



## POSTER SESSIONS

### Poster Session #1

Tuesday 10 September (11:10 – 15:00)

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

- BIO-P1-008** SIMS 7F: Enhance nuclear safety with insights into processes and origins  
**D. Suhard, Y. Gueguen, G. Alkiviadis, C. Bouvier**  
*IRSN (FR)*
- BIO-P1-015** Molecule prediction in ToF-SIMS spectra for peptide and lipid mixture samples using machine learning  
**M. Iwahori, D. Hayash, S. Aoyagi**  
*Seikei Univ. - Tokyo (JP)*
- BIO-P1-056** Localization and impact of perfluorooctanoic acid (PFOA) in vitro and in vivo by multimodal imaging  
**J-N. Audinot<sup>1</sup>, C. Stoffels<sup>1</sup>, T. Angerer<sup>1</sup>, G. Frache<sup>1</sup>, S. Cambier<sup>1</sup>, H. Robert<sup>2</sup>,  
A. Gutleb<sup>1</sup>, T. Wirtz<sup>1</sup>, M. Mercier-Bonin<sup>2</sup>**  
<sup>1</sup> *Luxembourg Institute of Science and Technology - Belvaux (LU)*  
<sup>2</sup> *INRAE - Toulouse (FR)*
- BIO-P1-110** High-throughput quantitative analysis of amino acids in freeze-dried drops using Time-of-Flight Secondary Ion Mass Spectrometry  
**H. Lim, S. Lee, J.S. Jin, M.S. Kim**  
<sup>1</sup> *Korea Basic Science Institute (KBSI) (KR)*  
<sup>2</sup> *Daegu Gyeongbuk Institute of Science and Technology (DGIST) (KR)*
- BIO-P1-152** Measurement of metabolite and lipid changes in a 6-hydroxydopamine-induced Parkinson's disease mouse model using mass spectrometry  
**H. Shon<sup>1</sup>, S.Y. Lee<sup>1</sup>, J.H. Moon<sup>2</sup>, G.S. Lee<sup>2</sup>, T.G. Lee<sup>2</sup>, J.G. Son<sup>2</sup>**  
<sup>1</sup> *Korea Research Institute of Science and Technology - Daejeon (KR)*  
<sup>2</sup> *Korea Research Institute of Bioscience and Biotechnology - Daejeon (KR)*
- BIO-P1-168** 2D TMD-based LDI-ToF studies for therapeutic drug monitoring of human blood samples  
**T. Lee<sup>1</sup>, S. Joh<sup>1</sup>, J. Yoo<sup>1</sup>, H.K. Na<sup>1</sup>, Y.E.S.K.Y. Son<sup>1</sup>, S. Lee<sup>1</sup>, M.S. Jeong<sup>2</sup>, S.G. Lee<sup>3</sup>**  
<sup>1</sup> *KRISS - Daejeon (KR)*  
<sup>2</sup> *Hanyang Univ. - Seoul (KR)*  
<sup>3</sup> *Yunsei Univ. College of Medicine - Seoul (KR)*
- BIO-P1-174** Time-of-Flight Secondary Ion Mass Spectrometry for analyzing interactions between oral care products and dental hard tissues  
**N. Michler<sup>1</sup>, A. Kiesow<sup>1</sup>, M. Morawietz<sup>1</sup>, S. Gierth<sup>1</sup>, F. Lippert<sup>2</sup>, J. Gruner<sup>3</sup>,  
E. Schneiderman<sup>3</sup>, S. St. John<sup>3</sup>**  
<sup>1</sup> *Fraunhofer Institute for Materials and Systems IMWS - Halle (Saale) (DE)*  
<sup>2</sup> *Indiana Univ. School of Dentistry - Indianapolis, IN (US)*  
<sup>3</sup> *The Procter & Gamble Company - Mason, OH (US)*



- BIO-P1-205** Analyte migration in ME-SIMS imaging  
**T. Adolfs, M. Bäumer, R.E. Peterson, H.F. Arlinghaus, B.J. Tyler**  
*Institute of Physics, Univ. Münster (DE)*
- BIO-P1-267** Characterization of cellular pigment composition in chameleon chromatophors by ToF-SIMS imaging  
**T. Fu<sup>1</sup>, P.Y. Helleboid<sup>2</sup>, A. Tzika<sup>2</sup>**  
<sup>1</sup> *Lab. of Advanced Technology, Dpt. Quantum Matter Physics, Univ. Geneva (CH)*  
<sup>2</sup> *Lab. of Artificial and Natural Evolution, Dpt. Genetics and Evolution, Univ. Geneva (CH)*
- BIO-P1-269** Investigating the effects of X-ray irradiation on membrane lipids in breast cancer cells using ToF-SIMS  
**C. Rossi<sup>1</sup>, A.C. Heuskin<sup>2</sup>, L. Houssiau<sup>3</sup>**  
<sup>1</sup> *Namur Institute of Structured Matter & NAMur Research Institute for Life Science, Univ. Namur (BE)*  
<sup>2</sup> *NAMur Research Institute for Life Science, Univ. Namur (BE)*  
<sup>3</sup> *Namur Institute of Structured Matter, Univ. Namur (BE)*
- BIO-P1-272** ToF-SIMS investigation of the link between spatial oligodendrocytes lineage heterogeneity and myelin sheath lipid composition  
**A. Smits, X. Delvaux, L. Houssiau**  
*Univ. Namur - LISE Research Unit - Namur (BE)*

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

- COMP-P1-073** ToF-SIMS analysis of transition metal oxide surfaces hosting 2D electron gases  
**A. Lucero Manzano<sup>1</sup>, E.A. Martínez<sup>2</sup>, E.D. Cantero<sup>3</sup>, O. Grizzi<sup>4</sup>, E.A. Sánchez<sup>3</sup>, F.Y. Bruno<sup>2</sup>**  
<sup>1</sup> *Gerencia de Física, Centro Atómico Bariloche - S. C. De Bariloche (AR)*  
<sup>2</sup> *(GFMC) Dpt. de Física de Materiales, Univ. Complutense de Madrid (UCM) - Madrid (ES)*  
<sup>3</sup> *Instituto de Nanociencia y Nanotecnología (CNEA - CONICET), - S.C. de Bariloche (AR)*  
<sup>4</sup> *Centro Atómico Bariloche - S.C. de Bariloche (AR)*
- COMP-P1-215** ToF-SIMS analysis of Au/Ge/Ni ohmic contacts for n GaAs  
**A. Lucero Manzano<sup>1</sup>, A. Prado<sup>2</sup>, L. Salazar Alarcón<sup>2</sup>, O. Grizzi<sup>3</sup>, H. Pastoriza<sup>2</sup>**  
<sup>1</sup> *Gerencia de Física, Centro Atómico Bariloche - S.C. de Bariloche (AR)*  
<sup>2</sup> *Instituto Balseiro, Instituto de Nanociencia y Nanotecnología (CNEA - CONICET), Nodo Bariloche - S.C. de Bariloche (AR)*  
<sup>3</sup> *Centro Atómico Bariloche - S.C. De Bariloche (AR)*
- COMP-P1-092** ToF-SIMS investigation of nanostructured TiO<sub>2</sub>-based Films for enhanced environmental remediation  
**E. Malannata, A. Auditore, A. Licciardello**  
*Univ. Catania, Department of Chemical Sciences - Catania (IT)*
- COMP-P1-096** Orbitrap<sup>TM</sup>-SIMS to improve the accuracy of the As quantification in SiGe  
**A. Franquet<sup>1</sup>, A. Pirkl<sup>2</sup>, R. Tilmann<sup>1</sup>**  
<sup>1</sup> *IMEC - Leuven (BE)*  
<sup>2</sup> *IONTOF - Munster (DE)*
- COMP-P1-115** ToF-SIMS study on the SEI formation on hard carbon electrodes in sodium ion batteries  
**D. Schäfer, M. Rohnke**  
*Justus Liebig Univ. - Giessen (DE)*



- COMP-P1-129** Functional bevels created in ToF-SIMS for in situ cross-section characterisation of solid-electrolytes  
**S. Sukumaran<sup>1</sup>, S. Fearn<sup>1</sup>, R. J Chater<sup>1</sup>, G. Cooke<sup>2</sup>, S. J Skinner<sup>1</sup>**  
<sup>1</sup> Imperial College London - London (UK)  
<sup>2</sup> Hiden Analytical - London (UK)
- COMP-P1-144** Characterization of ion-implanted 4H-SiC for dopant analysis in SiC power semiconductors  
**T. Hong, T. Jang, M. Byeon, M. Kang**  
Korea Basic Science Institute - Busan (KR)
- COMP-P1-184** Molecular and structural characterisation of individual lipid nanoparticles using 3D ToF-SIMS and TEM under cryogenic conditions  
**P. Sjövall<sup>1</sup>, T. Nilsson-Pingel<sup>2</sup>, A. Altskär<sup>2</sup>, N. Lorén<sup>2</sup>, L. Poul<sup>3</sup>**  
<sup>1</sup> RISE Research Institutes of Sweden - Borås (SE)  
<sup>2</sup> RISE Research Institutes of Sweden - Göteborg (SE)  
<sup>3</sup> Curadigm SAS - Paris (FR)
- COMP-P1-195** Preparation and characterization of sodiated non-graphitic hard carbon anodes for sodium-ion batteries by ToF-SIMS  
**P. Dippell, D. Schaefer, M. Rohnke**  
Justus Liebig Univ. - Giessen (DE)
- COMP-P1-246** Characterization of passivation layers on graphite and NMC electrodes: insights from SIMS and HAXPES analysis  
**A. Alsaedi, A. Walton, N. Lockyer**  
School of Chemistry, Univ. Manchester (UK)
- COMP-P1-257** Ionic liquid based electroplating as an alternative to traditional deposition chemistries  
**C. Longo, D. Sconyers, J. Maurer**  
US Army DEVCOM AC - Watervliet (US)
- COMP-P1-264** Chemical and electrical characterization of Mg-doped GaN  
**S. Vangelista<sup>1</sup>, M. Perego<sup>2</sup>, A. Patelli<sup>2</sup>, S. Spadoni<sup>1</sup>, R. Pezzuto<sup>1</sup>, F. Milanese<sup>1</sup>, P. Colpani<sup>1</sup>**  
<sup>1</sup> STMicroelectronics - Agrate B.za (IT)  
<sup>2</sup> IMM-CNR, Unit of Agrate Brianza - Agrate B.za (IT)

## FUN / Fundamental science

- FUN-P1-031** Development of the imaging mass spectrometry by the addition of oaToFMS to QIT-ToF-SIMS  
**C. Choi, J.Y. Baek, J.Y. Eo**  
Korea Basic Science Institute - Cheongju-Si (KR)
- FUN-P1-070** Observation of ripple development on Si surface caused by oblique incident O<sub>2</sub><sup>+</sup> ion beam over a range of ion parameters  
**M. Hatada<sup>1</sup>, T. Miyamoto<sup>2</sup>**  
<sup>1</sup> Toray Research Center, Inc. (Retired) - Otsu (JP)  
<sup>2</sup> Toray Research Center, Inc. - Otsu (JP)



- FUN-P1-094** Secondary emission processes induced by MeV gold nanoparticles  
**S. Della Negra, D. Jacquet, I. Ribaud**  
*IJCLab, UMR9012 – CNRS / Univ. Paris-Saclay / Univ. Paris Cité - Orsay (FR)*
- FUN-P1-122** Energy loss straggling for protons in CaF<sub>2</sub> compound in the MeV/amu energy domain  
**D. Moussa<sup>1</sup>, A. Belhout<sup>1</sup>, S. Damache<sup>2</sup>, S. Ouichaoui<sup>1</sup>, W. Yahiacherif<sup>2</sup>, M. Saad<sup>2</sup>**  
<sup>1</sup> Faculty of Physics Univ. Sciences and Technology HB, Algiers (DZ)  
<sup>2</sup> DATN CRNA, Algiers (DZ)
- FUN-P1-133** Nanoprojectile-SIMS: a zeptomole probe with insight into nanoscale topography  
**E. Schweikert**  
*Texas A&M Univ. - College Station, TX (US)*
- FUN-P1-263** Investigation of sub-nm binary oxidic surface modifications on mixed ionic electronic conductors with ToF-SIMS: oxidic overlayer stability and ionic interdiffusion behavior  
**F. Fahrnberger<sup>1</sup>, M. Siebenhofer<sup>2</sup>, M. Hahn<sup>1</sup>, M. Sauer<sup>3</sup>, A. Foelske<sup>3</sup>, G. Friedbacher<sup>1</sup>, M. Kubicek<sup>1</sup>, H. Hutter<sup>1</sup>**  
<sup>1</sup> Institute of Chemical Technologies and Analytics, TU Wien, Vienna (AT)  
<sup>2</sup> Massachusetts Institute of Technology, Cambridge (US)  
<sup>3</sup> Analytical Instrumentation Center, TU Wien, Vienna (AT)

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

- GEO-P1-077** Analytical procedure for the isotopic measurement of uranium at particle scale by LG-SIMS  
**M. Cornaton, A.L. Fauré, F. Pointurier**  
*CEA - Arpajon (FR)*
- GEO-P1-236** Novel approach to enhance organic acid adsorption on rock surfaces  
**K. Norrman, A. Al-Yaseri**  
*King Fahd Univ. of Petroleum and Minerals (KFUPM) - Dhahran (SA)*

## HIRES / High mass/lateral resolution analysis

- HIRES-P1-059** High-lateral resolution and precise chemical information – Combination of HIM-SIMS and Hybrid-SIMS for interfacial analysis of Composite Polymer Electrolytes  
**T. Weintraut<sup>1</sup>, V. Benito Olmos<sup>2</sup>, J.N. Audinot<sup>2</sup>, A. Henss<sup>1</sup>**  
<sup>1</sup> Justus-Liebig-Univ. - Giessen (DE)  
<sup>2</sup> Luxembourg Institute of Science and Technology - Belvaux (LU)
- HIRES-P1-225** Preliminary results of the VAMAS Interlaboratory comparison (TWA 2 A37): OrbiSIMS noise, linearity, and optimisation of secondary ion transmission  
**G.F. Trindade, I. Gilmore**  
*National Physical Laboratory - London (UK)*
- HIRES-P1-266** Report of the 101<sup>st</sup> IUVESTA workshop on high performance SIMS instrumentation and machine learning / artificial intelligence methods for complex data  
**I. Gilmore<sup>1</sup>, G. Trindade<sup>1</sup>, T. Silva<sup>2</sup>, S. Aoyagi<sup>3</sup>, H. Tian<sup>4</sup>, J.N. Audinot<sup>5</sup>, S. Van Nuffel<sup>6</sup>**  
<sup>1</sup> National Physical Laboratory (UK), <sup>2</sup> Univ. Sao Paulo (BR), <sup>3</sup> Seikei Univ. (JP)  
<sup>4</sup> Univ. Pittsburgh (JP), <sup>5</sup> Luxembourg Institute of Science and Technology (LU)  
<sup>6</sup> Maastricht Univ. (NL)



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

- IND-P1-002** Using ToF-SIMS and PCA to qualify different foils in a chip picking process  
**S. Reichmaier, A. Lyapin**  
*Physical Electronics GmbH - Munich (DE)*
- IND-P1-007** Industrial examples of glass analyses by ToF-SIMS and XPS  
**L. Dupuy, J. Amalric**  
*SERMA TECHNOLOGIES - Ecully (FR)*
- IND-P1-172** Characterization of nanometric multilayered hard coatings by SIMS  
**J. Niclout, B. El Adib, J.B. Chemin, P. Choquet, N. Valle**  
*Luxembourg Institute of Science and Technology - Belvaux (LU)*
- IND-P1-193** Metallic 3D-print materials analysed by Secondary Ion Mass Spectrometry  
**D. Breitenstein<sup>1</sup>, A. Akhmetova<sup>1</sup>, M. Glauche<sup>2</sup>, D. Rommel<sup>3</sup>, M. Kluge<sup>4</sup>, E. Tallarek<sup>1</sup>**  
<sup>1</sup> *Tascon GmbH - Münster (DE)*  
<sup>2</sup> *Implantcast GmbH - Münster (DE)*  
<sup>3</sup> *Concept Laser GmbH/GE Additive - Münster (DE)*  
<sup>4</sup> *Fraunhofer Research Institution for Additive Manufacturing (IAPT) - Münster (DE)*
- IND-P1-197** Surface investigation of layer-by-layer grown SurMOFs for energy applications  
**A. Auditore, V. Spampinato, R. Ruffino, A. Licciardello**  
*Univ. Catania (IT)*
- IND-P1-273** Depth Profiling of AlScN and AlYN/GaN Heterostructures using ToF-SIMS  
**P. Stranak<sup>1</sup>, I. Streicher<sup>2</sup>, S. Leone<sup>1</sup>, M. Prescher<sup>1</sup>, L. Kirste<sup>1</sup>**  
<sup>1</sup> *Fraunhofer Institute for Applied Solid State Physics IAF - Freiburg (DE)*  
<sup>2</sup> *CNR-Instituto di Microelettronica e Microsistemi CNR-IMM - Catania (IT)*

## ML / Machine learning, data analysis

- ML-P1-014** Development of a new annotation method for predicting organic molecules in ToF-SIMS spectra using machine learning  
**T. Masuda<sup>1</sup>, M. Fujita<sup>2</sup>, T. Ueno<sup>2</sup>, D. Hayashi<sup>1</sup>, S. Aoyagi<sup>1</sup>**  
<sup>1</sup> *Seikei Univ. - Tokyo (JJP)*  
<sup>2</sup> *JSR Corporation - Mie (JP)*
- ML-P1-157** Analysis of ToF-SIMS data using correlation analysis  
**K. Moritani, T. Nakamura, N. Inui**  
*Univ. Hyogo - Himeji (JP)*

## INST / Instrumentation & novel ion beams

- INST-P1-020** An innovative SIMS platform with a multi-ion species FIB for high-resolution nano-analytics and ion imaging  
**A. Ost<sup>1</sup>, T. Richter<sup>1</sup>, O. De Castro<sup>2</sup>, P. Gnauck<sup>1</sup>, J.N. Audinot<sup>2</sup>, T. Wirtz<sup>2</sup>**  
<sup>1</sup> *Raith GmbH - Dortmund (DE)*  
<sup>2</sup> *Luxembourg Institute of Science and Technology (LIST) - Belvaux (LU)*
- INST-P1-125** The new CAMECA NanoSIMS-HR  
**A. Thomen, M. Debliqui, C. Defouilloy, L. Arnoldi, N. Saquet, S. Vitchev Fichou, J. Farcy, L. Renaud**  
*CAMECA (France)*



- INST-P1-221** Correlative FIB / SEM / oToF-SIMS nano-characterization used for Li isotopic tracing in solid state battery field  
**J. Almoríc<sup>1</sup>, T. Genieys<sup>1</sup>, T. Meyer<sup>2</sup>, E. De Vito<sup>3</sup>**  
<sup>1</sup>Orsay Physics - Fuveau (FR)  
<sup>2</sup>Justus-Liebig-Univ. Giessen, IPC-Giessen - Giessen (DE)  
<sup>3</sup>Univ. Grenoble Alpes, CEA, DES, LITEN - Grenoble (FR)

## CORR / Correlative analysis or multitechnique analysis

- CORR-P1-025** Design method and construction of the Schwarzschild microscope with high numerical aperture for Secondary Ion Mass Spectrometry  
**Y. Chen, P. Chen, L. Haiyang**  
Dalian Key Laboratory for Online Analytical Instrumentation, Dalian (CN)
- CORR-P1-052** Practical and easy-to-access tools for SIMS image data processing and correlative analysis  
**P. Delfino, T. Wirtz, J.N. Audinot**  
Luxembourg Institute of Science and Technology - Esch Sur Alzette (LU)
- CORR-P1-060** In-situ ToF-SIMS investigation of battery cells to unveil electrochemical reactions  
**T. Weintraut, K. Vettori, A. Henss**  
Justus-Liebig-Univ. - Giessen (DE)
- CORR-P1-146** Degradation of nickel-rich layered oxide cathode at high potentials in li-ion batteries  
**S. Schröder<sup>1</sup>, K. Vettori<sup>1</sup>, L. Ahrens<sup>2</sup>, R. Wilhelm<sup>3</sup>, A. Henss<sup>1</sup>, J. Jürgen<sup>1</sup>**  
<sup>1</sup>Institute of Physical Chemistry & Center of Materials Research, Univ. Giessen (DE)  
<sup>2</sup>GFE, RWTH Aachen Univ. and ER-C at Forschungszentrum Jülich - Aachen (DE)  
<sup>3</sup>Dpt. of Chemistry and Catalysis Research Center, Technical Univ. Munich, Munich (DE)
- CORR-P1-161** In-situ investigation of interfacial properties and stability of polymer electrolytes towards Na metal anode with ToF-SIMS and XPS  
**T. Meyer, T. Weintraut, A. Weiss, A. Henss**  
Institute of Physical Chemistry and Centre for Material Research, Univ., Giessen (DE)
- CORR-P1-173** Characterisation of Aluminium-lithium alloys using NanoSIMS and EPMA  
**Y. Ding, K. Moore, R. Joseph**  
Univ. Manchester (UK)
- CORR-P1-212** Toward implementing a new electrochemical cell for in-situ ToF-SIMS analysis of Solid-State Batteries  
**A. Lallaoui<sup>1</sup>, C. Courrèges<sup>1</sup>, C. Mawele Loudy<sup>2</sup>, H. Martinez<sup>1</sup>**  
<sup>1</sup>Pau et des Pays de l'Adour Univ., E2S UPPA, CNRS, IPREM - Pau (FR)  
<sup>2</sup>R&D Center - Bordeaux (FR)
- CORR-P1-233** Ion-beam analysis of calcium fluoride deposited on self-supporting nanoscale aluminum foils  
**S. Damache<sup>1</sup>, D. Moussa<sup>2</sup>, W. Yahia-Cherif<sup>1</sup>, A. Belhout<sup>2</sup>, S. Ouichaoui<sup>3</sup>**  
<sup>1</sup>CRNA, Algiers (DZ)  
<sup>2</sup>Faculty of Physics, USTHB, Algiers (DZ)  
<sup>3</sup>Retired - Algiers (DZ)
- CORR-P1-247** Dislocation analysis of epitaxial GaN by using SIMS, CL and TEM  
**M-C. Huang, M. Wang, M. Hsu, P. Chiu, K. Hsu**  
Materials Analysis Technology Inc. - Hsinchu (Taiwan, CN)