



MONDAY, SEPTEMBER 9TH – MORNING

09:00 Opening Ceremony

Prof. Jean-Marc Ogier (FR), President of La Rochelle University

Jean-François Fountaine (FR) – City Mayor of La Rochelle

Alain Brunelle (FR) – Conference Chair

Jean-Paul Barnes (FR) – Conference co-chair & Chair of the Scientific Committee

M. Crépeau Auditorium – Chairs : J-P. Barnes & E. Niehuis

09:30 SIMS – All for one and one for all

Plenary speaker, Alfred Benninghoven Award

I. Gilmore – NPL, Teddington (UK)

M. Crépeau Auditorium – Chairs : J-P. Barnes & D. Leonard

10:30 CAMECA-AMETEK Platinum plenary talk

10:50

Break 40'

BIO 1 / Biomaterials, life science and biotechnology, tissue imaging

M. Crépeau Auditorium

Chairs: H. Tian & F. Green

11:30 #254 - GCIB-ToF-SIMS studies of skin cancer and its progression

J. Fletcher, K. Sjögren Cehajic, K. Dimovska Nilsson, O. Zaar, D. Katsarelias, J. Paoli, R. Olofsson Bagge, N. Neittaanmäki

Univ. Gothenburg (SE)

11:50 #203 - Spinal cord injuries under the spotlight of ToF-SIMS

X. Delvaux¹, V. Bielarz¹, A. Smits¹, L. Houssiau², C. Nicaise¹

¹Namur Research Institute for Life Sciences, Univ. Namur (BE)

²Namur Institute of Structured Matter, Univ. Namur (BE)

12:10 #114 - Understanding in vivo topical permeation of cosmetics using SIMS

A. Trzaska¹, M. O'mahony², N. Starr¹, R. Griffiths¹, M. Alexander¹, D. Scurr¹

¹Univ. Nottingham (UK)

²No7 Beauty Company, Walgreens Boots Alliance - Nottingham (UK)

12:30 #219 - Visualisation of drug distribution in skin using correlative optical spectroscopy and mass spectrometry imaging

J-L. Vorng¹, N. Belsey¹, A. Dexter¹, D. Tsikritsis¹, C. Nikula¹, T. Murta¹, M.V. Tiddia¹, J. Zhang¹, E. Gurdack¹, G. Trindade¹, I. Gilmore¹, R. Guy², M. Boncheva Bettex³

¹National Physical Laboratory - Teddington (UK)

²Department of Life Sciences, Univ. Bath - Teddington (UK)

³Haleon CH SARL - Teddington (UK)

12:50 Lunch break



MONDAY, SEPTEMBER 9TH – MORNING

ML 1 / Machine learning, data analysis

Hermione Room – Chairs: A. Henderson & B. Tyler

- 11:30 Cryo-OrbiSIMS enables integrative modelling of RNA structures at atomic resolution
Keynote lecture
A. Borkar
Univ. Nottingham (UK)
- 12:10 **#201** - Applying machine learning to multiplexed acquisitions
H. Arlinghaus¹, D. Rading², J. Zakel², P. Pigram³, W. Gardner³, S. Bamford³, S.Y. Wong³, E. Niehuis²
¹ IONTOF GmbH, Institut für Hygiene, Münster (DE)
² IONTOF GmbH, Münster (DE)
³ Centre for Materials and Surface Science, La Trobe Univ. - Melbourne (AU)
- 12:30 **#136** - Applications of machine learning in ToF SIMS data analysis: quantitative analyses using physics-based and machine-learning approaches
A. Walker, L. Gelb
Univ. Texas at Dallas - Richardson (US)

GEO 1 / Geology, geo-and cosmochemistry, archaeology, environment

Victory Room

Chairs: L. Rémusat & J. Matsuo

- 11:30 Utilizing dynamic SIMS for isotopic analysis of terrestrial and extraterrestrial materials
Keynote lecture
C.E. Jilly^{1,2}
¹ Department of Earth and Planetary Sciences, Stanford Univ., Stanford CA (US)
² Stanford Nano Shared Facilities, Stanford Univ., Stanford CA (US)
- 12:10 **#118** - Matrix effects in MeV SIMS for detection of synthetic organic pigments in different binding media
M. Krmpotic¹, D. Jembrih-Simbürger², T. Raicu², Z. Siketic¹, M. Matijevic¹, I. Bogdanovic Radovic
¹ Laboratory for Ion Beam Interactions, Rudjer Boskovic Institute, Zagreb (HR)
² Institute for Natural Sciences and Technology in the Arts, Academy of Fine Arts Vienna, Vienna (AT)
- 12:30 **#101** - Towards a higher temporal resolution for decoding oxygen isotopic signatures of pearl mussel shell used as a long-term hydrological recorder
N. Valle¹, C. Gey², F. Thielen³, B. El Adib¹, E. Deloule⁴, B.R. Schöne², L. Pfister^{5,6}
¹ Dpt. Materials Research and Technology, LIST, Belvaux (LU)
² Institute of Geosciences, Univ. Mainz (DE)
³ Natur&ëmwelt Fondation Hëllef Fir d'Natur, Marnach (LU)
⁴ Centre de Recherches Péetrographiques et Géochimiques, Vandœuvre-lès-Nancy (FR)
⁵ Dpt. Environmental Research and Innovation, LIST, Belvaux (LU)
⁶ Univ. Luxembourg, Faculty of Science, Technology, and Medicine, Esch/alzette (LU)
- 12:50 **Lunch break**



MONDAY, SEPTEMBER 9TH – AFTERNOON

COMP 1 / Analysis of complex samples, depth profiling and imaging

M. Crépeau Auditorium

Chairs: C. Courrèges & A. Bejjani

- 14:40 Advanced physico-chemical characterization of complex systems for microelectronics: innovative SIMS-based approaches
Keynote lecture
V. Spampinato
Department of Chemical Sciences, Univ. Catania (IT)
- 15:20 **#105** - Analysis of thin EUV photoresist films with MeV gold nanoparticles
I. Ribaud¹, D. Jacquet¹, T.H. Lai¹, V. Spampinato², A. Franquet², S. Della-Negra¹
¹IJCLab, UMR9012 – CNRS / Univ. Paris-Saclay / Univ. Paris Cité - Orsay (FR)
²IMEC - Leuven (BE)
- 15:40 **#151** - SIMS analysis of an oxide thin film with continuous composition gradient
J. Scola¹, F. Jomard¹, J. Wolfman², B. Negulescu², M.A. Pinault-Thaury¹
¹Univ. Paris-Saclay, UVSQ, CNRS, GEMaC - Versailles (FR)
²Univ. Tours, CNRS, Laboratoire GREMAN - Tours (FR)
- 16:00 **#083** - Boron depth profile in silicon with a ToF-SIMS using low energy O₂⁺ beam: effect of the Bi LMIG energy and clustering on depth resolution
J. Lavie¹, J.M. Hartmann², M. Juhel¹
¹STMicronelectronics - Crolles (FR)
²CEA LITEN - Crolles (FR)

16:20

Break 40'

COMP 2 / Analysis of complex samples, depth profiling and imaging

M. Crépeau Auditorium

Chairs: L. Weng & G. Ceccone

- 17:00 Digging into the depth of molecule coated oxide nanostructures - routes to analyse hybrid organic-inorganic nanomaterials
Keynote lecture
M.S. Killian
Chemistry and Structure of Novel Materials, Univ. Siegen (DE)
- 17:40 **#017** - In situ experiments and probing measurement artifacts when profiling hybrid organic-inorganic perovskite materials
S. Harvey, F. Yang, K. Zhu
National Renewable Energy Laboratory - Golden, CO (US)
- 18:00 **#033** - P3HT multilayer sputtering: molecular dynamics insights into low-energy monoatomic projectile interactions
S. Louerdi¹, T. Mouhib², M. Kański¹, Z. Postawa¹
¹Jagiellonian Univ., Faculty of Physics, Astronomy and Applied Computer Science - Krakow (PL)
²Hassan First Univ. Settat, Ecole Nationale des Sciences Appliquées, LISA Lab. - Berrechid (MA)
- 18:20 **#234** - Recent applications of ToF-SIMS analysis on new electrochemical energy conversion materials
X. Sun, Z. Wang, D. Guan, Z. Lin, W. Rickard
Curtin Univ. - Perth (AU)



MONDAY, SEPTEMBER 9TH – AFTERNOON

FUN 1 / Fundamental science

Hermione Room – Chairs: A. Henss & A. Delcorte

- 14:40 **#041** - Further elucidation of secondary ion formation mechanisms via secondary ion angular distributions
A. Spool¹, L. Finney²
¹ Western Digital, Retired (US) - ² Western Digital (US)
- 15:00 **#067** - Study on the properties of ionization yield of sputtered neutral atoms in dual-laser secondary neutral mass spectrometry (SNMS)
R. Saito^{1,2}, M. Morita², H. Yabuhara¹, T. Sakamoto²
¹ Toshiba corporation, Yokohama (JP) - ² Kogakuin Univ. – Hachioji (JP)
- 15:20 **#084** - Theoretical insights into the structure of water cluster projectiles and their mechanism of operation
M. Kański, Z. Postawa
Jagiellonian Univ., Smoluchowski Institute of Physics - Kraków (PL)
- 15:40 **#065** - Co-sputtering EXLIE SIMS concept, challenges for surface state control under dynamic SIMS conditions
A. Merkulov
IMEC - Leuven (BE)
- 16:00 **#075** - Fragmentation-free deposition of organic molecules based on cluster-induced desorption for detailed analysis of surface-mediated and on-surface reactions
M. Dürr, K. Pluschke, A. Herrmann
Justus Liebig Univ. - Giessen (DE)

16:20

Break 40'



MONDAY, SEPTEMBER 9TH – AFTERNOON

BIO 2 / Biomaterials, life science and biotechnology, tissue imaging

Hermione Room

Chairs: M. Alexander & A. Kotowska

- 17:00 **#227** - Single-cell spatial biology using dual SIMS for cell-type-specific omics in tissue microenvironment
H. Tian
Univ. Pittsburgh (US)
- 17:20 **#240** - High resolution ToF-SIMS imaging for subcellular profiling of a snow microalga
C. Seydoux¹, J. Ezzedine², G. Si Larbi², S. Ravanel², E. Maréchal², J.P. Barnes³, P.H. Jouneau¹
¹ *Laboratoire Modélisation et Exploration des Matériaux, CEA, UGA; IRIG, Grenoble (FR)*
² *Laboratoire de Physiologie Cellulaire et Végétale, CNRS, INRAE, CEA, UGA; IRIG, Grenoble (FR)*
³ *Univ. Grenoble Alpes, CEA, Leti, Grenoble (France)*
- 17:40 **#116** - A novel approach to understanding parasite nutrient uptake and metabolism at a subcellular scale: Nanoscale Secondary Ion Mass Spectrometry
M. Turner, K. Moore, K. Else
Univ. Manchester (UK)
- 18:00 **#237** - Fine particulate matter effects on human bronchial epithelial cells using 2D and 3D ToF-SIMS imaging
M. Noun¹, R. El Annan², A. Brunelle³, J.P. Salvetat⁴, S. Villette², I. Abbas¹, A. Verdin⁵, G. Badran⁶, M. Roumie¹, S. Lecomte²
¹ *Lebanese Atomic Energy Commission, CNRS-L, Beirut (LB)*
² *Univ. Bordeaux, CNRS, Bordeaux INP, CBMN, UMR 5248, Pessac (FR)*
³ *Sorbonne Univ., CNRS, Laboratoire d'Archéologie Moléculaire et Structurale (LAMS), Paris (FR)*
⁴ *Placamat, UAR 3626, CNRS, Univ. Bordeaux, Pessac (FR)*
⁵ *Univ. Littoral Côte d'Opale, UCEIV UR4492, Dunkerque (FR)*
⁶ *Univ. Paris-Saclay, INSERM, Inflammation microbiome immunosurveillance, Orsay (FR)*
- 18:20 **#042** - Secondary Ion Mass Spectrometry analysis of glycosaminoglycans within biological samples
A. Hook
Univ. Nottingham (UK)



MONDAY, SEPTEMBER 9TH – AFTERNOON

GEO 2 / Geology, geo-and cosmochemistry, archaeology, environment

Victory Room

Chairs: P. Van der Heide & Y. Lee

- 14:40 ToF-SIMS imaging of heritage materials: tackling analytical limitations to widen the interdisciplinary impact
Keynote lecture
C. Bouvier
Maastricht MultiModal Molecular Imaging Institute (M4i), Maastricht Univ. (NL)
- 15:20 **#156** - NanoSIMS investigation of the H and N isotope composition of the macromolecular organic matter of the asteroid Ryugu
L. Rémusat, M. Verdier-Paoletti, S. Mostefaoui
IMPMC UMR CNRS 7590 - MNHN - Paris (FR)
- 15:40 **#078** - Characterization of the nuclear material at the micrometric scale using Large Geometry-Secondary Ion Mass Spectrometry: a powerful tool for nuclear safeguards
A-L. Fauré, M. Cornaton, F. Pointurier
CEA - Arpajon (FR)
- 16:00 **#103** - Nano-scale imaging of multi-isotope ratios in radionuclide-bearing phases
L. Darricau¹, J. Aleon², V. Sellier¹, A. Mangeret¹, J. Gorny¹, N. Ait-Ouabbas¹, L. Garcia-Sanchez³, D. Suhard⁴, G. Montavon⁵, A. Gourgiotis¹
¹ IRSN, PSE-ENV/SPDR/LT2S - Fontenay-aux-Roses (R)
² IMPMC, Sorbonne Univ., Museum National d'Histoire Naturelle, CNRS UMR7590 - Paris (FR)
³ IRSN, PSE-ENV/SPDR/LT2S - Saint-Paul-lez-Durance (FR)
⁴ IRSN, PSE-SANTE/SESANE/LRSI - Fontenay-aux-Roses (FR)
⁵ Laboratoire SUBATECH, UMR 6457, IMT Atlantique/Univ. Nantes/CNRS/IN2P3 - Nantes (FR)

16:20

Break 40'

HIRES 1 / High mass/lateral resolution analysis

Victory Room – Chairs: N. Valle & M. Rohnke

- 17:00 From atomic layers, 3D nanostructures to full wafer thickness – the versatility of the SIMS technique
Keynote lecture
P.P. Michałowski
Łukasiewicz Research Network – Institute of Microelectronics and Photonics, Warsaw (PL)
- 17:40 **#055** - High-resolution imaging and high-throughput data acquisition on a FIB instrument equipped with a magnetic sector SIMS
J-N. Audinot, O. De Castro, A. Biese-meier, Q.H. Hoang, T. Wirtz
Luxembourg Institute of Science and Technology - Belvaux (LU)
- 18:00 **#182** - Large scale high resolution cryo imaging of Zebrafish by water Cluster Secondary Ion Mass Spectrometry (Cluster SIMS)
M. Mills¹, E. Lau², M. Bailey², K. Mchardy¹
¹ Ionoptika - Chandlers Ford (UK)
² Univ. Surrey - Guildford (UK)



TUESDAY, SEPTEMBER 10TH – MORNING

CORR 1 / Correlative analysis or multitechnique analysis

M. Crépeau Auditorium
Chairs: R.M.A. Heeren & E. De Vito

- 08:30 Big pixels can be beautiful too... MALDI MSI sheds new light on plant cell walls
Keynote lecture
H. Rogniaux^{1,2}
¹ INRAE, UR1268 BIA, Nantes (FR)
² INRAE, PROBE research infrastructure, BIBS facility, Nantes (FR)
- 09:10 **#085** - Correlated cryo-EM and cryo-FIB-SIMS enables spatial and chemical imaging of biological specimens
H. Ochner, B. Isbilir, A. Tarafder, Z. Wang, I. Caspy, T. Bharat
Laboratory of Molecular Biology - Cambridge (UK)
- 09:30 **#062** - Improving the analysis of biological samples incorporating nanoparticles by multimodal imaging and mass spectrometry applied on focused ion beam instrumentation
A. Biesemeier¹, O. De Castro¹, T. Taubitz^{1,2}, Z. Berro³, Z. Berro⁴, E. Moschini^{5,6}, J.N. Audinot¹, T. Wirtz¹
¹ Materials Research and Technology Department, LIST - Belvaux (LU)
² Dpt. of Structural Biochemistry, Max Planck Institute of Molecular Physiology - Dortmund (DE)
³ LIST - Belvaux (LU)
⁴ Univ. Luxembourg - Belval Esch-sur-Alzette (LU)
⁵ Environmental Research and Innovation (ERIN) Department, LIST - Belvaux (LU)
⁶ Heriot-Watt Univ. - Edinburgh (UK)
- 09:50 **#089** - Correlative ToF-SIMS and in-situ AFM studies on 2D Transition Metal Dichalcogenides (TMD)
R. Tilmann¹, A. Franquet¹, S. Heiserer², G.S. Duesberg², J. Serron¹, A. Minj¹, T. Hantschel¹, P. Van Der Heide¹, V. Spampinato³
¹ IMEC - Leuven (BE)
² Univ. Bundeswehr Munich - Munich (DE)
³ UNICT - Catania (IT)
- 10:10 **#036** - Simultaneous molecular and elemental Imaging: MeV SIMS and heavy ion PIXE in sequential analysis
Z. Siketic, I. Bogdanovic Radovic, M. Masekane, M. Krmpotic, M. Matijevic
Ruder Boskovic Institute - Zagreb (Croatia)
- 10:30 **Break 40'**
- 11:10 Poster session 1 until 12:30
- 12:30 **Lunch break**
- 13:30 Poster session 1 until 15:00
- 14:00- 14:45 Workshops **RAITH** (Hermione Room) & **CAMECA-AMETEK** (Victory Room)



TUESDAY, SEPTEMBER 10TH – MORNING

INST 1 / Instrumentation & novel ion beams

Hermione Room

Chairs: J-N. Audinot & A-S. Robbes

- 08:30 A fundamental study of small proteins using Gas Cluster Ion Beam Secondary Ion Mass Spectrometry (GCIB-SIMS) – multiple charging and projectile effects
Keynote lecture
N. Lockyer¹, S. Sheraz¹, M. Lagator², H. Tian³, F. Green²
¹ Department of Chemistry, Photon Science Institute, Univ. Manchester (UK)
² Rosalind Franklin Institute, Harwell Campus - Didcot (UK)
³ Univ. Pittsburgh (US)
- 09:10 **#099** - CO₂/Ar gas cluster ion beam combined with high-mass resolution OrbiSIMS imaging
A. Eyres^{1,2}, C.L. Newell^{1,3}, J.L. Vorng¹, A.P. Gould³, I.S. Gilmore¹
¹ National Physical Laboratory, Hampton Road, Teddington, London (UK)
² Univ. Oxford, Chemistry Research Laboratory, Department of Chemistry, Oxford (UK)
³ The Francis Crick Institute - London (UK)
- 09:30 **#035** - Augmenting the performances of nanoprojectile SIMS using a 64 anodes detector
P. Hirchenhahn¹, D. Verkhoturov¹, S. Verkhoturov¹, M. Eller², E. Schweikert¹
¹ Department of Chemistry - College Station (US)
² Department of Chemistry and Biochemistry - Northridge (US)
- 09:50 **#051** - Magnetic sector SIMS systems for FIB platforms: new developments, applications, and prospects
T. Wirtz, O. De Castro, H. Hoang, A. Biesemeier, S. Eswara, J.N. Audinot
LIST Belvaux (LU)
- 10:10 **#229** - Primary ion source developments at Arizona State University
P. Williams, M. Bose, L. Nittler, R. Hervig
Arizona State Univ. - Tempe (US)
- 10:30 **Break 40'**
- 11:10 Poster session 1 until 12:30
- 12:30 **Lunch break**
- 13:30 Poster session 1 until 15:00
- 14:00-14:45 Workshops **RAITH** (Hermione Room) & **CAMECA-AMETEK** (Victory Room)



TUESDAY, SEPTEMBER 10TH – MORNING

FUN 2 / Fundamental science

Victory Room – Chairs: T. Fu & E. Schweikert

- 08:30 Nanoscale molecular analysis with nano-projectile SIMS
Keynote lecture
M.J. Eller
Department of Chemistry and Biochemistry, California State Univ. Northridge (US)
- 09:10 **#166** - Emission of velocity correlated secondary cluster ions following surface impact with fullerene ions
E. Kolodney, E. Armon, A. Bekkerman, V. Bernstein, B. Tsipinyuk
Schulich Faculty of Chemistry, Technion - Israel Institute of Technology - Haifa (IL)
- 09:30 **#153** - ToF-SIMS and SS-NMR: a powerful combination to unravel the self-degradation mechanism of organophosphonic acid grafted titanium dioxide under humid storage conditions
K. Marcoen¹, N. Gys², B. Pawlak³, E. Derveaux³, L. Luntadila Lufungula⁴, L. Siemons⁴, B. Michiels⁵, F. Blockhuys⁴, P. Adriaensens³, S. Mullens⁵, V. Meynen², T. Hauffman¹
¹ *Vrije Univ. Brussel, Dpt. Materials and Chemistry (BE)*
² *Univ. Antwerp, Flemish Institute for Technological Research (VITO NV) (BE)*
³ *Hasselt Univ., MATCHEM, Analytical and Circular Chemistry (ACC) (BE)*
⁴ *Univ. Antwerp, Department of Chemistry, Structural Chemistry Group (BE)*
⁵ *Flemish Institute for Technological Research (VITO NV) (BE)*
- 09:50 **#074** - Exploring the role of depth in SIMS signal detection for deuterium-implanted fusion matrices
G. Delgado Soria, M. González Viada
CIEMAT - Madrid (ES)
- 10:10 **#072** - Soft and reactive landing of a protein (neurotensin) cluster: the effect of collision's parameters
S. Bertolini, A. Delcorte
UCLouvain - Louvain-La-Neuve (BE)
- 10:30 **Break 40'**
- 11:10 Poster session 1 until 12:30
- 12:30 **Lunch break**
- 13:30 Poster session 1 until 15:00
- 14:00-14:45 Workshops **RAITH** (Hermione Room) & **CAMECA-AMETEK** (Victory Room)



TUESDAY, SEPTEMBER 10TH – AFTERNOON

BIO 3 / Biomaterials, life science and biotechnology, tissue imaging

M. Crépeau Auditorium

Chairs: J. Fletcher & C. Seydoux

15:00 Unlocking the potential of high-volume SIMS data with molecular formula prediction

Keynote lecture

A. Kotowska

Univ. Nottingham (UK)

15:40 #217 - Nanoscale co-localization analysis of tagged proteins and lipids on individual extracellular vesicles by nano-projectiles SIMS

D. Verkhoturov¹, S. Lee², T.Q. Nguyen², D. Choi², M. Eller³, S. Verkhoturov¹, K. Gwon², F. Lucien², H. Malhi², A. Revzin², E.A. Schweikert¹

¹ *Texas A&M University - College Station (US)*

² *Mayo Clinic - Rochester (US)*

³ *California State University Northridge - Northridge (US)*

16:00 #147 - Development of an evaluation method for ligand conjugation and existence of free ligands in solution of nano-sized and micro-sized particles using ToF-SIMS images and statistical analysis

H. Shon, T.G. Lee, J.G. Son

Korea Research Institute of Science and Technology - Daejeon (KR)

16:20 #068 - Gas Cluster Ion Beam (GCIB)-assisted deposition applications

B. Tomasetti, M. Lakhdar, C. Dupont, C. Lauzin, A. Delcorte

UCLouvain (BE)

16:40

Break 40'

BIO 4 / Biomaterials, life science and biotechnology, tissue imaging

M. Crépeau Auditorium

Chairs: A. Hook & P. Sjövall

17:20 Revealing trace element and stable isotope subcellular distributions in biological materials with high resolution SIMS

Keynote lecture

K. Moore¹, S. Sheraz², J. Dinsley¹, M. Turner¹, M. Burkitt-Gray², K. Else¹, J. Balk³

¹ *Univ. Manchester (UK)*

² *Kings College London - London (UK)*

³ *John Innes Centre - Norwich (UK)*

18:00 #187 - Cryo-3D MSI for plant cells by water Cluster Secondary Ion Mass Spectrometry (Cluster SIMS)

M. Ryszka, N. Sano, M. Mills, K. Mchardy, P. Blenkinsopp

Ionoptika Ltd - Chandlers Ford (UK)

18:20 #150 - ToF-SIMS imaging coupled with immunostaining methods

K. Garcia, M. Shamraeva, R.M.A. Heeren, S. Van Nuffel

Maastricht MultiModal Molecular Imaging Institute – M4i - Maastricht (NL)



TUESDAY, SEPTEMBER 10TH – AFTERNOON

COMP 3 / Analysis of complex samples, depth profiling and imaging

Hermione Room

Chairs: V. Spampinato & T. Terlier

- 15:00 **#209** - ToF-SIMS chemical mapping for insight into early 1900s historical photographic films
N. Tuccitto, V. Spampinato, A. Auditore, A. Torrisi, A. Licciardello
Univ. Catania - Catania (IT)
- 15:20 **#251** - ToF-SIMS imaging analysis to determine Cognac barrels oak wood interaction with specific fungi
A. Cournot¹, T. Herrera Durigneux², Q.P. Vanbellinghen¹, A. Demaye², J. Kokesch-Himmelreich³, P. Walter¹, A. Römpp³, D. Touboul⁴, V. Eparvier², A. Brunelle¹
¹ Sorbonne Univ., CNRS, LAMS - Paris (FR) - ² Univ. Paris-Saclay, CNRS, ICSN - Gif-sur-Yvette (FR)
³ Univ. Bayreuth, BSFA - Bayreuth (DE) - ⁴ Ecole Polytechnique, CNRS, LCM - Palaiseau (FR)
- 15:40 **#064** - Novel Zircaloy nanomaterials with antibacterial activity
G. Onyenso, M. Killian
Univ. Siegen (DE)
- 16:00 **#256** - Macroscale nanocontainers: innovation in functional coatings or additional superfluous roughness?
S. Vakamulla Raghu¹, P. Hartwich¹, A. Patalas², M.S. Killian¹
¹ Univ. Siegen (DE) - ² Poznan Univ. of Technology - Poznan (PL)
- 16:20 **#211** - Benefits of high energy per nuclei (E/N) using small cluster size at 70 keV beams in 3D SIMS analysis for challenging analytes
N. Sano, K. Mchardy, P. Blenkinsopp
Ionoptika LTD. - Chandler's Ford (UK)

16:40

Break 40'

CORR 2 / Correlative analysis or multitechnique analysis

Hermione Room

Chairs: A. Galtayries & I. Gilmore

- 17:20 **#189** - Surface Analysis of Nanolayers by LEIS, SIMS and XPS
B. Hagenhoff¹, J. Tröger^{1,2}, D. Heller-Krippendorf¹, D. Breitenstein¹
¹ Tascon GmbH - Münster (DE) - ² Univ. Münster (DE)
- 17:40 **#027** - ToF-SIMS and XPS coupled characterization of HgCdTe surface oxides for infrared detection applications
S. Bel, C. Lobre, S. Petit, M. Veillerot, G. Badano
Univ. Grenoble Alpes, CEA, Leti, Grenoble (FR)
- 18:00 **#029** - Correlated microscope/ToF-SIMS imaging mass spectrometry with continuous C60 ion beam
H. Li, P. Chen, Y. Chen
Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian (CN)
- 18:20 **#079** - Way to understand the functional thin films formation in static and dynamic conditions and its co-dependency with topography – Poly(4-vinylpyridine)-CoBr₂ complex case study
J. Chudzik^{1,2}, P. Dąbczyński², J. Rysz², S. Tymetska¹, A.M. Majcher-Fitas²
¹ Jagiellonian Univ., Doctoral School of Exact and Natural Sciences, Krakow (PL)
² Faculty of Physics, Astronomy and Applied Computer Science, Jagiellonian Univ., Krakow (PL)



TUESDAY, SEPTEMBER 10TH – AFTERNOON

IND 1 / Industrial applications (bio, organic, and inorganic)

Victory Room

Chairs: D. Rading & Y. Hou

15:00 How to leverage atom probe tomography to address characterization challenges in the semiconductor industry

Keynote lecture

C. Fleischmann^{1,2}

¹ IMEC, Leuven (BE)

² Quantum Solid State Physics Group, KU Leuven (BE)

15:40 **#034** - Practical Ar⁺ GCIB in-situ ToF-SIMS cross sectioning

D. Carr, S. Hanson

3M Corporate Research Analytical Lab - St. Paul (US)

16:00 **#095** - ToF-SIMS characterization of iron-based metal-organic frameworks as mediators in persulfate-activated degradation of pharmaceutical factory effluents in water

A. Bejjani¹, **B. Nsouli**¹, **R. El Asmar**², **Z. Abou Khalil**², **A. Baalbaki**², **A. Ghauch**²

¹ Lebanese Atomic Energy Commission-NCSR, Beirut (LB)

² American Univ. Beirut, Faculty of Arts and Sciences, Department of Chemistry - Beirut (LB)

16:20 **#100** - Native state characterisation of lubricating grease using a multi-technique approach

X. Wang¹, **D.S.A. De Focatiis**¹, **D.J. Scurr**², **D.J. Irvine**¹

¹ Univ. Nottingham, Faculty of Engineering, Nottingham (UK)

² Univ. Nottingham, School of Pharmacy, Nottingham (UK)

16:40

Break 40'

ML 2 / Machine learning, data analysis

Victory Room – Chairs: P. Pigram & M. Kraft

17:20 Data mining from rich SIMS data using machine learning

Keynote lecture

S. Aoyagi

Seikei Univ. - Tokyo (JP)

18:00 **#242** - FAIRSpectra: towards a standard data file format for SIMS images

A. Henderson

Univ. Manchester (UK)

18:20 **#198** - A new algorithm for improved automated segmentation of mass spectrometry images

B. Tyler, R. Kassenböhmer, R.E. Peterson, H.F. Arlinghaus

Institute of Physics, Univ. Münster (DE)



WEDNESDAY, SEPTEMBER 11TH

M. Crépeau Auditorium – Chairs: J-P. Barnes & A. Brunelle

08:30 Mass spectrometry imaging and innovations in spatial biology

Plenary speaker

R.M.A. Heeren

M4i - Maastricht Multimodal Molecular Institute, IMS, Maastricht Univ., Maastricht (NL)

M. Crépeau Auditorium – Chairs: J-P. Barnes & A. Brunelle

09:30 IONTOF Platinum plenary talk

09:50

Break 40'

M. Crépeau Auditorium – Chair: A. Brunelle

10:30 Conclusions of SIMS-24

10:45 Presentation of SIMS-25 (2026)

11:00 Presentation of SIMS Europe (2025), North America SIMS Workshop (2025) & CQLMNS 2025

11:15 Tribute to G. Slodzian in his presence

11:35 Conference photo

12:00 *Lunch break (boxes)*

13:30 Social program (booking mandatory)

#1 Boat trip to “Fort Boyard”

#2 Aquarium

#3 Maritime museum

#4 Guided walking tour of the La Rochelle city

18:30 Conference dinner (until 23:00)



THURSDAY, SEPTEMBER 12TH – MORNING

BIO 5 / Biomaterials, life science and biotechnology, tissue imaging

M. Crépeau Auditorium

Chairs: K. Moore & A. Licciardello

- 08:30 ToF-SIMS analysis of biological and fossil samples
Keynote lecture
P. Sjövall
RISE Research Institutes of Sweden, Borås (SE)
- 09:10 **#171** - Tracking active fungicide mobility in wheat leaves with ToF-SIMS
A. Ajith¹, S. Sheraz¹, D. Trivedi¹, G.N. Johnson¹, P.J. Milnes², N.P. Lockyer¹
¹ *Univ. Manchester (UK)*
² *Syngenta - Bracknell (UK)*
- 09:30 **#207** - Influence of primary ion species, cluster size and analysis temperature on the spectra of antibiotics in frozen aqueous sample systems
M. Bäumer, T. Adolphs, R.E. Peterson, H.F. Arlinghaus, B.J. Tyler
Institute of Physics, Univ. Münster (DE)
- 09:50 **#204** - Lipidomics on immune-instructive polymers implanted subcutaneously using 3D OrbiSIMS
A. Sabri¹, A. Kotowska¹, L. Fisher¹, J. Mase², C. Wong¹, L. Kämmerling³, M. Price⁴, G. Figueredo⁵, A. Ghaemmaghami⁵, M.R. Alexander⁵
¹ *Advanced Materials and Healthcare Technologies Division, School of Pharmacy, Univ. Nottingham (UK)*
² *School of Computer Science, Univ. Nottingham (UK)*
³ *School of Life Sciences, Faculty of Medicine and Health Science, Univ. Nottingham (UK)*
⁴ *Faculty of Engineering, Univ. Nottingham (UK)*
⁵ *Health Data Science, Faculty of Medicine & Health Sciences, Univ. Nottingham (UK)*
- 10:10 **#224** - OrbiSIMS spatially resolves isomeric trisaccharides on surfaces
G.F. Trindade, R. Patterson, B. Yan, J.L. Vorng, I. Gilmore
National Physical Laboratory - London (UK)
- 10:30 **Break 40'**
- 11:10 Poster session 2 until 12:30
- 12:30 **Lunch break**
- 13:30 Poster session 2 until 15:00
- 14:00-14:45 Workshops **IONOPTIKA** (Hermione Room) & **ORSAY PHYSICS** (Victory Room)



THURSDAY, SEPTEMBER 12TH – MORNING

CORR 3 / Correlative analysis or multitechnique analysis

Hermione Room

Chairs: S. Aoyagi & A. Ievlev

- 08:30 **#066** - Li isotopic tracing as a toolbox for the study of lithium mobility in battery materials
E. De Vito¹, T. Meyer², T. Gutel¹, M. Berthault¹, H. Manzanarez¹, J. Almoríc³, T. Genieys³, M. Bardet⁴
¹ Univ. Grenoble Alpes, CEA, DES, LITEN - Grenoble (FR)
² Justus-Liebig-Univ. Giessen, IPC - Giessen (DE)
³ Orsay Physics, Tescan Group - Fuveau (FR)
⁴ Univ. Grenoble Alpes, CEA, DRF, IRIG - Grenoble (FR)
- 08:50 **#053** - Nano-scale isotopic tracing of lithium in negative electrodes by FIB-SIMS
P. Delfino¹, M. Bofanova², E. De Vito³, N. Dupré², G. Lamblin¹, W. Porcher³, T. Wirtz¹, J.N. Audinot¹
¹ Luxembourg Institute of Science and Technology - Esch Sur Alzette (LU)
² Nantes Univ., CNRS, Institut des Matériaux de Nantes Jean Rouxel, IMN - Nantes (FR)
³ Univ. Grenoble Alpes, CEA-Liten - Grenoble (FR)
- 09:10 **#061** - Unlocking insights into lithium metal-solid polymer electrolyte interphase: advancements in battery analytics
A. Weiss, T. Weintraut, S.L. Benz, A. Henss
Institute of Physical Chemistry and Centre for Material Research, Justus Liebig Univ. Giessen (DE)
- 09:30 **#208** - ToF-SIMS in-depth investigation of interphase between TiNb₂O₇ electrode and electrolyte in Li-ion batteries
K. Ghamgui¹, C. Courrèges¹, A. Gajan², H. Martinez³
¹ Pau et des Pays de l'Adour Univ., E2S UPPA, CNRS, IPREM - Pau (FR)
² TOTAL-SAFT, Bordeaux (FR)
³ Centrale Casablanca, Research center for complex systems and interactions - Bouskoura (MA)
- 09:50 **#180** - Correlative characterization of individual lead halide perovskite nanocrystals
T. Šamořil¹, P. Liřka², T. Musálek³, M. Kratochvíl⁴, M. Horák³
¹ TESCAN GROUP - Brno (CZ)
² Institute of Physical Engineering, FME, BUT - Brno (CZ)
³ CEITEC BUT - Brno (CZ)
⁴ Institute of Physical and Applied Chemistry, FCH, BUT - Brno (CZ)
- 10:10 **#090** - ToF-SIMS characterization of gate-all-around devices
A. Franquet, R. Tilmann
IMEC - Leuven (BE)
- 10:30 **Break 30'**
- 11:10 Poster session 2 until 12:30
- 12:30 **Lunch break**
- 13:30 Poster session 2 until 15:00
- 14:00-14:45 Workshops **IONOPTIKA** (Hermione Room) & **ORSAY PHYSICS** (Victory Room)



THURSDAY, SEPTEMBER 12TH – MORNING

IND 2 / Industrial applications (bio, organic, and inorganic)

Victory Room

Chairs: C. Mahoney & M. Hopstaken

08:30 Time-of-Flight Secondary Ion Mass Spectrometry of inorganic materials: understanding and quantification with more information to explore

Keynote lecture

A.J. Fahey

Corning Research and Development Corporation, Corning NY (US)

09:10 **#021** - Using dynamic Secondary Ion Mass Spectrometry to advance the characterization of inkjet-printed localized polysilicon passivating contacts

L. Créon¹, J. Wang², P. Phang², J. Ren¹, M. Adier¹, B. Jablon¹, P. Peres¹

¹ CAMECA - Gennevilliers (FR)

² Australian National Univ. - Canberra (AU)

09:30 **#063** - Recent developments on a new shielded SIMS for the characterization of irradiated nuclear fuels

P. Bienvenu, I. Roure

CEA, DES, IRESNE, DEC - Cadarache (FR)

09:50 **#046** - Investigation of hair repair mechanism by cryo-ToF-SIMS equipped with an Orbitrap analyzer

Y. Hou¹, J. Qiu¹, Z. Tang², Y. Yu², L.T. Weng³

¹ Materials Characterization and Preparation Facility (GZ), Hong Kong Univ., Guangzhou (CN)

² L'Oréal Research & Innovation, - Shanghai (CN)

³ Materials Characterization and Preparation Facility (GZ), Thrust of Advanced Materials, Function Hub, Guangzhou Municipal Key Lab. of Materials Informatics, Hong Kong Univ., Guangzhou (CN)

10:10 **#185** - ToF-SIMS applications for the characterization and recovery of critical minerals

C. Hill-Svehla, B. Almusned, M. Biesinger

Surface Science Western, Univ. Western Ontario - London (CA)

10:30 **Break 40'**

11:10 Poster session 2 until 12:30

12:30 **Lunch break**

13:30 Poster session 2 until 15:00

14:00-14:45 Workshops **IONOPTIKA** (Hermione Room) & **ORSAY PHYSICS** (Victory Room)



THURSDAY, SEPTEMBER 12TH – AFTERNOON

COMP 4 / Analysis of complex samples, depth profiling and imaging

M. Crépeau Auditorium

Chairs: M. Killian & S. Van Nuffel

- 15:20 **#018** - Novel Strategies for the characterization of the battery materials by ToF-SIMS: from an in-situ exploration to an operando measurement
T. Terlier
SIMS laboratory, Shared Equipment Authority, Rice Univ. - Houston (US)
- 15:40 **#134** - 3D ToF-SIMS imaging of polyethylene oxide-lithium nitrate electrolytes in Lithium-ion batteries
D.L. Hanley¹, T. Zagorac¹, M. Counihan², R. Shavandi¹, J. Lee², Y. Zhang², S. Tepavcevic²
¹ *Univ. of Illinois - Chicago (US)*
² *Argonne National Laboratory - Lemont (US)*
- 16:00 **#045** - ToF-SIMS to discover multielement two dimensional materials
C. Dai, C. Xu, W. Ren, L. Zhang
Lab. for Materials Science, Institute of Metal Research, Chinese Academy of Sciences - Shenyang (CN)
- 16:20 **#124** - Surface analysis of TiO₂ nanoparticles using ToF-SIMS: the influence of sample preparation methods, studied in a VAMAS interlaboratory comparison
F. Bennet¹, R. Opitz¹, N. Ghoreishi¹, K. Plate¹, J.P. Barnes², A. Bellew³, A. Belu⁴, G. Ceccone⁵, E. De Vito⁶, A. Delcorte⁷, A. Franquet⁸, F. Fumagalli⁵, D. Gilliland⁵, H. Jungnickel¹, T.G. Lee⁹, C. Poleunis⁷, D. Rading¹⁰, H.K. Shon⁹, V. Spampinato⁸, J.G. Son⁹, F. Wang¹¹, Y.C. Wang⁴, Y. Zhao¹¹, A. Roloff¹, J. Tentschert¹, J. Radnik¹²
¹ *Federal Institute for Risk Assessment - Berlin (DE)*
² *Univ. Grenoble Alpes, CEA, Leti - Grenoble (FR)*
³ *Ionoptika Ltd. - Chandler's Ford (UK)*
⁴ *Medtronic Corporate Science & Technology - Minneapolis (US)*
⁵ *European Commission Joint Research Centre - Ispra (IT)*
⁶ *Univ. Grenoble Alpes, CEA, Liten - Grenoble (FR)*
⁷ *Univ. Catholique de Louvain, ICMN - Louvain-la-Neuve (BE)*
⁸ *IMEC - Leuven (BE)*
⁹ *Safety Measurement Institute, Korea Research Institute of Standard and Science - Daejeon (KR)*
¹⁰ *IONTOF Technologies GmbH - Münster (DE)*
¹¹ *NCMS, Institute of Chemistry, Chinese Academy of Sciences - Beijing (CN)*
¹² *Federal Institute for Materials Research and Testing - Berlin (DE)*

16:40

Break 40'



THURSDAY, SEPTEMBER 12TH – AFTERNOON

COMP 5 / Analysis of complex samples, depth profiling and imaging

M. Crépeau Auditorium

Chairs: M. Shamraeva & Y. Zhao

- 17:20 **#108** - Channeling proton implantation in 4H-SiC: coupling dynamic SIMS with DLTS defect profiling
O. Samperi¹, A. Azarov², V. Bobal², M. Cantiano³, M. Bertolini³, L. Vines², S. Coffa³, M.E. Fragalà¹
¹ Univ. Catania, Department of Chemical Sciences, Catania (IT)
² Univ. Oslo, Centre for Material Science and Nanotechnologies, Oslo (NO)
³ STMicroelectronics Catania, Catania (IT)
- 17:40 **#030** - Advancing photocatalytic hydrogen production: the critical role of ToF-SIMS in the detection of single-atom catalysts on TiO₂ nanotubes
S. Orangpour¹, T. Kowald¹, S. Hejazi¹, S. Mohajernia², M.S. Killian¹
¹ Chemistry and Structure of novel Materials, Univ. Siegen (DE)
² Chemical and Materials Engineering, Univ. Alberta (CA)
- 18:00 **#159** - Investigation of signal loss as a consequence of analysis under high vacuum conditions
M. Lagator¹, N. Lockyer², F. Green¹
¹ The Rosalind Franklin Institute - Didcot (UK)
² Univ. Manchester (UK)
- 18:20 **#097** - The use of Time-Of-Flight Secondary Ion Mass Spectrometry to characterize ZnO@SiO₂ nanofertilizer translocation in tomato plants following foliar application
S. Ghoshal, X. Gao, C. Henkel
McGill Univ. – Montreal (CA)



THURSDAY, SEPTEMBER 12TH – AFTERNOON

BIO 6 / Biomaterials, life science and biotechnology, tissue imaging

Hermione Room

Chairs: N.P. Lockyer & B. Hagenhoff

15:00 New generation of microscope mode Secondary Ion Mass Spectrometry imaging

Keynote lecture

Y. Jia¹, M.E. Castellani^{1,2}, Z. Takats², M. Burt¹, M. Brouard¹, F. Green^{1,2}

¹ University of Oxford Department of Chemistry, Oxford (UK)

² Rosalind Franklin Institute (UK)

15:40 **#253** - GCIB-SIMS studies of diffuse large B-cell lymphoma

S. Uzoni¹, D. Zanchin¹, V. Chatzikyriakos², N. Neittaanmäki², J. Fletcher¹

¹ Dpt. of Chemistry and Molecular Biology, Univ. Gothenburg (SE)

² Dpt. of Laboratory Medicine, Institute of Biomedicine, Sahlgrenska Academy, Univ. Gothenburg (SE)

16:00 **#132** - Mapping pollutant distribution in cells and tissues by NanoSIMS

M. Subirana¹, E. Gontier², P. Ollivier³, L. Paton⁴, J. Feldmann⁴, I. Bakour¹, M.P. Isaure¹, D. Schaumlöffel¹

¹ CNRS /Univ. Pau et des Pays de l'Adour/E2S UPPA, IPREM, UMR 5254 - Pau (FR)

² Bordeaux Imaging Center, Imagerie Electronique, Univ. Bordeaux (FR)

³ BRGM - Orleans (FR)

⁴ TESLA-Analytical Chemistry, Institute of Chemistry, Univ. Graz (AT)

16:20 **#200** - ToF-SIMS analyses of train brake particles in human epithelial Caco-2 cells

R. Rydbergh¹, L.M. Witte¹, J. Sjöblom², N. Scheers¹, P. Malmberg³

¹ Chalmers Univ. Technology, Department of Life Sciences - Gothenburg (SE)

² Chalmers Univ. Technology, Department of Chemistry and Chemical Engineering - Gothenburg (SE)

³ Chalmers Univ. Technology, Department of Mechanics and Maritime Sciences - Gothenburg (SE)

16:40

Break 40'



THURSDAY, SEPTEMBER 12TH – AFTERNOON

BIO 7 / Biomaterials, life science and biotechnology, tissue imaging

Hermione Room

Chairs: K. McHardy & A. Walker

- 17:20 **#165** - 10 years of experience with a radio frequency oxygen plasma primary ion source on NanoSIMS for biological trace metal research
D. Schaumlöffel, I.H. Valido, M.A. Subirana
CNRS / Univ. Pau et des Pays de l'Adour, IPREM UMR 5254 - Pau (FR)
- 17:40 **#120** - Structural, molecular and elemental analysis of human Locus coeruleus using correlative FIB-SIMS instruments
Z. Berro¹, M. Subirana², C. Warres³, F. Azucca⁴, L. Zecca⁴, T. Taubitz⁵, J.N. Audinot¹, M. Mittelbronn⁶, A. Biesemeier¹
¹ Advanced Instrumentation for Nano-Analytics, LIST - Belvaux (LU)
² CNRS, Univ. Pau et des Pays de l'Adour, E2S UPPA, IPREM, UMR 5254, Pau (FR)
³ NMI Natural and Medical Sciences Institute at the Univ. of Tübingen, Reutlingen (DE)
⁴ Institute of Biomedical Technologies, National Research Council of Italy, Segrate - Milan (IT)
⁵ Department of Structural Biochemistry, Max Planck Institute of Molecular Physiology, Dortmund (DE)
⁶ Luxembourg Center of Neuropathology; National Center of Pathology, Dudelange (LU)
- 18:00 **#043** - Machine learning to decipher compositional and structural features hidden in ToF-SIMS spectra of extracellular matrices
R. Zimmermann¹, M. Nitschke¹, V. Magno¹, M. Wobus², F. Stölzel³, C. Werner¹
¹ Leibniz Institute of Polymer Research Dresden, Dresden (DE)
² Medical Clinic and Policlinic I, Univ. Hospital Carl Gustav Carus, Technische Univ. Dresden (DE)
³ SCTCI, Univ. Hospital Schleswig-Holstein - Kiel (DE)
- 18:20 **#048** - Metabolic impact of lipid nanoparticle vaccine delivery using OrbiSIMS
R. Franklin¹, A. Kotowska¹, A. West², C. Newman², M. Alexander¹, D. Scurr¹
¹ Univ. Nottingham (UK)
² GSK - Stevenage (UK)



THURSDAY, SEPTEMBER 12TH – AFTERNOON

IND 3 / Industrial applications (bio, organic, and inorganic)

Victory Room

Chairs: C. Fleischmann & A. Fahey

- 15:00 ToF-SIMS applications for the development of household and personal care products
Keynote lecture
M. Okamoto¹, T. Hara¹, T. Yabuchi², M. Oguri², D. Aoki³, K. Fukushima³
¹ *Analytical Science Research Laboratory, Wakayama (JP)*
² *Analytical Science Research Laboratory, Kanagawa (JP)*
³ *Graduate School of Bioagricultural Sciences, Nagoya Univ., Aichi (JP)*
- 15:40 **#230** - Probing the chemistry in glass and glass coatings with ToF-SIMS: challenges and applications
C. Mahoney, A. Fahey, T. Dimond, C. Cushman
Corning Research and Development Corporation, Corning NY (US)
- 16:00 **#119** - ToF-SIMS with correlation analysis for characterizing SEI layer on battery electrodes
S-J. Chang, E.J. Kim, Y.H. Lee
National Nano Fab Center - Daejeon (KR)
- 16:20 **#082** - ToF-SIMS and OrbiSIMS mapping of battery surface and interface chemistry
Y. Zhou¹, S. Marchesini¹, X. Yao¹, Y. Zhao², I. Gilmore¹
¹ *National Physical Laboratory, Teddington - London (UK)*
² *Dyson School of Design Engineering, Imperial College London, London (UK)*

16:40

Break 40'

IND 4 / Industrial applications (bio, organic, and inorganic)

Victory Room

Chairs: C. Hill-Svehla & L. Créon

- 17:20 Applications of SIMS in advanced nano-electronics R&D
Keynote lecture
M.J.P. Hopstaken, S. Molis, C. Lavoie
IBM T.J. Watson Research Center, Yorktown Heights NY (US)
- 18:00 ToF-SIMS: instrument innovations and industrial applications
Keynote lecture
D. Rading
IONTOF Technologies GmbH, Münster (DE)



FRIDAY, SEPTEMBER 13TH – MORNING

COMP 6 / Analysis of complex samples, depth profiling and imaging

M. Crépeau Auditorium

Chairs: N. Nuns & M-A. Pinault-Thaury

- 08:30 ToF-SIMS study of the electrochemical isotope effects for the lithium-ion batteries
Keynote lecture
Y. Zhao, J. Chou, Y. Zhang, X. Li, F. Wang, S. Xin
Institute of Chemistry, Chinese Academy of Sciences - Beijing (CN)
- 09:10 **#235** - In situ ToF-SIMS analysis of solid-liquid interfaces
F. Wang, Y. Zhang
Institute of Chemistry Chinese Academy of Sciences - Beijing (CN)
- 09:30 **#054** - Improvements in ToF-SIMS depth profiling and quantification of metals in alloys by H₂ and O₂ flooding
J. Ekar¹, S. Kos², J. Kovač¹
¹ *Jožef Stefan Institute, Ljubljana (SI)*
² *Geological Survey of Slovenia, Ljubljana (SI)*
- 09:50 **#232** - SIMS analysis of transmuted nuclides in neutron-fluence detectors
J. Lorincik, L. Viererbl, I. Elantjev, A. Krechlerova, H. Assmann Vratislavska
Research Centre Rez - Husinec (CZ)

10:10

Break 40'

BIO 8 / Biomaterials, life science and biotechnology, tissue imaging

M. Crépeau Auditorium

Chairs: G. Trindade & M. Noun

- 10:50 **#162** - OrbiSIMS lipidomics to understand biomaterials performance in vivo
M. Alexander
School of Pharmacy, Univ. Nottingham (UK)
- 11:10 **#188** - Surface analysis of PEGylated liposomes for nanomedicine applications
F. Fumagalli¹, G. Bucher¹, G. Ceccone¹, A. Welle², D. Mehn¹
¹ *European Commission JRC - Ispra (IT)*
² *KNMFi-KIT - Karlsruhe (DE)*
- 11:30 **#196** - Analysis of a pharmaceutical formulation using hybrid-SIMS
D. Breitenstein¹, J. Van Rüschen¹, A. Pirkl², G. Winkler¹, B. Hagenhoff¹
¹ *Tascon GmbH - Münster (DE)*
² *IONTOF GmbH - Münster (DE)*
- 11:50 **#138** - Plasma membrane lipid composition and turnover reflecting the status and behaviour of neuronal cells elucidated by ToF-SIMS imaging
E. Berlin¹, A.A. Lork¹, M. Bornecrantz¹, C. Ernst², N.T.N. Phan¹
¹ *Univ. Gothenburg (SE)*
² *McGill Univ. - Montreal (CA)*
- 12:30 **Closing ceremony:** AVS Awards, SFV Awards, Ionoptika "Rowland & Christine Hill" Awards
Concluding remarks, Goodbye and See you in 2 years



FRIDAY, SEPTEMBER 13TH – MORNING

HIRES 2 / High mass/lateral resolution analysis

Hermione Room
Chairs: D. Scurr & J. Zakel

- 08:30 Stigmatic isotope imaging of solar system materials using cryogenic LG-SIMS
Keynote lecture
N. Sakamoto
Creative Research Institution, Hokkaido Univ. - Sapporo (JP)
- 09:10 **#004** - Orbi-SIMS mediated metabolomics analysis of pathogenic tissue at single cell resolution
M. Rohnke¹, C. Kern¹, P. Kreuzaler²
¹ *Justus Liebig Univ. - Giessen (DE)*
² *Univ. Cologne (DE)*
- 09:30 **#022** - High mass resolution multireflection Time-of-Flight Secondary Ion Mass Spectrometer
P. Chen, Y. Chen, H. Li
Dalian Institute of Chemical Physics, Chinese Academy of Sciences - Dalian (CN)
- 09:50 **#128** - In operando simultaneous dual-polarity SIMS characterisation of the solid-electrolyte interface in sodium-ion batteries
S. Sukumaran¹, R. J Chater¹, S. Fearn¹, G. Cooke², N. Smith³, S.J Skinner¹
¹ *Imperial College London - London (UK)*
² *Hiden Analytical - London (UK)*
³ *Oregon Physics - Oregon (US)*

10:10

Break 40'

CORR 4 / Correlative analysis or multitechnique analysis

Hermione Room
Chairs: A. Biesemeier & R. Tilmann

- 10:50 Correlative studies of ion migration and chemical reactivity in electronic materials via combine AFM/ToF-SIMS platform
Keynote lecture
A.V. levlev
The Center for Nanophase Materials Sciences, Oak Ridge National Laboratory (US)
- 11:30 **#241** - Study of In_{0.53}Ga_{0.47}As/ InP/InAlAs/InP heterostructures by ToF-SIMS and HAXPES
G. Tsamo Tagougue^{1,2}, E. Martinez¹, M. Veillerot¹, V. Thoréton¹, F. Bassani², M. Martin², T. Baron²
¹ *Univ. Grenoble Alpes, CEA, Leti, Grenoble (FR)*
² *Univ. Grenoble Alpes, CNRS, CEA/LETI Minatec, Grenoble INP, LTM, Grenoble (FR)*
- 11:50 **#006** - The effect of using KOH instead of LiOH on corrosion behavior of 304 Stainless Steel in simulated pressurized water reactor water chemistry
D. Kaoumi¹, F.Y. Tsai¹, C. Zhou¹, K. Yano², D. Schreiber²
¹ *North Carolina State Univ. - Raleigh (US)*
² *Pacific Northwest National Laboratory (US)*
- 12:10 **#148** - SIMS based correlative microscopy for nanoscale imaging of hydrogen in materials prone to hydrogen embrittlement
A. Suresh Kumar, T. Wirtz, S. Eswara
LIST - Esch Sur Alzette (LU)



FRIDAY, SEPTEMBER 13TH – MORNING

ML 3 / Machine learning, data analysis

Victory Room – Chairs: A. Franquet & A. Delcorte

- 08:30 SIMS: transforming data complexity into a significant asset with machine learning
Keynote lecture
P. Pigram, W. Gardner, S. Bamford, D. Winkler, B. Muir, R. Sun, S. Yoong Wong
La Trobe Univ., Melbourne (AU)
- 09:10 **#192** - Use of secondary ion images to depth correct 3D SIMS depth profiling images of biomaterials without correlated topography measurements
M. Kraft, M. Brunet, B. Gorman
Univ. Illinois Urbana-Champaign - Urbana (US)
- 09:30 **#143** - Weakly supervised learning for enhanced spatial-spectral analysis of ToF-SIMS images
W. Gardner, P. Pigram
La Trobe Univ. - Bundoora (AU)
- 09:50 **#210** - Identification of markers for papillomavirus-induced tumors using ToF-SIMS Imaging
M. Shamraeva¹, T. Visvikis¹, S. Zoidis¹, J. Hu², Y. Zhu³, N.D. Christensen², I.G.M. Anthony¹, S. Van Nuffel¹
¹ Maastricht MultiModal Molecular Imaging Institute (M4i), Maastricht Univ. (NL)
² The Jake Gittlen Laboratories for Cancer Research, Hershey (US)
³ Pathology department, Pennsylvania State Univ. College of Medicine, Hershey (US)

10:10

Break 40'

GEO 3 / Geology, geo-and cosmochemistry, archaeology, environment

Victory Room
Chairs: C.E. Jilly & C. Bouvier

- 10:50 Characterization of traditional coloring materials using ToF-SIMS
Keynote lecture
Ye. Lee¹, J. Lee¹, Y. Jung Jang^{1,2}, Yo. Lee^{1,3}
¹ Advanced Analysis and Data Center, Korea Institute of Science and Technology, Seoul (KR)
² Department of Material Science and Engineering, Korea Univ., Seoul (KR)
³ Department of Chemistry, Yosei Univ., Seoul (KR)
- 11:30 **#130** – Constraining the meteorite flux of the inner solar system using LG-SIMS analysis of impact glass spherules – challenges and progress
M. Whitehouse¹, A. Nemchin², E. Salin³, M. Norman⁴, N. Timms²
¹ Swedish Museum of Natural History – Stockholm (SE)
² Curtin Univ. – Perth (AU)
³ Åbo Akademi Univ. – Turku (FI)
⁴ Australian National Univ. – Canberra (AU)
- 11:30 **#113** - Advances in fast mass microscopy for imaging of large areas
E. Sandström¹, M. Shamraeva¹, K.G. Garcia¹, P. Huysmans², P. Laeven², R.M.A. Heeren¹, S. Van Nuffel¹, I.G.M. Anthony¹
¹ M4i Institute, Maastricht Univ. - Maastricht (NL) - ² IDEE, Maastricht Univ. - Maastricht (NL)
- 11:50 **#023** - Application of ToF-SIMS to the analysis of samples from asteroid Bennu
W. Rickard¹, N. Timms¹, J. Barnes², D. Saxey¹, F. Jourdan¹, P. Bland¹, S. Reddy¹, T. Ireland³, X. Sun¹, A. Nguyen⁴, H. Connolly², D. Lauretta²
¹ Curtin Univ. - Perth (AU) - ² Univ. Arizona - Tucson (US)
³ Univ. Queensland - Brisbane (AU) - ⁴ ARES, NASA Johnson Space Centre - Houston (US)



SIMS-24

24th International Conference on Secondary Ion Mass Spectrometry

8-13 September 2024

La Rochelle, France

www.sims-24.com

Last update: 11 September 2024