysis of transformation products of an emerging contaminant by HPLC-MS<sup>n</sup>**

Federico M. Ivanic, Roberto J. Candal, Matias Butler

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**P23 The assessment of sample preparation conditions for the analysis of per and polyfluorinated alkyl substances (PFASs)**

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Wolston Lane, Ryton on Dunsmore, CV8 3LG, UK

**P24 Evaluation for the performance of Energized Dispersive Guided Extraction system for high-throughput lipidomics studies in marine environmental matrices**

Yunhai Li,<sup>1</sup> Sara Finnerty,<sup>1</sup> Brian Kelleher,<sup>2</sup> Shane O'Reilly<sup>1</sup>

<sup>1</sup> Atlantic Technological University, Sligo, Ireland

<sup>2</sup> Dublin City University, Dublin, Ireland

**P25 Lipidomic profiling intertidal mudflat microphytobenthic biofilms**

Sara Finnerty,<sup>1</sup> Yunhai Li,<sup>1</sup> Brian Kelleher,<sup>2</sup> Shane O'Reilly<sup>1</sup>

<sup>1</sup> Atlantic Technological University, Sligo, Ireland

<sup>2</sup> Dublin City University, Dublin, Ireland

**P26 Leveraging LC-TIMS-QTOFMS for addressing analytical challenges in chemical exposome studies**

Konstantina S. Diamanti,<sup>1</sup> Dimitrios E. Damalas,<sup>1</sup> Georgios O. Gkotsis,<sup>1</sup> Eleni I. Panagopoulou,<sup>1</sup> Maria-Christina Nika,<sup>1</sup> Carsten Baessmann,<sup>2</sup> Bob Galvin,<sup>2</sup> Nikolaos S. Thomaidis<sup>1</sup>

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**P27 A bottom-up approach to characterize the proteome of natural rubbers employed in tyres production**

Ludovica Sofia Guadalupi,<sup>1</sup> Cosima Damiana Calvano,<sup>1</sup> Tommaso Cataldi,<sup>1</sup> Andrea Bernardi,<sup>2</sup> Mattia Cettolin,<sup>2</sup> Marco Arimondi<sup>2</sup>

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**P28 Saliva peptidome profiling in glioblastoma multiforme brain tumour by HPLC-MS top-down platform**

Alexandra Muntiu,<sup>1</sup> Diana Valeria Rossetti,<sup>2</sup> Federica Vincenzoni,<sup>1,3</sup> Irene Messana,<sup>2</sup> Massimo Castagnola,<sup>4</sup> Giuseppe La Rocca,<sup>3,5</sup> Alessandro Olivi,<sup>3,5</sup> Andrea Urbani,<sup>1,3</sup> Giovanni Sabatino,<sup>3,5</sup> Claudia Desiderio<sup>2</sup>

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**P29 Porphyrin derivatives as quadruplexes ligands: spectrometry and spectroscopy studies**

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**P30 Optimization of an LC-MS/MS method for the targeted analysis of brain microdialysis samples using derivatization with dimethylaminophenyl bromide**

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**P31 May post-translational succination be involved in cardiac arrhythmia?  
A joint study between (ion mobility) mass spectrometry and molecular dynamics**

*L. Groignet,<sup>1,2</sup> D. Dellemme,<sup>2</sup> M. Surin,<sup>2</sup> J.-M. Colet,<sup>3</sup> P. Brocorens,<sup>2</sup> J. De Winter<sup>1</sup>*

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**P32 Metabolomics applied to discover prognostic markers in human heart transplantation**

*E.C. Montatiexe Fonseca,<sup>1</sup> M.C. Mimmi,<sup>3</sup> A. Corazza,<sup>4</sup> M. Belliato,<sup>2</sup> C. Pellegrini,<sup>1</sup> S. Pelenghi<sup>1</sup>*

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**P33 Sterolomic profiling of human CSF and plasma to reveal altered cholesterol metabolism in Parkinson's diseases**

*Eylan Yutuc,<sup>1</sup> Manuela Pacciarini,<sup>1</sup> Anders Öhman,<sup>2</sup> Lars Forsgren,<sup>2</sup> Miles Trupp,<sup>2</sup> Yuqin Wang,<sup>1</sup> William J. Griffiths<sup>1</sup>*

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**P34 Metabolomic profiling in differential diagnosis for Parkinson's disease and atypical parkinsonisms**

*Erika Esposito,<sup>1,2</sup> Alessandro Perrone,<sup>1,3</sup> Chiara Cancellieri,<sup>1</sup> Manuela Contin,<sup>1,4</sup> Giovanna Calandra Buonaura,<sup>1,4</sup> Giovanna Lopane,<sup>1</sup> Jessica Fiori<sup>1,2</sup>*

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**P35 Gas chromatography-mass spectrometry reveals the metabolic signature of different phenotypes of cystic fibrosis**

Martina Spada, Cristina Piras, Vera P. Leoni, Antonio Noto, Luigi Atzori

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**P36 Novel approach to investigate highly complex pharmaceuticals utilizing ultrahigh-resolution mass spectrometry**

Ole Tiemann,<sup>1,2</sup> Lukas Schwalb,<sup>1,3</sup> Christopher P. Rüger,<sup>1,2,4</sup> Martha L. Chacón-Patiño,<sup>4,5</sup> Thomas Gröger,<sup>3</sup> Ralf Zimmermann<sup>1,2,3</sup>

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**P37 The role of the mass spectrometry in the discovery of new potential anticancer drugs**

Francesca Meloni,<sup>1</sup> Sebastiano Masuri,<sup>1</sup> Lukáš Moráň,<sup>2,3</sup> Maria Grazia Cabiddu,<sup>1</sup> Enzo Cadoni,<sup>1</sup> Josef Havel,<sup>4,5</sup> Petr Vařhara,<sup>2,4</sup> Tiziana Pivetta<sup>1</sup>

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**P38 Mass-directed preparative purification of Semaglutide batches**

Louisa O'Grady, Philip Gaffney, Paola De Luisi

Dr Reddy's Laboratories (EU) Ltd., Cambridge, UK

**P39 Investigation of the potential biotransformation of different pharmaceuticals in zebrafish embryos (*Danio rerio*), utilizing LC-QTOFMS and LC-TIMS-QTOFMS**

Eleni I. Panagopoulou, Dimitrios E. Damalas, Eleni Aleiferi, Vasiliki Tzepkinli, Nikolaos S. Thomaidis

Laboratory of Analytical Chemistry, University of Athens, Panepistimiopolis Zografou, 157 71 Athens, Greece

**P40 Antiretroviral molecules: investigating the break-down pathways**

Ambar S.A. Shaikh, Kgato P. Selwe, Ed Bergstrom, Jackie Mosely, Caroline E. H. Dessent

Department of Chemistry, University of York, Heslington, York, UK

**P41 Metabolism of nine synthetic opioid in zebrafish larvae using liquid chromatography mass spectrometry**

Sara Pesavento, Matilde Murari, Franco Tagliaro, Federica Bortolotti, Rossella Gottardo

Unit of Forensic Medicine, Department of Diagnostics and Public Health, University of Verona, Verona, Italy

**P42 Nitrating activity of the hemin- $\text{A}\beta_{16}$  complex: modifications on the peptide itself**

Silvia De Caro,<sup>1,2</sup> Simone Dell'Acqua,<sup>1</sup> Enrico Monzani,<sup>1</sup> Stefania Nicolis<sup>1</sup>

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<sup>2</sup> Scuola Universitaria Superiore IUSS Pavia, Italy

**P43 Chemical analysis and investigation of pharmacological activities of a birch bark extract from *Betula papyrifera***

Volodymyra Zuiava, Christina Bottaro, Rajendran Kaliaperumal, Matthias Bierenstiel

Memorial University of Newfoundland, 153 Park St, B1P 4W7, Sydney, NS, Canada

**P44 Proximity-dependent Biotin Identification (BiOID): a tool for screening protein- protein interactions in living cells**

Pasquinna Sida, Mike Kinsella, David Scanlon

South East Technological University (SETU), X91 K0EK, Waterford, Ireland

**P45 A mass spectrometry-based multi-omics approach to explore the mechanisms of drug resistance in methicillin-resistant *Staphylococcus aureus***

Pedro C. Rosado,<sup>1</sup> M. Matilde Marques,<sup>1,2</sup> Gonçalo C. Justino<sup>1</sup>

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**P46 Evaluation of the best HDX-MS workflow for the analysis of Meningococcal PorB in native state**

Sara Favaron,<sup>1,2</sup> Veronica Nasta,<sup>1</sup> Elisa Fasoli,<sup>2</sup> Nathalie Norais,<sup>1</sup> Lucia Eleonora Fontana<sup>1</sup>

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**P47 Mass spectrometry's role in the study of correlation between oxidative stress, OSAS and obesity**

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**P48 Laser settings' optimization for single cell MALDI-TOF MS imaging of human CD19+ lymphocytes**

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**P49 BeatBox and iST for streamlined FFPE tissue processing: A xylene-free, robust, and high-throughput sample preparation for proteomic analysis**

Jasmin Johansson, Katharina Limm, Silvia Würtenberger, Marcello Stein, Nils A. Kulak, Katrin Hartinger

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**P50 Improved detection of tryptic peptides from tissue sections using Desorption electrospray ionisation mass spectrometry imaging (DESI-MSI)**

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**P51 MS fingerprinting of cyclic modified peptides and proteins with chloromethyl acryl reagents**

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**P52 Derivatization-targeted analysis of amino compounds: from neutral loss scan to dynamic multiple reaction monitoring mode**

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**P53 A spatial multi-omics investigation into spinal cord remodeling in mouse mutant strains with altered myelin basic protein abundance**

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**P54 Finding the molecules transported by SLCs: machine learning supported targeted metabolomics**

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**P55 Exploring the cellular actions of chelerythrine employing an untargeted mass spectrometry proteomics approach**

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**P56 Determination of peptide peak purity by molecular feature extraction using accurate mass LC-MS**

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