INTERNATIONAL SCHOOL on

MASS SPECTROMETRY

2nd Course

Ion mobility mass spectrometry

Fundamentals, Advances, and Applications

EMFCSC, Erice (Italy)

September 9-14, 2024

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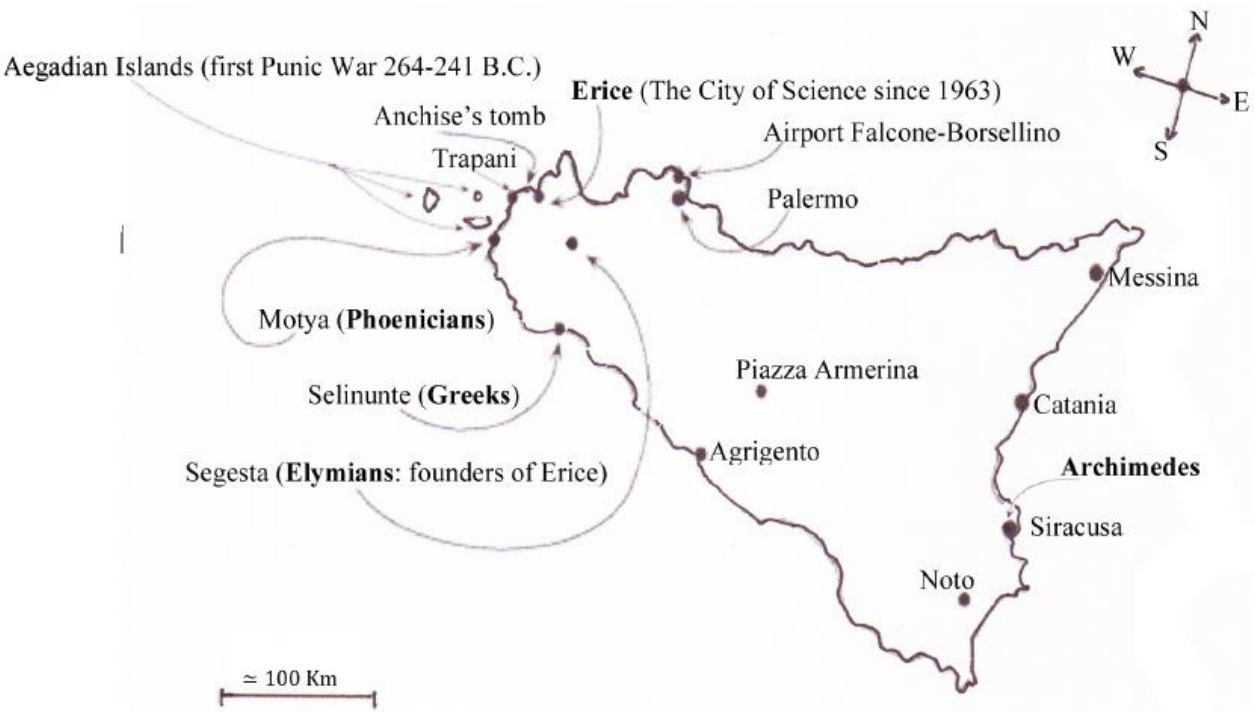

INTERNATIONAL SCHOOL on MASS SPECTROMETRY

1st Course	*25 – 30 September 2022*
2nd Course	*9 – 14 September 2024*
3rd Course	*9 – 14 September 2026*
4th Course	*9 – 14 September 2028*

DIRECTORS

School director

Prof. Gianluca Giorgi
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2nd Course director

Prof. David E. Clemmer
Indiana University
Bloomington (USA)
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TUTORS

Ane Arrizabalaga-Larrañaga – Wageningen Univ. and Research (The Netherlands)

Erin Baker – University of North Carolina (USA)

Perdita Barran – University of Manchester (UK)

Christopher D. Chouinard – Clemson University (USA)

David E. Clemmer – Indiana University (USA)

Hannah Florance – Agilent (UK)

Valérie Gabelica – University of Geneva (Switzerland)

Gianluca Giorgi – University of Siena (Italy)

John McLean – Vanderbilt University (USA)

Brandon Ruotolo – University of Michigan (USA)

Michal Sharon – Weitzmann Institute (Israel)

Alexandre Shvartsburg – Wichita State University (USA)

Jakub Ujma – Waters, Wilmslow (UK)

Stephen Valentine – University of West Virginia (USA)

Alina Zamfir – University of Arad (Romania)

BEST ORAL AWARD

to be assigned to two young researchers under 35 years of age presenting an oral communication.
The award consists of a certificate and a € 100 gift card.

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 € 100 gift card.

BEST SOLVER AWARDS

Two awards to be assigned to the the best solvers of exercises at the school.
Each award consists of a certificate and a sum of € 500.

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Divisione di Spettrometria di Massa

EuChemS
European Chemical Society

TOPICS

- Ion Mobility Mass Spectrometry: fundamentals & instrumentation
- Collision cross section (CCS)
- CCS calculations for structural analysis
- Higher-order structural analysis: IMS-SID-MS, IMS-IMS-MS, IMS-CIU-MS, and FT-IMS-MS
- Mixtures and discovery: proteomics, glycomics, lipidomics, & metabolomics
- Data Analysis
- Computational Strategies: Molecular modeling, machine learning and artificial intelligence
- Structure and stability in solution: using gas-phase ions to characterize solution structures
- Commercial instrumentation
- Applications in different fields: food, drug, etc.
- Innovation in instrumentation and methodologies

SCHOOL PROGRAM

Monday, September 9th

12:00 ÷ 5:00 p.m.	Shuttle transfer from the airports in Trapani and Palermo
6:00 p.m.	Registration
6:30 p.m.	Welcome address. Presentation of the school
7:00 p.m.	**Opening lecture:** **Mass spectrometry: state of the art and beyond** **Gianluca Giorgi** (University of Siena, Italy), **David E. Clemmer** (Indiana University, USA)
8:00 p.m.	Welcome party

Tuesday, September 10th

Introduction to ion mobility: fundamentals, experimental cross sections, molecular simulations, and cross section calculations for structural analysis

Perdita Barran (Univ. of Manchester, UK), **Valérie Gabelica** (Univ. of Geneva, Switzerland)

8:30 a.m.	Ion mobility mass spectrometry: background, introduction, and fundamentals of the measurements (types of mobility analyzers, timescales, resolving power)
10:15 a.m.	Coffee break & poster session
11:00 a.m.	Obtaining CCS values from ion mobility measurements, the role of gas, temperature, instrument and molecular ion. Introduction to computational approaches to generate CCS values from input structures, and how we (carefully) compare values from experiment and theory
12:45 p.m.	End of session
1:00 p.m.	Lunch

Instrumentation: Drift tube-, T-wave-, trapping-, and Field Asymmetric Waveform IMS (FAIMS)

Jakub Ujma (Waters, Wilmslow, UK), **Alexandre Shvartsburg** (Wichita State Univ., USA)

3:00 p.m.	Drift-tube and traveling-wave based IMS-MS instrumentation and methods
4:30 p.m.	Coffee break & poster session
5:30 p.m.	Trapping IMS & FAIMS
7:00 p.m.	End of session
8:00 p.m.	Dinner

Wednesday, September 11th

Mixtures and discovery: Proteomics, glycomics, metabolomics, lipidomics, & exposomics

Erin Baker (Univ. N. Carolina, USA), **Alina D. Zamfir** (Univ. of Arad, Romania)

8:30 a.m.	Multidimensional IMS-MS Separations for complex mixture analysis: advantages and challenges
9:00 a.m.	Proteomic and glycomic analyses
10:15 a.m.	Coffee break & poster session
11:00 a.m.	Metabolomic, lipidomic & exposomic analyses
12:00 p.m.	Database building, searching, and exercises
12:45 p.m.	End of session
1:00 p.m.	Lunch

Computational and experimental strategies for large datasets: fundamental considerations and advanced techniques

John McLean (Vanderbilt Univ., USA), **Stephen Valentine** (Univ. of West Virginia, USA)

3:00 p.m.	Fundamental considerations for CCS prediction, contemporary computational tools, and addition of orthogonal measurements
4:45 p.m.	Coffee break & poster session
5:30 p.m.	Applications incorporating additional data dimensions: reaction chemistries, spatial measurements, large-scale data interrogation
7:15 p.m.	End of session
7:30 p.m.	Dinner
9:30 p.m.	Problem solving/Troubleshooting. Questions … and drinks

Thursday, September 12th

Higher-order structural analysis: IMS-SID-MS, IMS-IMS-MS, IMS-CIU-MS, and FT-IMS-MS	
Brandon Ruotolo (Univ. of Michigan, USA)	
8:30 a.m.	Fundamental principles and equipment: ion activation combined with ion mobility methods
10:15 a.m.	Coffee break & poster session
11:00 a.m.	Case studies: ion activation techniques combined with ion mobility in action
12:45 p.m.	End of session
1:00 p.m.	Lunch
Excursion and gala dinner. Have fun!!	
2:30 p.m.	Excursion to Marsala and Selinunte: guided tour
8:30 p.m.	Gala dinner
11:00 p.m.	Go back to Erice

Friday, September 13th

Structure and stability in solution: using gas-phase ions to characterize solution structures

Michal Sharon (Weitzmann Inst., Israel), **David E. Clemmer** (Indiana Univ., USA)

8:30 a.m.	Using gas-phase ions to follow complex structural transitions in solution
10:15 a.m.	Coffee break & poster session
11:00 a.m.	Characterizing the physical properties of molecules in solution by IMS-MS: understanding reactivity and stability
12:45 p.m.	End of session
1:00 p.m.	Lunch

Short orals, applications, exercises

3:00 p.m.		Short orals by students
OR1	P1	**Improving selectivity to quantify biotherapeutics in complex matrices. Differential mobility separation to avoid immunocapture interferences** *Francesco Molinaro, Ilse De Salve* Merck KgaA, RBM S.p.a. Colleretto Giacosa (TO), Italy
OR2	P3	**Effects of polyethylene nanoparticles (PE-NPs) on lettuce leaves: insights from Ion Mobility Mass Spectrometry-based lipidomics approach** *Pier Paolo Becchi, Leilei Zhang, Luigi Lucini* Department for Sustainable Food Process, Università Cattolica del Sacro Cuore, Via Emilia Parmense 84, 29122 Piacenza, Italy
OR3	P8	**Capturing the oligomerization dynamics of ALS-related Cu/Zn superoxide dismutase with temperature-controlled nESI and cyclic IMS** *Despoina Svingou, Julian Alexander Harrison, Renato Zenobi* Department of Chemistry and Applied Biosciences, ETH Zurich, Vladimir-Prelog-Weg 3, 8093 Zurich, Switzerland
OR4	P12	**Using mass spectrometry methods to aid the development of novel photo-enzymes: ion mobility and collision-induced unfolding for the characterisation of *de novo* designed α-helical barrels** *Ana Bath Alén,[1] Liuwei Meng,[1] Harry Spacey,[2] Junfeng Ma,[2] Katarzyna Ozga,[3] Jason Kalapothakis,[1] Dek Wolfson,[3] Nigel Scrutton,[2] Perdita Barran [1]* [1] Michael Barber Centre for Collaborative Mass Spectrometry, Manchester Institute of Biotechnology, University of Manchester, 131 Princess Street, Manchester, M1 7DN, United Kingdom [2] Future Biomanufacturing Research Hub, Manchester Institute of Biotechnology, University of Manchester, 131 Princess Street, Manchester, M1 7DN, United Kingdom [3] School of Chemistry, University of Bristol, Contock's Close, Bristol, BS8 1TS, United Kingdom

OR5 P14 **Utilizing trapped ion mobility separation for enhanced lipid coverage in RP-UHPLC/MS analysis of biological samples**

Veronika Šubrtová, Robert Jirásko, Michal Holčapek

University of Pardubice, Faculty of Chemical Technology, Department of Analytical Chemistry, Studentská 573, 532 10 Pardubice, Czech Republic

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OR6 P20 **Frauds in truffle species: detection of marker compounds using SPME-GC-MS and LC-ESI-IM-QTOF-MS**

Pedro Gabriel Martínez Aznar,[1] Pedro Marco,[1] Markus Fischer,[2] Marina Creydt,[2] Eva Tejedor-Calvo [1,3]

[1] Department of Plant Science, Agrifood Research and Technology Centre of Aragón (CITA), Zaragoza, Spain
[2] Hamburg School of Food Science - Institute of Food Chemistry, University of Hamburg, Germany
[3] Department of Analytical Chemistry, Laboratory for Flavor Analysis and Enology (LAAE), Faculty of Sciences, Universidad Zaragoza, Zaragoza E-50009, Spain

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OR7 P21 **Digestibility and immunogenic peptide profile of pastas produced from evolutionary populations of wheat vs. traditional wheat varieties**

Alejandra Muñoz-González,[1] Laura Gazza,[2] Silvia Folloni,[3] Salvatore Ceccarelli,[4] Gianni Galaverna,[1] Barbara Prandi,[1] Tullia Tedeschi [1]

[1] Department of Food and Drug, University of Parma, Parco Area delle Scienze, 27/A, 43124 Parma, Italy
[2] Council for Agricultural Research and Economics, Research Centre for Engineering and Agro-Food Processing, Rome, Italy
[3] Openfields, 43052 Parma, Italy
[4] Consultant to the University of Parma, 43124 Parma, Italy

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OR8 P23 **An overview of internal energy in mass spectrometry sources, a key factor impacting ion mobility measurement results**

Emilie Bertrand, Valérie Gabelica

School of Pharmaceutical Sciences, University of Geneva, Switzerland

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OR9 P28 **Characterization of the oligomeric structure of bird hemoglobin by mass spectrometry under native conditions**

Turkan Nabiyeva,[1] Léa Letissier,[1] Maïly Kervella,[2] Stéphane Hourdez,[3] Christine Schaeffer,[1] François Criscuolo,[2] Fabrice Bertile,[1] Sarah Cianferani,[1] Oscar Hernandez-Alba [1]

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[2] Ecology, Physiology and Ethology Department (DEPE), University of Strasbourg, IPHC UMR 7178, CNRS, France
[3] Benthic Ecogeochemistry Laboratory (LECOB), University of Sorbonne, UMR 8222, CNRS, France

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OR10 P31 **Novel strategies for the characterization of the early-stages of aggregate formation of α-synuclein using ion mobility mass spectrometry**

Andrea Istrati,[1,2] Raya Sadighi,[1,2] Melissa Bärenfänger,[1,2] Anouk M. Rijs[1,2]

[1] Division of Bioanalytical Chemistry (MS-Laserlab), Department of Chemistry and Pharmaceutical Sciences, AIMMS Amsterdam Institute of Molecular and Life Sciences, Vrije Universiteit Amsterdam, 1081 HV Amsterdam, The Netherlands
[2] Centre for Analytical Sciences Amsterdam, 1098XH Amsterdam, The Netherlands

4:40 p.m.	Coffee break
5:10 p.m.	Leveraging ion mobility in complex sample analysis: an in-depth exploration of techniques and applications **Hannah Florance** (Agilent, UK)
5:30 p.m.	Exercises
7:00 p.m.	**Award for the best short oral!** **Award for the best poster!** **Award for the best IMMS solver!**
7:10 p.m.	End of session
8:00 p.m.	Dinner
9:15 p.m.	Students of the IntSMS 2024 leave their memorable mark!

Saturday, September 14th

Food and drug applications

Ane Arrizabalaga-Larrañaga (Wageningen, The Netherlands), **Christopher D. Chouinard** (Clemson University, USA)

8:30 a.m.	Ion mobility mass spectrometry for food analysis
10:00 a.m.	Coffee break
10:30 a.m.	Ion mobility mass spectrometry for drug analysis
12:00 p.m.	Meeting students-tutors
12:30 p.m.	Concluding remarks and Arrivederci!
1:00 p.m.	Shuttle bus to the airports in Trapani and Palermo

POSTER SESSIONS

Tuesday Sept. 10th: 10:15 a.m., 4:30 p.m.

Wednesday Sept. 11th: 10:15 a.m., 4:45 p.m.

Thursday Sept. 12th: 10:15 a.m.

Friday Sept. 13th: 10:15 a.m.

POSTER COMMUNICATIONS

P1 **Improving selectivity to quantify biotherapeutics in complex matrices. Differential mobility separation to avoid immunocapture interferences**

Francesco Molinaro, Ilse De Salve

Merck KgaA, RBM S.p.a. Colleretto Giacosa (TO), Italy

P2 **Increasing outer membrane complexity: the case of the lipopolysaccharide lipid A from marine *Cellulophaga pacifica***

Stefania De Chiara,[1] Emanuela Andretta,[1] Chiara Pagliuca,[2] Roberta Cirella,[1] Elena Scaglione,[2] Martina Di Rosario,[2] Maxim S. Kokoulin,[3] Olga I. Nedashkovskaya,[3] Alba Silipo,[1] Paola Salvatore,[2,4,5] Antonio Molinaro,[1] Flaviana Di Lorenzo[1]

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[3] Far Eastern Branch, G.B. Elyakov Pacific Institute of Bioorganic Chemistry, Russian Academy of Sciences, 159/2, Prospect 100 Let Vladivostoku, 690022 Vladivostok, Russia
[4] CEINGE-Biotecnologie Avanzate Franco Salvatore, Via G. Salvatore, 436, 80131 Naples, Italy
[5] Task Force on Microbiome Studies University of Naples Federico II, 80100 Naples, Italy

P3 **Effects of polyethylene nanoparticles (PE-NPs) on lettuce leaves: insights from Ion Mobility Mass Spectrometry-based lipidomics approach**

Pier Paolo Becchi, Leilei Zhang, Luigi Lucini

Department for Sustainable Food Process, Università Cattolica del Sacro Cuore, Via Emilia Parmense 84, 29122 Piacenza, Italy

P4 **Residues of florfenicol and metabolite identification in tilapia (*Oreochromis niloticus*) tissues following oral administration and post-treatment period in tropical water temperatures**

Anna Paula R. Queiroga,[1] Gabriela F.P. Souza,[1] Jonas Augusto R. Paschoal,[2] Airton Gonçalves Salles Jr,[1] Michael Schloter,[3] Fabiana Pilarski,[4] André Tadeu Gotardo,[5] Silvana Lima Gorniak,[5] Susanne Rath[1]

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[3] Helmholtz Zentrum München, Comparative Microbiome Analysis Research Unit, Neuherberg, Germany
[4] Aquaculture Center, São Paulo State University, Jaboticabal, SP, Brazil
[5] Faculty of veterinary medicine and zootechnics, University of São Paulo, São Paulo, SP, Brazil

P5 **Gas-phase IR spectroscopy of ion-mobility-separated biomolecules**

Jan Horlebein,[1,2] Jerome Riedel,[1,2] Gergo Peter Szekeres,[1,2] Maike Lettow,[1,2] Eike Mucha,[1,2] Gerard Meijer,[1] Kevin Pagel,[1,2] Gert von Helden [1]

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[2] Institut für Chemie und Biochemie, Freie Universität Berlin, Altensteinstraße 23A, 14195 Berlin, Germany

P6 **Evaluation and safety assessment of *N*-nitrosamine contamination in Brazilian cosmetic thermal waters: market analysis and method development**

Maria Fernanda Araujo Vieira Matos, Gabriela Freitas Pereira de Souza, Susanne Rath

University of Campinas (UNICAMP), Brazil

P7 **Development of innovative analytical strategies for the identification of New Psychoactive Substances**

Ilenia Bracaglia,[1,2] Martina Croce,[1,2] Gaia Di Francesco, [1] Francesco Bartolini, [1] Gianmarco Pezzuti, [1] Sara Gamberoni, [1] Camilla Montesano, [1] Antonietta Lombardozzi, [3] Serena Detti, [3] Sabino Napoletano, [3] Manuel Sergi [1]

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[2] Department of Public Health and Infectious Disease, Sapienza University of Rome,00185 Rome, Italy
[3] Department of Public Security, Central Anticrime Directorate of Italian National Police, Forensic Science Police Service (DAC-SPS), Rome, Italy

P8 **Capturing the oligomerization dynamics of ALS-related Cu/Zn superoxide dismutase with temperature-controlled nESI and cyclic IMS**

Despoina Svingou, Julian Alexander Harrison, Renato Zenobi

Department of Chemistry and Applied Biosciences, ETH Zurich, Vladimir-Prelog-Weg 3, 8093 Zurich, Switzerland

P9 **Drug-cyclodextrin inclusion complexes analysed by HR MS**

Marijana Pocrnić, David Klarić, Nives Galić

Faculty of Science, University of Zagreb, Zagreb, Croatia

P10 **Expanding the bioanalytical toolkit to investigate the metalation of biomolecules**

Tshering Zangmo, Joanna Szpunar, Luisa Ronga

Université de Pau et des Pays de l'Adour, E2S UPPA, CNRS, Institute of Analytical and Physical Chemistry for the Environment and Materials (IPREM-UMR 5254), 64053 Pau, France

P11 **Single-cell MALDI TOF MS Imaging of human granulocytes**

Maja Lukić,[1,2] Mia Suknović,[2] Ivana Marković,[1,2] Željko Debeljak[1,2]

[1] Clinical Institute of Laboratory Diagnostics, University Hospital Centre Osijek, Osijek, Croatia
[2] Faculty of Medicine Osijek, JJ Strossmayer University of Osijek, Osijek, Croatia

P12 **Using mass spectrometry methods to aid the development of novel photoenzymes: ion mobility and collision-induced unfolding for the characterisation of *de novo* designed α-helical barrels**

Ana Bath Alén,[1] Liuwei Meng,[1] Harry Spacey,[2] Junfeng Ma,[2] Katarzyna Ozga,[3] Jason Kalapothakis,[1] Dek Wolfson,[3] Nigel Scrutton,[2] Perdita Barran[1]

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[3] School of Chemistry, University of Bristol, Contock's Close, Bristol, BS8 1TS, United Kingdom

P13 **Metabolomic profiling and comparative analysis of mouse retina and retinal organoids using GC-MS and LC-MS**

Pragati Gupta,[1] *Claudia Wiesner,*[1] *Zohreh Hosseinzadeh* [2]

[1] Leipzig University, Germany
[2] Radboud University Medical Center, Netherland

P14 **Utilizing trapped ion mobility separation for enhanced lipid coverage in RP-UHPLC/MS analysis of biological samples**

Veronika Šubrtová, Robert Jirásko, Michal Holčapek

University of Pardubice, Faculty of Chemical Technology, Department of Analytical Chemistry, Studentská 573, 532 10 Pardubice, Czech Republic

P15 **Photoactive ion mobility-mass spectrometry reveals the conformational changes of fatty acid photodecarboxylase**

Liuwei Meng,[1] *Jason Kalapothakis,*[1] *Ana Bath Alen,*[1] *Junfeng Ma,*[2] *Harry Spacey,*[2] *Nigel Scrutton,*[2] *Perdita Barran* [1]

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[2] Manchester Institute of Biotechnology, Department of Chemistry and Future Biomanufacturing Research Hub (FBRH), The University of Manchester, 131 Princess Street, Manchester, M1 7DN, United Kingdom

P16 **Innovative liquid chromatographic-mass spectrometric technologies to purify and identify biologically active antibody-drug conjugates**

Margherita Marino,[1] *Paolo Rovero,*[1] *Walter Mier,*[2] *Hendrik Rusche,*[3] *Michael Chorev,*[4] *Anna Maria Papini* [1]

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[3] Fischer Analytics GmbH, Saarlandstrasse 377, 55411-Bingen, Germany
[4] Mellitus, LLC. CIC Boston (USA), Professor Emeritus at the Hebrew University of Jerusalem, Israel

P17 **MICROBoost: Discovery of transglycosylating β-galactosidases for the enzymatic synthesis of prebiotic galacto-oligosaccharides (GOS)**

Lucia Cocorullo,[1 2] *Maxime Gavage,*[2] *Adrien Boes,*[3] *Patrice Filée,*[3] *Nathalie Gillard,*[2] *Moreno Galleni*[1]

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[2] Analytical Laboratory, CER Groupe, 6900 Marloie, Belgium
[3] Laboratory of Immunobiology, CER Groupe, 6900 Aye, Belgium

P18 **Untargeted metabolomic analysis of Parmigiano Reggiano PDO using a Region of Interest-Multivariate Curve Resolution approach**

Samuele Pellacani,[1] *Sara Michelini,*[2] *Valentina Pizzamiglio,*[2] *Lorenzo Strani,*[1] *Marina Cocchi,*[1] *Caterina Durante* [1]

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[2] Consorzio del Formaggio Parmigiano Reggiano, via Kennedy 18, 42124, Reggio Emilia, Italy

P19 **Using ion mobility mass spectrometry imaging for the *in-situ* characterisation of plant hormones**

Chao Zhang,[1] *Dominika Kaczorová,*[1] *Asta Žukauskaitė,*[2] *Tetiana Kalachova,*[3] *Ivan Petřík,*[1] *Ivo Chamrád,*[1] *Jitka Široká,*[1] *Karel Doležal,*[1,2] *Ondřej Novák* [1]

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P20 Frauds in truffle species: detection of marker compounds using SPME-GC-MS and LC-ESI-IM-QTOF-MS

Pedro Gabriel Martínez Aznar,[1] Pedro Marco,[1] Markus Fischer,[2] Marina Creydt,[2] Eva Tejedor-Calvo [1,3]

[1] Department of Plant Science, Agrifood Research and Technology Centre of Aragón (CITA), Zaragoza, Spain
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[3] Department of Analytical Chemistry, Laboratory for Flavor Analysis and Enology (LAAE), Faculty of Sciences, Universidad Zaragoza, Zaragoza E-50009, Spain

P21 Digestibility and immunogenic peptide profile of pastas produced from evolutionary populations of wheat vs. traditional wheat varieties

Alejandra Muñoz-González,[1] Laura Gazza,[2] Silvia Folloni,[3] Salvatore Ceccarelli,[4] Gianni Galaverna,[1] Barbara Prandi,[1] Tullia Tedeschi [1]

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[2] Council for Agricultural Research and Economics, Research Centre for Engineering and Agro-Food Processing, Rome, Italy
[3] Openfields, 43052 Parma, Italy
[4] Consultant to the University of Parma, 43124 Parma, Italy

P22 Resolving the structural complexity of antibody-epitope interaction in *Neisseria gonorrhoeae* strains: Insights into antibody recognition

Alessandro A. Masi,[1] Marta Tiemblo-Martin,[1] Antonio Molinaro,[1] Sanjay Ram,[2] Peter T. Beernink,[3] Alba Silipo [1]

[1] University of Naples Federico II, Via Cintia, Naples, Italy
[2] Department of Infectious Diseases and Immunology, University of Massachusetts Chan Medical School, Worcester, Massachusetts 01605, United States
[3] Department of Pediatrics, University of California, San Francisco, Oakland, California 94609, United States

P23 An overview of internal energy in mass spectrometry sources, a key factor impacting ion mobility measurement results

Emilie Bertrand, Valérie Gabelica

School of Pharmaceutical Sciences, University of Geneva, Switzerland

P24 Insight on Lugana flavor with a new LC-MS method for detection of polyfunctional thiols

Giorgio Zanoni,[1] Luca Giglini Tassotti,[2] Urska Vrhovsek,[1] Silvia Carlin [1]

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[2] Center Agriculture Food Environment (C3A), University of Trento, 38098 San Michele all'Adige (TN), Italy

P25 A multi-platform non-targeted metabolomics procedure for the analysis of serum samples and its application to glaucoma disease

Jorge García,[1,2] Jorge Rodríguez,[2] Héctor González-Iglesias,[2] Andrés Fernández-Vega Cueto,[3] Pablo Rodríguez,[1] José Ignacio García Alonso [1]

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[3] Instituto Oftalmológico Fernández-Vega, Av. Dres. Fernández-Vega, 34, 33012, Oviedo, Spain

P26 **An optimized DIA-MS workflow for HCP quantification in bioreactors to assess relationship in between processing conditions and critical quality attributes**

Janik D. Seidel,[1] Mark R. Condina,[1,2] Manuela Klingler-Hoffmann,[1] Clifford Young,[1] Leigh Donnellan,[1] Craig Kyngdon,[3] Peter Hoffmann [1]

[1] Clinical and Health Sciences, University of South Australia, Adelaide, Australia
[2] Mass Dynamics, Melbourne, Australia
[3] Bioanalytical Sciences, CSL Innovation Pty Ltd., Melbourne, Australia

P27 **Bioactive molecules identification in POCTEFA area plant extracts and thermal spring waters for skin enhancement microbiome in biosourced cosmetic**

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P28 **Characterization of the oligomeric structure of bird hemoglobin by mass spectrometry under native conditions**

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P29 **PTR-MS in food science and technology: established approaches and new avenues**

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P30 **Probing the conformational diversity of Huntingtin with IM-MS – and how a GFP tag confuses things!**

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P31 **Novel strategies for the characterization of the early-stages of aggregate formation of α-synuclein using ion mobility mass spectrometry**

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P32 **Impurity profile characterization of recombinant peptide samples by LC-QTOF-ESI**

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P33 **Use of Ion Mobility-Mass Spectrometry to aid the mechanistic understanding of [4Fe-4S] cluster assembly on the scaffold protein NUBP1**

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