

# SIMS 23 2022 Program Overview

Room /Time	Great Lakes A2-A3	Great Lakes B	Great Lakes C	Great Lakes Promenade & A1
SuA	SC-SuP: SIMS School - IUVSTA Short Courses			
MoM		PS1-MoM: Plenary Session I SS-MoM2: Industrial Applications I		
MoM2			SS-MoM3: Energy Storage I	
MoA		SS-MoA1: Bio Materials SS+DI-MoA3: Industrial Applications II	SS-MoA2: Energy Storage II SS-MoA4: Geosciences	
TuM		PS2-TuM: Plenary Session II		
TuM2	SS-TuM1: Cells and Tissue I	RA+BS+FM+SS-TuM2: Beams, Theory Optimization and Methods	FM+SS-TuM3: Microelectronics	
TuA	BS+FM+SS-TuA1: Cells and Tissue II SS-TuA4: Cells and Tissue IV	BS+FM+SS-TuA2: Cells and Tissue III VS-TuA: Vendor Session	SS-TuA3: Microelectronics	
TuP				Poster Sessions
WeM		FM-WeM1: Fundamentals - Secondary Ion Formation I FM-WeM3: Fundamentals - Secondary Ion Formation II	RA-WeM2: Cluster and Novel Ion Sources SS+RA-WeM4: High Resolution and MS/MS Methods I	
ThM		DI-ThM1: Data and Data Processing RA-ThM3: HR Imaging and Spectrometry	SS-ThM2: Environmental SS-ThM4: Polymers	
ThA		FM-ThA1: High Resolution and MS/MS Methods II SS+BS+FM-ThA3: High Resolution and MS/MS Methods III	BS+SS-ThA2: Polymers & Multi-Technique BS+SS-ThA4: Multi-Technique	

# Sunday Afternoon, September 18, 2022

<b>SIMS School: IUVSTA Short Courses</b> <b>Room Great Lakes A2-A3 - Session SC-SuP</b> <b>SIMS School - IUVSTA Short Courses</b>	
<b>11:30am</b>	<b>Welcome, Introductions &amp; Thank Yous</b>
<b>11:40am</b>	<b>INVITED: SC-SuP-2</b> Fundamentals of SIMS - Views from Ground Zero and Beyond, <i>Arnaud Delcorte</i> , Université Catholique de Louvain, Belgium
<b>12:40pm</b>	<b>INVITED: SC-SuP-8</b> SIMS Analysis of Biological Materials, <i>Michael J. Taylor</i> , Pacific Northwest National Laboratory
<b>1:40pm</b>	<b>INVITED: SC-SuP-14</b> SIMS Inorganic Depth Profiling, <i>Jerry Hunter</i> , University of Wisconsin
<b>2:40pm</b>	<b>BREAK</b>
<b>3:00pm</b>	<b>INVITED: SC-SuP-22</b> Multivariate Analysis Methods for Secondary Ion Mass Spectrometry and Related Techniques, <i>Jean-Paul Barnes</i> , CEA-Leti, France
<b>4:00pm</b>	<b>INVITED: SC-SuP-28</b> SIMS Analysis of Organic Materials with Industrial Applications, <i>Michaeleen Pacholski</i> , Dow Chemical Company

# Monday Morning, September 19, 2022

<b>Room Great Lakes B</b>		
<b>8:30am</b>	<b>Welcome, Introductions &amp; Thank You</b>	<b>Plenary Session</b> <b>Session PS1-MoM</b>  <b>Plenary Session I</b> <b>Moderator:</b> <b>Jerry Hunter, University of Wisconsin</b>
<b>8:40am</b>	<b>INVITED: PS1-MoM-2</b> Plenary Lecture: Oxygen Isotope Analysis in Carbonates: Accuracy vs. Precision, <i>John Valley, N. Kita, K. Kitajima</i> , University of Wisconsin-Madison	
<b>9:40am</b>	<b>BREAK</b>	
<b>10:00am</b>	<b>INVITED: SS-MoM2-10</b> The Characteristics of Multi-material Depth Profiles with Low-Energy Atomic and Diatomic Ion Beams and Cluster Ion Beams of Ar and O <sub>2</sub> , <i>Albert Fahey, M. Zhang</i> , Corning Inc.	<b>SIMS Solutions in Materials and Life Sciences</b> <b>Session SS-MoM2</b> <b>Industrial Applications I</b> <b>Moderators:</b> <b>Christine Mahoney</b> , Corning Research and Development Corporation, <b>Alan Spool</b> , Western Digital Corporation
<b>10:40am</b>	<b>SS-MoM2-14</b> Analysis of Alkali and Trace Species in Silicate Glasses, <i>Timothy Dimond, A. Fahey, C. Mahoney, C. Cushman</i> , Corning Inc.	
<b>11:00am</b>	<b>SS-MoM2-16</b> TOF-SIMS Surface Hydroxyl Measurements on Multicomponent Glasses, <i>Cody Cushman, N. Smith, J. Banerjee, C. Mahoney, A. Fahey, T. Dimond</i> , Corning Incorporated; <i>M. Linford</i> , Brigham Young University	
<b>11:20am</b>	<b>SS-MoM2-18</b> Dynamic SIMS Imaging of Impurities in Cold Spray Copper Coating, <i>Jonas Hedberg</i> , Surface Science Western, Western University, London, Ontario, Canada; <i>F. Filice, X. Li</i> , Department of Chemistry, Western University, London, Ontario, Canada; <i>S. Ramamurthy</i> , Surface Science Western, Western University, London, Ontario, Canada; <i>J. Noël</i> , Department of Chemistry, Western University, London, Ontario, Canada; <i>M. Behazin, P. Keech</i> , Nuclear Waste Management Organization, Toronto, Ontario,	
<b>11:40am</b>	<b>SS-MoM2-20</b> Surface Characterization of High Entropy Alloys with Sea Water and Sulfuric Acid Corrosion Test Using Hard X-Ray Photoelectron Spectroscopy and Time-of-Flight Secondary Ion Mass Spectroscopy, <i>Hsun-Yun Chang</i> , ULVAC-PHI, Inc., Taiwan; <i>W. Lin</i> , Department of Photonics, National Sun Yat-sen University, Taiwan; <i>G. Fisher</i> , Physical Electronics; <i>S. Iida</i> , ULVAC-PHI, Inc., Japan	
<b>12:00pm</b>	<b>SS-MoM2-22</b> Understanding the Retention and Distribution of Anti-Microbial Compounds on Solid Surfaces, <i>Michael Clark, Jr.</i> , Dow, Core R&D Analytical Science; <i>D. Miller, A. Jayaraman</i> , Dow, Core R&D Formulation, Automation & Material Science; <i>A. Karikari, C. Schultz</i> , Dow Home and Personal Care; <i>B. Cressman</i> , Dow, Core R&D Analytical Science	

# Monday Morning, September 19, 2022

<b>SIMS Solutions in Materials and Life Sciences</b> <b>Room Great Lakes C - Session SS-MoM3</b> <b>Energy Storage I</b> <b>Moderator: Andrew Giordani, Procter &amp; Gamble Company</b>	
<b>10:00am</b>	<b>SS-MoM3-1</b> SIMS Study of Interfacial Degradation in Lithium Thiophosphate-Based Composite Cathodes for All-Solid-State Lithium-ion Batteries, <i>Felix Walther, J. Sann, J. Janek, M. Rohnke</i> , Institute of Physical Chemistry, Justus Liebig University Giessen, Germany
<b>10:20am</b>	<b>SS-MoM3-3</b> The Effect of Electric Double Layer on Formation of Solid-Electrolyte Interphase in Li Ion Batteries, <i>Zihua Zhu, C. Wang</i> , PNNL
<b>10:40am</b>	<b>INVITED: SS-MoM3-5</b> Novel strategy for the cycling analysis of polymer-based electrolyte for all-solid-state lithium ion batteries using ToF-SIMS, <i>Coste Mawélé Loudy</i> , Université de Pau et des Pays de l'Adour, E2S UPPA, CNRS, IPREM UMR 5254, France; <i>G. Godillot, C. Navarro</i> , ARKEMA France, Groupement de Recherches de Lacq, France; <i>A. Bonnet</i> , ARKEMA France, Usine de Pierre Bénite, France; <i>L. Rubatat</i> , Université de Pau et des Pays de l'Adour, E2S UPPA, CNRS, IPREM UMR 5254, 64000 Pau, France; <i>J. Allouche, H. Martinez, C. Courrèges</i> , Université de Pau et des Pays de l'Adour, E2S UPPA, CNRS, IPREM UMR 5254, France
<b>11:20am</b>	<b>SS-MoM3-9</b> In Situ Investigation of Lithium Metal–Solid Electrolyte Anode Interfaces with ToF-SIMS, <i>Svenja-Katharina Otto, L. Riegger</i> , Justus-Liebig-Universität Giessen, Germany; <i>S. Kayser</i> , IONTOF GmbH, Germany; <i>A. Henss, J. Janek</i> , Justus-Liebig-Universität Giessen, Germany
<b>11:40am</b>	<b>SS-MoM3-11</b> Investigation of the Li <sup>2</sup> /H <sup>+</sup> Exchange Process on Washed Cathode Active Material Using ToF-SIMS, <i>Anja Henss</i> , Justus-Liebig University, Heinrich Buff Ring 17, Germany
<b>12:00pm</b>	

# Monday Afternoon, September 19, 2022

Room Great Lakes B	
2:00pm	<p><b>INVITED: SS+DI-MoA3-1</b> Keynote Industrial Talk: Correlative Microscopy and Data Analysis for Semiconductor Technology Applications, <i>Jean-Paul Barnes, C. Guyot, P. Hirchenhahn, N. Gauthier, M. Moreno, T. Maindron, Y. Mazel, E. Nolot</i>, CEA-Leti, France; <i>A. Priebe</i>, EMPA (Swiss Federal Laboratories for Materials Science and Technology), Switzerland; <i>B. Gautier</i>, CNRS, France; <i>A. Tempez, S. Legendre</i>, HORIBA France; <i>G. Fisher</i>, Physical Electronics USA</p>
	<p><b>SIMS Solutions in Materials and Life Sciences</b>  <b>Session SS+DI-MoA3</b>  <b>Industrial Applications II</b>  <b>Moderators:</b>  <b>Cody Cushman</b>, Corning Incorporated, <b>Christine Mahoney</b>, Corning Research and Development Corporation</p>
2:40pm	<p><b>SS+DI-MoA3-5</b> Basic Evaluation and Impurity Analysis in OLED Devices with New Ion Guns for Dynamic-SIMS, <i>Tomomi Ohashi, S. Inayoshi</i>, ULVAC, Inc., Japan; <i>D. Sakai, T. Miyayama</i>, ULVAC PHI, Inc., Japan</p>
3:00pm	<p><b>SS+DI-MoA3-7</b> Sample Processing by Bi-FIB for TOF-SIMS Imaging of Buried Interfaces, <i>Shin-ichi Iida</i>, ULVAC-PHI, Inc., Japan; <i>G. Fisher</i>, Physical Electronics; <i>T. Miyayama</i>, ULVAC-PHI, Inc., Japan</p>
3:20pm	<p><b>SS+DI-MoA3-9</b> HDR of SIMS Data, <i>Henrik Arlinghaus, D. Rading, E. Niehuis</i>, IONTOF GmbH, Germany</p>
3:40pm	<p><b>BREAK</b></p>
4:00pm	<p><b>INVITED: SS-MoA1-13</b> Spatially Mapping Single Cells in Diseased Tissue with Multiplexed Ion Beam Imaging, <i>Jay Tarolli</i>, Ionpath</p>
	<p><b>SIMS Solutions in Materials and Life Sciences</b>  <b>Session SS-MoA1</b>  <b>Bio Materials</b>  <b>Moderator:</b>  <b>Gregory Fisher</b>, Physical Electronics USA</p>
4:40pm	<p><b>SS-MoA1-17</b> Single Cell Metabolomics using the 3D OrbiSIMS for Novel Biomaterials Development, <i>Morgan Alexander</i>, University of Nottingham, UK</p>
5:00pm	<p><b>SS-MoA1-19</b> Investigation of Changes in the Cell Envelope of <i>E. coli</i> Mutants with a Deficient Conjugation Efficiency Using TOF-Sims., <i>Alfred Fransson, K. Nilsson, M. Palm, A. Farewell, J. Fletcher</i>, University of Gothenburg, Sweden</p>
5:20pm	<p><b>SS-MoA1-21</b> Collimated Beam Imaging with MeV TOF-SIMS, <i>Marko Brajkovic, I. Bogdanovic Radovic, M. Barac, Z. Siketic</i>, Ruder Boskovic Institute, Croatia</p>

# Monday Afternoon, September 19, 2022

Room Great Lakes C		
2:00pm	<p><b>SS-MoA2-1</b> Lithium Tracing as a Tool for the Study of Lithium Dynamics: Application to the Characterization of Lithium Diffusion in the Solid Electrolyte Interphase Formed on Graphite Anodes and in Hybrid Polymer Solid Electrolytes, <i>Eric De Vito, T. Meyer, M. Berthault, J. Lavie, T. Gutel, W. Porcher, H. Manzanarez, M. Bardet</i>, CEA, France</p>	<p><b>SIMS Solutions in Materials and Life Sciences</b>  <b>Session SS-MoA2</b>  <b>Energy Storage II</b>  <b>Moderator: Andrew Giordani</b>, Procter &amp; Gamble Company</p>
2:20pm	<p><b>SS-MoA2-3</b> Study of Lithium-Ion Battery Degradation from the Subsurface of Electrodes, <i>X. Yao</i>, Advanced Technology Institute, University of Surrey, UK; <b>Tomáš Šamořil</b>, <i>J. Dluhoř</i>, TESCAN ORSAY HOLDING, Czechia; <i>J. Watts</i>, Department of Mechanical Engineering Sciences, University of Surrey, UK; <i>Z. Du</i>, Energy and Transportation Science Division, Oak Ridge National Laboratory; <i>B. Song</i>, Neutron Scattering Division, Oak Ridge National Laboratory; <i>R. Silva</i>, Advanced Technology Institute, University of Surrey, UK; <i>T. Sui</i>, Department of Mechanical Engineering Sciences, University of Surrey, UK; <i>Y. Zhao</i>, National Physical Laboratory, UK; <i>D. Miller</i>,</p>	
2:40pm	<p><b>SS-MoA2-5</b> Quantification of Transport Function in Solid Ionic Conductors from Concentration Depth Profiles, <i>Martin Schäfer, J. Wiemer, J. Bernzen, V. Gunawan, K. Rein</i>, Philipps Universität, Germany; <i>K. Weitzel</i>, Philipps-Universität</p>	
3:00pm	<p><b>SS-MoA2-7</b> High Five: UHV SIMS with Plasma Primary &amp; Simultaneous Positive and Negative Secondary Ion Detection, <i>S. Fearn</i>, Imperial College London, UK; <i>R. Chater</i>, Imperial College of Science, Technology and Medicine, UK; <b>Graham Cooke</b>, Hiden Analytical Ltd., UK; <i>N. Smith</i>, Oregon Physics</p>	
3:20pm	<p><b>SS-MoA2-9</b> Indigenous Organic Molecular Biosignatures are Detectable via ToF-SIMS of a Kerogen-rich Jurassic Clay, <i>M. Pasterski</i>, University of Illinois Chicago; <i>M. Lorenz, A. Ievlev</i>, Oak Ridge National Laboratory; <i>R. Wickramasinghe, Luke Hanley, F. Kenig</i>, University of Illinois Chicago</p>	
3:40pm	<b>BREAK</b>	
4:00pm	<p><b>INVITED: SS-MoA4-13</b> Depth Profiling of Solar Wind Helium by Secondary Neutral Mass Spectrometry, <i>Hisayoshi Yurimoto</i>, Hokkaido University, Japan</p>	<p><b>SIMS Solutions in Materials and Life Sciences</b>  <b>Session SS-MoA4</b>  <b>Geosciences</b>  <b>Moderator: Jerry Hunter</b>, University of Wisconsin</p>
4:40pm	<p><b>SS-MoA4-17</b> SIMS Measurements of Trace Hydrogen and Fluorine in Nominally Anhydrous Minerals: Implications for Primary and Secondary Processes on the Moon, <b>Jed Mosenfelder</b>, University of Minnesota; <i>A. von der Handt</i>, University of British Columbia, Canada; <i>M. Hirschmann</i>, University of Minnesota</p>	
5:00pm	<p><b>SS-MoA4-19</b> Multi-Collector Configuration Considerations for Age-Dating Measurements of Particles by Large Geometry Secondary Ion Mass Spectrometry, <b>Todd Williamson</b>, <i>E. Groopman, D. Simons</i>, National Institute of Standards and Technology (NIST)</p>	
5:20pm	<p><b>SS-MoA4-21</b> Construction of New Biomolecular Architectures Using Large Argon Clusters, <b>Benjamin Tomasetti</b>, Université Catholique de Louvain, Belgium; <i>V. Delmez</i>, université catholique de Louvain, Belgium; <i>C. Lauzin</i>, université Catholique de Louvain, Belgium; <i>A. Delcorte</i>, Université Catholique de Louvain, Belgium</p>	

# Tuesday Morning, September 20, 2022

	<p>Plenary Session Room Great Lakes B - Session PS2-TuM Plenary Session II Moderator: Jerry Hunter, University of Wisconsin</p>
8:30am	<p><b>Welcome, Introductions &amp; Thank You</b></p>
8:40am	<p><b>INVITED: PS2-TuM-2</b> Plenary Lecture: The Role of Surface Collisions in Native Mass Spectrometry/Structural Biology, <b>Vicki Wysocki</b>, Ohio State University</p>
9:40am	<p><b>BREAK</b></p>

# Tuesday Morning, September 20, 2022

<b>Fundamentals</b> <b>Room Great Lakes C - Session FM+SS-TuM3</b> <b>Microelectronics</b> <b>Moderator: Jerry Hunter, University of Wisconsin</b>		<b>Recent Advances in SIMS</b> <b>Room Great Lakes B - Session RA+BS+FM+SS-TuM2</b> <b>Beams, Theory Optimization and Methods</b> <b>Moderator: Gregory Fisher, Physical Electronics USA</b>	
<b>10:00am</b>	<b>INVITED: FM+SS-TuM3-1</b> Keynote Industrial Talk: SIMS Quantification: Do You Remember When a Factor of Two was Good Enough?, <i>Charles Magee</i> , 314 Pennington-Rocky Hill Road	<b>10:00am</b>	<b>INVITED: RA+BS+FM+SS-TuM2-1</b> Chemical Structure of Organic Molecules Sputtered with Cluster Ions, <i>Jiro Matsuo</i> , Kyoto University, Japan
<b>10:40am</b>	<b>FM+SS-TuM3-5</b> ToF-SIMS Characterization of Chitosan as Water Developable 193 nm Photolithography Resist for Green Micro-Nanopatterning, <i>P. Durin</i> , Univ Lyon, Ecole Centrale de Lyon, CNRS, France; <i>O. Sysova</i> , Université de Haute-Alsace, CNRS, Université de Strasbourg, France; <i>Y. Guan, C. Gablin</i> , Univ Lyon, CNRS, Université Claude Bernard Lyon 1, France; <i>A. Benamrouche</i> , Univ Lyon, Ecole Centrale de Lyon, CNRS, INSA Lyon, Université Claude Bernard Lyon 1, France; <i>S. Hajjar-Garreau</i> , Université de Haute-Alsace, CNRS, Université de Strasbourg, France; <i>A. Teolis, S. Trombato</i> , Univ Lyon, CNRS, Université Claude Bernard Lyon 1, Université Jean Monnet, France; <i>T. Delair</i> , Univ Lyon, CNRS, Université Claude Bernard Lyon 1, Université Jean Monnet, France; <i>I. Servin, R. Tiron, A. Bazin</i> , Univ. Grenoble Alpes, CEA, LETI, France; <i>D. Berling, O. Soppera</i> , Université de Haute-Alsace, CNRS, Université de Strasbourg, France; <i>T. Géhin</i> , Univ Lyon, Ecole Centrale de Lyon, CNRS, Université Claude Bernard Lyon 1, France; <i>E. Laurenceau</i> , Univ Lyon, Ecole Centrale de Lyon, Université Claude Bernard Lyon 1, France; <i>J. Leclercq, Y. Chevalot</i> , Univ Lyon, Ecole Centrale de Lyon, CNRS, Université Claude Bernard Lyon 1, France; <i>Didier Léonard</i> , Univ Lyon, CNRS, Université Claude Bernard	<b>10:40am</b>	<b>RA+BS+FM+SS-TuM2-5</b> Cluster-Induced Desorption/Ionization of Polystyrene – Detailed Information on Material Properties Based on a Soft Desorption Process, <i>P. Schneider, F. Verloh</i> , Justus Liebig University Giessen, Germany; <i>Michael Dürr</i> , Justus Liebig University Giessen, Germany
<b>11:00am</b>	<b>FM+SS-TuM3-7</b> NP-SIMS for Evaluating the Molecular Homogeneity of Photoresists, <i>Michael Eller, J. Cruz</i> , California State University Northridge; <i>D. Verkhoturov, S. Verkhoturov, E. Schweikert</i> , Texas A&M University	<b>11:00am</b>	<b>RA+BS+FM+SS-TuM2-7</b> Ibeam: Large Argon Cluster Ion Beams as a Versatile Vacuum-Based Tool for the Fabrication of Protein Thin Films, <i>Vincent Delmez, B. Tomasetti, C. Poleunis</i> , Université Catholique de Louvain, Belgium; <i>C. Lauzin, C. Dupont-Gillain</i> , université Catholique de Louvain, Belgium; <i>A. Delcorte</i> , Université Catholique de Louvain, Belgium
<b>11:20am</b>	<b>FM+SS-TuM3-9</b> Dynamic SIMS Analytical Methods for Optimized Detection Limits of Atmospheric Species, <i>Seoyoun Choi, L. Créon, P. Peres</i> , CAMECA, France; <i>S. Miwa</i> , CAMECA, Japan; <i>J. Ren, R. Liu</i> , CAMECA, France	<b>11:20am</b>	<b>RA+BS+FM+SS-TuM2-9</b> Optimisation of MeV TOF SIMS Technique for Hybrid Targets Imaging and Inorganic Material Depth Profiling, <i>M. Barac</i> , Ruder Boskovic Institute, Jozef Stefan International Postgraduate School (Slovenia), Croatia; <i>M. Brajkovic, Zdravko Siketic</i> , Ruder Boskovic Institute, Croatia; <i>J. Kovac</i> , Jozef Stefan Institute, Slovenia; <i>I. Bogdanovic Radovic</i> , Ruder Boskovic Institute, Croatia; <i>I. Srut Rakic</i> , Institute of Physics, Croatia; <i>J. Ekar</i> , Jozef Stefan Institute, Slovenia
<b>11:40am</b>	<b>FM+SS-TuM3-11</b> Co-Sputtering EXLIE SIMS to Achieve Non-Fully Oxidizing Conditions, <i>Alexandre Merkulov, C. Noel, A. Franquet, V. Spampinato, P. van der Heide</i> , IMEC, Belgium	<b>11:40am</b>	<b>RA+BS+FM+SS-TuM2-11</b> Reactive Molecular Dynamics Simulations of Lysozyme Desorption Under Ar Cluster Impact, <i>Samuel Bertolini, A. Delcorte</i> , Université Catholique de Louvain, Belgium
<b>12:00pm</b>	<b>FM+SS-TuM3-13</b> AKONIS: Automation for Easier Use of SIMS, <i>Anne-Sophie Robbes, O. Dulac, K. Soulard, S. Choi, R. Liu, B. Salle</i> , CAMECA, France; <i>M. Pietrucha</i> , CAMECA Instruments Inc.	<b>12:00pm</b>	<b>RA+BS+FM+SS-TuM2-13</b> Hybrid SIMS: New Adaptive Ion Injection System (AIIS) for Improved Repeatability of Quantitative Orbitrap™ SIMS Measurements, <i>Sven Kayser, J. Zake, D. Rading, A. Pirkl, H. Arlinghaus</i> , IONTOF GmbH, Germany; <i>A. Franquet, V. Spampinato</i> , IMEC, Belgium



# Tuesday Morning, September 20, 2022

<p><b>SIMS Solutions in Materials and Life Sciences</b>  <b>Room Great Lakes A2-A3 - Session SS-TuM1</b>  <b>Cells and Tissue I</b>  <b>Moderators: Gregory Fisher, Physical Electronics USA,</b>  <b>Sebastiaan Van Nuffel, Maastricht University, Netherlands</b></p>		
<b>10:00am</b>	<p><b>INVITED: SS-TuM1-1</b> Biological Explorations with NanoSIMS: From Cells to Humans, <b>Matthew Steinhauser</b>, University of Pittsburgh</p>	
<b>10:40am</b>	<p><b>SS-TuM1-5</b> Using Multimodal Mass Spectrometry Imaging to Iron Out the Mechanisms of Ferroptosis in Epithelial Ovarian Cancer, <b>Michael J. Taylor</b>, <i>J. Lukowski</i>, Pacific Northwest National Laboratory; <i>L. Tesfay</i>, University of Connecticut Health; <i>J. Cliff</i>, Pacific Northwest National Laboratory; <i>S. Torti</i>, University of Connecticut Health; <i>C. Anderton</i>, Pacific Northwest National Laboratory</p>	
<b>11:00am</b>	<p><b>SS-TuM1-7</b> GCIB-SIMS of Lipid Trafficking and Turn-Over in Cancer Cells and Spheroids, <i>K. Dimovska Nilsson</i>, <i>M. Leiva</i>, <i>G. Landberg</i>, <b>John Fletcher</b>, University of Gothenburg, Sweden</p>	
<b>11:20am</b>	<p><b>SS-TuM1-9</b> Mixing Things Up to Reduce Mix Ups in Lipid and Fatty Acid Analysis, <b>Daniel Graham</b>, <i>H. Lei</i>, <i>L. Gamble</i>, University of Washington</p>	
<b>11:40am</b>	<p><b>SS-TuM1-11</b> Direct Observation of Drug Localization to Corneocytes Versus Lipid Matrix in Stratum Corneum – Differences between Caffeine and a Jasmonic Acid Derivative, <b>Peter Sjövall</b>, RISE Research Institutes of Sweden; <i>S. Gregoire</i>, L'Oréal Research and Innovation, France; <i>L. Skedung</i>, RISE Research Institutes of Sweden; <i>G. Luengo</i>, L'Oréal Research and</p>	
<b>12:00pm</b>	<p><b>SS-TuM1-13</b> Correlative Microscopy of SIMS, Helium Ion Microscopy and XPS, <b>Jake Sheriff</b>, <i>I. Fletcher</i>, Newcastle University, UK; <i>P. Cumpson</i>, University of New South Wales, Australia, UK</p>	

# Tuesday Afternoon, September 20, 2022

Room Great Lakes A2-A3		
2:00pm	SS-TuA4-1 Probing the Human Epidermis from a Materials Science Point of View, <i>Xavier Delvaux</i> , University of Namur, LISE Research unit, Namur Institute of Structured Matter, Belgium; <i>Y. Poumay</i> , University of Namur, Namur Research Institute for Life Sciences, Belgium; <i>L. Houssiau</i> , University of Namur, LISE Research unit, Namur Institute of Structured Matter, Belgium	<b>SIMS Solutions in Materials and Life Sciences</b> <b>Session SS-TuA4</b> <b>Cells and Tissue IV</b> <b>Moderators:</b> <b>Gregory Fisher</b> , Physical Electronics USA, <b>Sebastiaan Van Nuffel</b> , Maastricht University, Netherlands
2:20pm	INVITED: SS-TuA4-3 Ambient Mass Spectrometry Imaging of Lipid Molecules from Live Cells and Tissues Using Nanomaterials, <i>J. Kim</i> , Kyungpook National University, Korea (Republic of); <i>H. Lim</i> , <b>DaeWon Moon</b> , Daegu Gyeongbuk Institute of Science and Technology (DGIST), Korea (Republic of)	
3:00pm	SS-TuA4-7 SiLC-MS (Single-Live-Cell Mass Spectrometry) Analysis in the Context of Drug Discovery, <i>Carla Newman</i> , GSK, UK	
3:20pm	SS-TuA4-9 TOF-SIMS Study of Pharmacological Active Components in Cordyceps Sinensis, <i>Q. Zhan</i> , School of Chemical and Environment Engineering, China University of Mining and Technology, China; <i>M. Xia</i> , Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, China; <i>S. Sun</i> , <i>L. Cai</i> , Department of Chemistry, Tsinghua University, China; <i>H. Liang</i> , School of Chemical and Environment Engineering, China University of Mining and Technology, China; <b>Zhanping Li</b> , Key Laboratory of Organic Optoelectronics and Molecular Engineering of Ministry of Education, Department of Chemistry, Tsinghua University, China	
3:40pm	<b>BREAK</b>	
4:00pm	INVITED: BS+FM+SS-TuA1-13 Answering Biomedical Questions Using Integrative ToF-SIMS Imaging, <b>Sebastiaan Van Nuffel</b> , Maastricht University, Netherlands	<b>Beyond SIMS</b> <b>Session BS+FM+SS-TuA1</b> <b>Cells and Tissue II</b> <b>Moderators:</b> <b>Peter Sjövall</b> , RISE Research Institutes of Sweden, <b>Michael J. Taylor</b> , Pacific Northwest National Laboratory
4:40pm	BS+FM+SS-TuA1-17 In Situ Matrix Enhanced Secondary Ion Mass Spectrometry for Tissue Analysis, <i>Thomas Daphnis</i> , <i>B. Tomasetti</i> , <i>D. Vincent</i> , <i>A. Delcorte</i> , <i>C. Dupont</i> , UCLouvain, Belgium	
5:00pm	BS+FM+SS-TuA1-19 Localization and Impact of Perfluorooctanoic Acid (PFOA) <i>In Vivo</i> and <i>In Vitro</i> by Multimodal Imaging, <b>Charlotte Stoffels</b> , <i>S. Cambier</i> , <i>T. Angerer</i> , Luxembourg Institute of Science and Technology (LIST), Luxembourg; <i>H. Robert</i> , Toxalim, Université de Toulouse, France; <i>F. Oliviero</i> , <i>L. Lakhal</i> , Toxalim, Université de Toulouse, France; <i>T. Wirtz</i> , <i>G. Frache</i> , Luxembourg Institute of Science and Technology (LIST), Luxembourg; <i>M. Mercier-Bonin</i> , Toxalim, Université de Toulouse, France; <i>A. Gutleb</i> , <i>J. Audinot</i> , Luxembourg Institute of Science and Technology (LIST), Luxembourg	
5:20pm	BS+FM+SS-TuA1-21 Evaluating Topical Product Sensitivity and Distribution Using a Multi-Modal Imaging Approach, <b>Jean-Luc Vorng</b> , <i>D. Tsikritsis</i> , National Physical Laboratory, UK; <i>P. Zarnpi</i> , <i>V. Tyagi</i> , University of Bath, U.K.; <i>A. Dexter</i> , <i>I. Gilmore</i> , <i>N. Belsey</i> , National Physical Laboratory, UK; <i>R. Guy</i> , University of Bath, U.K.	

# Tuesday Afternoon, September 20, 2022

<b>Room Great Lakes B</b>		
<b>2:00pm</b>	VS-TuA-1 Physical Electronics Vendor Session,	<b>Vendor Session Session VS-TuA Vendor Session</b>
<b>2:30pm</b>	VS-TuA-4 IONTOF Vendor Session,	
<b>3:00pm</b>	VS-TuA-7 Cameca Vendor Session,	
<b>3:20pm</b>		
<b>3:30pm</b>		
<b>3:40pm</b>	BREAK	
<b>3:50pm</b>		
<b>4:00pm</b>	<b>BS+FM+SS-TuA2-13</b> Nanoprojectile-SIMS in the Event-by-Event Bombardment-Detection Mode, <i>M. Eller</i> , California State University, Northridge; <i>S. Verkhoturov</i> , <i>D. Verkhoturov</i> , <b>Emile A. Schweikert</b> , Texas A&M University	<b>Beyond SIMS Session BS+FM+SS-TuA2 Cells and Tissue III Moderators: Peter Sjövall</b> , RISE Research Institutes of Sweden, <b>Michael J. Taylor</b> , Pacific Northwest National Laboratory
<b>4:20pm</b>	<b>BS+FM+SS-TuA2-15</b> 2D/3D Ion Imaging Methods using CAMECA Dynamic SIMS Instruments, <i>Laura Créon</i> , <i>S. Choi</i> , <i>P. Peres</i> , <i>S. Miwa</i> , <i>J. Ren</i> , <i>R. Liu</i> , CAMECA, France	
<b>4:40pm</b>	<b>BS+FM+SS-TuA2-17</b> High-Resolution Peak Analysis in TOF SIMS: Resolving Satellite Peaks and sub-Peak Structures, <b>Amy Walker</b> , <i>L. Gelb</i> , University of Texas at Dallas	
<b>5:00pm</b>	<b>BS+FM+SS-TuA2-19</b> Time of Flight Secondary Ion Mass Spectrometry (ToF SIMS) Analysis of Porous Transport Layers for Proton Exchange Membrane Water Electrolyzers, <b>Genevieve Stelmacovich</b> , <i>M. Walker</i> , Colorado School of Mines; <i>D. Cullen</i> , Oak Ridge National Laboratory; <i>S. Ware</i> , <i>T. Schuler</i> , <i>G. Bender</i> , National Renewable Energy Laboratory; <i>A. Paxson</i> , Plug Power; <i>S. Pylypenko</i> , Colorado School of	
<b>5:20pm</b>	<b>BS+FM+SS-TuA2-21</b> Innovative Approach to Safeguard Saffron Authenticity Using TOF-SIMS and Multivariate Analysis, <b>Alice Bejjani</b> , <i>O. el Ayoubi</i> , Lebanese Atomic Energy Commission, National Council for Scientific Research, Lebanon; <i>E. de Angelis</i> , <i>R. Pilolli</i> , <i>L. Monaci</i> , Institute of Science of Food Production, National Research Council of Italy	

# Tuesday Afternoon, September 20, 2022

Room Great Lakes C		
2:00pm	SS-TuA3-1 New Horizons for SIMS in the CMOS industry, <i>Paul van der Heide, V. Spampinato, A. Franquet</i> , IMEC, Belgium	<b>SIMS Solutions in Materials and Life Sciences</b> <b>Session SS-TuA3</b> <b>Microelectronics</b> <b>Moderator:</b> <b>Jerry Hunter</b> , University of Wisconsin
2:20pm	SS-TuA3-3 Self-Focusing SIMS to Enable Boron Quantification in Small Silicon Fins, <i>Valentina Spampinato, R. Morris, W. Vandervorst, P. van der Heide, A. Franquet</i> , IMEC, Belgium	
2:40pm	SS-TuA3-5 Can SIMS Still Be a Relevant and Accurate Technique for Dopant Quantification and Bulk Composition of Latest Advanced Nanoelectronic Devices?, <i>Alexis Franquet, V. Spampinato, W. Vandervorst, P. van der Heide</i> , IMEC, Belgium	
3:00pm	SS-TuA3-7 Characterization of GaN HEMT Structures by Combined SIMS & HAXPES Approach, <i>Tarek Spelta, M. Veillerot, E. Martinez, P. Fernandes Paes Pinto Rocha, L. Vauche</i> , CEA/LETI-University Grenoble Alpes, France; <i>B. Salem</i> , CNRS-LTM, Université Grenoble Alpes, France; <i>B. Hyot</i> , CEA/LETI-University Grenoble Alpes, France	
3:20pm	SS-TuA3-9 The Implementation of ToF-SIMS in the Development of State of the Art Ohmic Contacts to GaN, <i>Tatyana Kravchuk</i> , Technion, Israel; <i>Z. Fogarassy</i> , Institute for Technical Physics and Material Science, Centre for Energy Research, Budapest, Hungary; <i>A. Rácz</i> , Institute for Technology Physics and Material Science, Centre for Energy Research, Budapest, Hungary; <i>A. Wójcicka, M. Borysiewicz</i> , Institute of Microelectronics and Photonics, Warsaw, Poland; <i>S. Grzanka</i> , Top-GaN Ltd., Warsaw, Poland; <i>P. Perlin</i> , Institute of High Pressure Physics PAS, Warsaw, Poland	
3:40pm	<b>BREAK</b>	
4:00pm	SS-TuA3-13 Transfer of Zirconium Oxide Nanotubes onto Zirconia-Based Ceramic Implants, <i>Swathi Naidu Vakamulla Raghu</i> , University of Siegen, Germany	
4:20pm	SS-TuA3-15 Quantification of Sims Measurements by Using Ion Implanted Metallic Standards, <i>Guiomar D. Soria, M. González</i> , CIEMAT, Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas, Spain; <i>M. Crespillo, G. Garcia</i> , CMAM, Centre for Micro Analysis of Materials, Spain	
4:40pm	SS-TuA3-17 Ion Implantation Applications for In-Line SIMS Metrology, <i>Lawrence Rooney, S. Okada</i> , Nova	
5:00pm	SS-TuA3-19 Molybdenum Oxide Substrate Used in "Storing Matter" SIMS Technique – Determination of Relative Sensitivity Factors of 20 Elements, <i>Piotr Konarski, J. Ażgin</i> , Łukasiewicz Research Network - Tele and Radio Research Institute, Poland; <i>M. Kasik</i> , MK2 Technologies, Inc.; <i>H. Brongersma</i> , Eindhoven University of Technology, Netherlands	
5:20pm	SS-TuA3-21 Cs <sup>M+</sup> Cluster Method in Dynamic SIMS: A Versatile and Practical Approach for Thin Film Electronic Materials, <i>Marinus Hopstaken, S. Molis</i> , IBM T.J. Watson Research Center	

## Beyond SIMS

### Room Great Lakes Promenade & A1 - Session BS-TuP

#### Beyond SIMS Poster Session

5:30pm

**BS-TuP-1** Exploring the Role of Fe-C-Al Sites for the Low Temperature CO Oxidation over Fe-oxide/Al<sub>2</sub>O<sub>3</sub> via ToF-SIMS, *Byeong Jun Cha*, Korea Basic Science Institute, Korea (Republic of); *Y. Kim*, Sungkyunkwan University (SKKU), Korea (Republic of); *C. Choi, M. Choi*, Korea Basic Science Institute, Korea (Republic of)

**BS-TuP-3** Evaluation of Multi-Depth Modifications of Metal-Oxide Nanotubes, *Swathi Naidu Vakamulla Raghu*, University of Siegen, Germany

**BS-TuP-5** In Situ Liquid Secondary Ion Mass Spectrometry - a Unique Tool for in Situ Molecular Analysis of Various Liquids and Solid-Liquid Interfaces, *Zihua Zhu*, PNNL

**BS-TuP-7** Surface Modification of Steel, Molybdenum and Tungsten by the Use of Two Techniques: Electron Beam Scanning and Electric Discharge Machining – SIMS and GDMS Maps, *Piotr Konarski, J. Azgin, A. Zawada*, lukasiewicz Research Network - Tele and Radio Research Institute, Poland; *S. Feng*, Department of Mechanical Engineering, National Taipei University of Technology, Taiwan; *C. Chien*, Chien's Scientific Company, Taiwan; *D. Sheu*, Department of Mechanical Engineering, National Taipei University of Technology, Taiwan

**BS-TuP-9** High-throughput Therapeutic Drug Monitoring of Immunosuppressive Drugs using Tungsten Disulfide-based Laser Desorption Ionization, *Sunho Joh, H. Na, J. Son, A. Lee*, Korea Research Institute of Standards and Science (KRISS), Korea (Republic of); *C. Ahn*, Yonsei University, Korea, Korea (Democratic People's Republic of); *D. Ji*, Yonsei University, Korea; *J. Wi*, Hanbat National University, Korea (Republic of); *M. Jeong*, Hanyang University, Korea; *S. Lee*, Yonsei University, Korea; *T. Lee*, Korea Research Institute of Standards and Science (KRISS), Korea (Republic of)

**BS-TuP-11** ToF-SIMS Imaging of Organic and Minerals Matters in Primitive Meteorites, *Manale Noun*, Lebanese Atomic Energy Commission, NCSR, Lebanon; *Y. Arribard*, Institut d'Astrophysique Spatiale, Université Paris-Saclay, France; *S. Della-Negra*, ICLab, CNRS/IN2P3, Université Paris-Saclay, France; *R. Brunetto*, Institut d'Astrophysique Spatiale, Université Paris-Saclay, France; *D. Baklouti*, Institut d'Astrophysique Spatiale, Université Paris-Saclay, France, France

## Dealing with Data and Interpretation

### Room Great Lakes Promenade & A1 - Session DI-TuP

#### Dealing with Data and Interpretation Poster Session

5:30pm

**DI-TuP-1** Statistical Analysis of ToF-SIMS Images: Seeking Patterns in the Noise, *Alan Spool*, Western Digital Corporation

**DI-TuP-3** Characterisation of Noise in the Orbisims and Scaling Method for More Effective Multivariate Data Analysis, *Michael R. Keenan*, Independent; *G. Trindade*, National Physical Laboratory, UK; *A. Pirkel*, IONTOF GmbH, Germany; *J. Zhang*, National Physical Laboratory, UK; *H. Arlinghaus*, IONTOF GmbH, Germany; *L. Matjacic*, National Physical Laboratory, UK; *C. Newell*, The Francis Crick Institute, UK; *R. Havelund*, National Physical Laboratory, UK; *K. Ayzikov*, Thermo Fisher Scientific, Germany; *A. Gould*, The Francis Crick Institute, UK; *J. Bunch*, National Physical Laboratory, UK; *A. Makarov*, Thermo Fisher Scientific, Germany; *I. Gilmore*, National Physical Laboratory, UK

**DI-TuP-5** 4D Surface Reconstruction to Link Microstructural Topography with Sims Information, *Jean-Nicolas Audinot*, A. Ost, Luxembourg Institute of Science and Technology (LIST), Luxembourg; *T. Wirtz*, Luxembourg Institute of Science and Technology (LIST), Luxembourg

**DI-TuP-7** Comparison Study of Mouse Brain Tissue by Using ToF-SIMS with Static Limit and Hybrid SIMS Beyond Static Limit (Dynamic Mode), *Hyun Kyong Shon*, J. Son, Korea Research Institute of Standards and Science (KRISS), Korea (Republic of); *J. Moon*, Korea Research Institute of Bioscience and Biotechnology(KRIBB), Korea (Republic of); *J. Jim*, Korea Basic Science Institute(KBSI), Korea (Republic of); *T. Lee*, Korea Research Institute of Standards and Science (KRISS), Korea (Republic of)

**DI-TuP-9** Depth Correction of 3D NanoSIMS Images Show Intracellular Lipid and Cholesterol Distributions While Capturing the Effects of Differential Sputter Rate, *Melanie Brunet, B. Gorman, M. Kraft*, University of Illinois Urbana-Champaign

## Fundamentals

### Room Great Lakes Promenade & A1 - Session FM-TuP

#### Fundamentals Poster Session

5:30pm

**FM-TuP-1** To Fix or Not Fix Biofilms to Study Microbial Soil Aggregation, *Y. Zhang*, Huazhong Agricultural University, China; *J. Son*, Pacific Northwest National Laboratory; *Xiao-Ying Yu*, Oak Ridge National Laboratory

**FM-TuP-3** Matrix Enhancement in Time-of-Flight Secondary Ion Mass Spectrometry, *T. Adolphs, Y. Pohkrel, R. Peterson, H. Arlinghaus, Bonnie J Tyler*, University of Münster, Germany

**FM-TuP-5** Oxygen Detection Limit with Magnetic Sector Dynamic SIMS, *Alexandre Merkulov*, IMEC, Belgium

**FM-TuP-7** Depth Profiling Study in TAPC Monolayer Using Laser Desorption Ionization and Home-Built Ar-GCIB, *Ji Young Baek*, Korea Basic Science Institute, Korea (Republic of); *C. Choi*, Korea Basic Science Institute, Korea (Republic of); *M. Choi*, Korea Basic Science Institute, Korea (Republic of)

**FM-TuP-9** Novel Approaches for Measuring Cork Material: Measurements and Applications, *Natalie Sievers*, PNNL

**FM-TuP-11** AFM Observation of Topography Development on Si Surface During O<sub>2</sub><sup>+</sup> Ion Beam Sputtering as a Function of Ion Energy, Angle of Incidence and Dose, *Masayuki Hatada, T. Miyamoto*, Toray Research Center, Inc., Japan

**FM-TuP-13** Why Do I Always Fall to Pieces? Understanding Beam-Based Lipid Bond Breakage Through Molecular Dynamics and Density Functional Theory Calculations, *Michael Taylor*, The Pacific Northwest National Laboratory; *W. Kew, A. Anderson, M. Engelhard, C. Anderton*, The Pacific Northwest National Laboratory

## Recent Advances in SIMS

### Room Great Lakes Promenade & A1 - Session RA6-TuP

#### Recent Advances in SIMS Poster Session

5:30pm

**RA6-TuP-1** Experimental and Theoretical Analysis of Tricyclic Antidepressants Using 213 Nm Picosecond Laser Desorption Postionization Mass Spectrometry, *T. Zagorac*, University of Illinois Chicago; *H. López Pena*, Virginia Commonwealth University; *J. Gross*, University of Illinois Chicago; *K. Moore Tibbetts*, Virginia Commonwealth University; *Luke Hanley*, University of Illinois Chicago

**RA6-TuP-3** Analysis of Organic Principal Component Distribution Using Orbitrap/TOF Hybrid SIMS, *Y. Jeong, J. Lee, H. Moon, J. Sung*, Korea Basic Science Institute, Korea (Republic of); *. Suh*, Pusan National University, Korea (Republic of); *Jong Sung Jin*, Korea Basic Science Institute, Korea (Republic of)

**RA6-TuP-5** Ongoing Primary Ion Source Developments at Arizona State University, *Peter Williams, L. Williams, M. Bose, R. Hervig*, Arizona State University

**RA6-TuP-7** Epi SiGe Application using METRION® in-line SIMS System, *Lawrence Rooney, S. Okada*, Nova

**RA6-TuP-9** Detection of Contaminants in Positive and Negative Ion Mode Using in-Line SIMS with an Oxygen Primary Ion Beam, *Julia Hoffman, S. Okada*, Nova

## SIMS Solutions in Materials and Life Sciences

### Room Great Lakes Promenade & A1 - Session SS-TuP

#### SIMS Solutions in Materials and Life Sciences Poster Session

5:30pm

**SS-TuP-1** Cluster-Induced Desorption/Ionization Mass Spectrometry of Highlighter Ink: Unambiguous Identification of Dyes and Degradation Processes Based on Fragmentation-Free Desorption, *K. Bomhardt, P. Schneider, M. Rohnke*, Justus Liebig University Giessen, Germany; *C. Gebhardt*, Bruker Daltonik GmbH, Germany; *Michael Dürr*, Justus Liebig University Giessen, Germany

**SS-TuP-3** 3d ToF-SIMS Imaging of Ciprofloxacin in Biofilms at Physiologically Relevant Concentrations with Cell Level Spatial Resolution, *A. Akbari, R. Peterson, H. Arlinghaus, Bonnie J Tyler*, University of Münster, Germany

**SS-TuP-5** Orbisims Imaging of the Developing *Drosophila* Brain, *Yuhong Jin, C. Newell*, The Francis Crick Institute, UK; *I. Gilmore*, National Physical Laboratory, UK; *A. Gould*, The Francis Crick Institute, UK

**SS-TuP-9** Advance Understanding of Soil Organic Matter-Mineral Interactions Using Time-of-Flight Secondary Ion Mass Spectrometry, **Zihua Zhu**, *P. Jiang, X. Zhang, Q. Zhao*, Pacific Northwest National Laboratory; *M. Bowman*, PNNL; *E. Graham, X. Chen*, Pacific Northwest National Laboratory

**SS-TuP-11** Massive Cluster SIMS for Analysis of Nanoparticles and Their Interfaces, **Michael Eller**, California State University Northridge; *J. Sandoval, S. Verkhaturov, E. Schweikert*, Texas A&M University

**SS-TuP-13** Measurement of Metabolite Relative Ion Yields from Frozen-hydrated and Freeze-dried Tissue and Application of Cryo-OrbiSIMS to Tissue Imaging, **Anya C.S. Eyres**, NICE-MSI, National Physical Laboratory, UK; *J. Zhang*, NICE-MSI, National Physical Laboratory, UK; *C. Newell, Y. Jin*, The Francis Crick Institute, UK; *C. Nikula*, NICE-MSI, National Physical Laboratory, UK; *A. Gould*, The Francis Crick Institute, UK; *J. Bunch*, NICE-MSI, National Physical Laboratory, Imperial College London, Rosalind Franklin Institute, UK; *I. Gilmore*, NICE-MSI, National Physical Laboratory, UK

**SS-TuP-15** OrbiSIMS Localises Interfacial Degradation in Blue Phosphorescent OLEDs, **G. Trinidade**, National Physical Laboratory, UK; *S. Sul*, Samsung Electronics Co., Ltd., UK; *J. Kim*, Samsung Electronics, Ltd., UK; *R. Haveland*, National Physical Laboratory, UK; *S. Park*, Samsung Electronics Co., Ltd., UK; **Lidija Matjacic**, *I. Gilmore*, National Physical Laboratory, UK

**SS-TuP-17** Secondary Ion Mass Spectrometry Imaging of Wet/Live Cell Membranes in Solution Using Single-Layer Graphene, **Heejin Lim**, Center for Scientific Instrumentation, Korea Basic Science Institute (KBSI), Korea (Republic of); *S. Lee, Y. Park, H. Jin, D. Seo, Y. Jang, D. Moon*, DGIST, Korea (Republic of)

# Wednesday Morning, September 21, 2022

<b>Room Great Lakes B</b>	
<b>8:40am</b>	<p><b>INVITED: FM-WeM1-1</b> Improving Uranium Particle Analysis by SIMS using O<sub>3</sub>; <i>Evan Groopman, T. Williamson, D. Simons</i>, National Institute of Standards and Technology (NIST)</p>
<b>9:20am</b>	<p><b>FM-WeM1-5</b> Surface Properties of Ionic Liquids: A Mass Spectrometric View Based on Soft Cluster-Induced Desorption, <i>Karolin Bomhardt, P. Schneider, T. Glaser, M. Dürr</i>, Justus-Liebig-University Giessen, Germany</p>
<b>9:40am</b>	
<b>10:00am</b>	<b>BREAK</b>
<b>10:20am</b>	<p><b>FM-WeM3-11</b> Ion Suppression Effect of Atrazine in SIMS and MALDI Imaging in Earthworm Samples and its Correlation to Gas Phase Basicity, <i>T. Weintraut, S. Heiles, A. Henss, Marcus Rohnke</i>, Justus Liebig University Giessen, Germany</p>
<b>10:40am</b>	<p><b>FM-WeM3-13</b> Ion Emission of Molecules from Graphene and Carbon Nanotube Substrates via Large Cluster Impacts: Mechanisms of Ionization, <i>Stanislav Verkhoturov, D. Verkhoturov</i>, Department of Chemistry, Texas A&amp;M University; <i>M. Goluński, S. Hrabar, Z. Postawa</i>, Department of Physics, Jagiellonian University, Kraków, Poland; <i>A. Kolmakov</i>, National Institute of Standards and Technology, Gaithersburg; <i>E. Schweikert</i>, Department of Chemistry, Texas A&amp;M University</p>
<b>11:00am</b>	<p><b>FM-WeM3-15</b> Oxygen Enhancement of Sputtered Ion Yields: Anomalous Behavior of Electropositive Impurities (Al and B) in Cu(O) Matrices, <i>Peter Williams, K. Franzreb</i>, Arizona State University</p>
<b>11:20am</b>	<p><b>FM-WeM3-17</b> Strategy for the Construction of Accurate 3D NanoSIMS Depth Profiling Images of Cells Despite Lateral Variations in Sputter Rate, <i>M. Brunet, B. Gorman, Mary Kraft</i>, University of Illinois Urbana-Champaign</p>
<b>11:40am</b>	<p><b>FM-WeM3-19</b> Cs<sup>+</sup> SIMS using a Low Temperature Ion Source (LoTIS), <i>Brenton Knuffman, A. Schwarzkopf, A. Steele</i>, zeroK NanoTech</p>
<b>12:00pm</b>	<p><b>FM-WeM3-21</b> Development and Characterization of a Drug Dosed Biomimetic Reference Material for a Sims Vamas Inter-Laboratory Study to Study Sensitivity and Linearity, <i>Jean-Luc Vorng, A. Eyres</i>, National Physical Laboratory, U.K.; <i>C. Newman, A. West</i>, GlaxoSmithKline, UK; <i>I. Gilmore</i>, National Physical Laboratory, UK</p>

**Fundamentals**  
**Session FM-WeM1**  
**Fundamentals - Secondary Ion Formation I**  
**Moderator:**  
**Andrew Giordani**, Procter & Gamble Company

**Fundamentals**  
**Session FM-WeM3**  
**Fundamentals - Secondary Ion Formation II**  
**Moderator:**  
**Andrew Giordani**, Procter & Gamble Company

# Wednesday Morning, September 21, 2022

Room Great Lakes C		
8:40am	RA-WeM2-1 Study of Mixed-gas Cluster Ion Beam for TOF SIMS, <i>Myoung Choul Choi</i> , Korea Basic Science Institute, Korea (Republic of)	<b>Recent Advances in SIMS</b> <b>Session RA-WeM2</b> <b>Cluster and Novel Ion Sources</b> <b>Moderator:</b> <b>Christine Mahoney</b> , Corning Research and Development Corporation
9:00am	RA-WeM2-3 Properties of Vacuum Electrospray Droplet Ion Beams Produced by Capillaries with Different Inner Diameters, <i>Satoshi Ninomiya</i> , <i>S. Tsuneki</i> , University of Yamanashi, Japan; <i>L. Chen</i> , University of Yamanashi, Malaysia; <i>K. Hiraoka</i> , University of Yamanashi, Japan	
9:20am	RA-WeM2-5 Effects of Reactive Gas Cluster Ion Beams on Yields and Matrix Effects in SIMS, <i>Matija Lagator</i> , <i>I. Berrueta Razo</i> , The University of Manchester, UK; <i>N. Lockyer</i> , University of Manchester, UK	
9:40am	RA-WeM2-7 Development of a High Throughput Microscope-Mode Secondary Ion Imaging Mass Spectrometer, <i>Maria Elena Castellani</i> , <i>N. Smith</i> , <i>Y. Jia</i> , <i>M. Burt</i> , Oxford University, UK; <i>J. Bunch</i> , National Physical Laboratory, U.K.; <i>Z. Takats</i> , Imperial College London, UK; <i>M. Brouard</i> , Oxford University, UK; <i>F. Green</i> , Rosalind Franklin Institute, UK	
10:00am	<b>BREAK</b>	
10:20am	SS+RA-WeM4-11 A Novel Method for Measuring Young's Modulus Using Water Cluster SIMS, <i>Naoko Sano</i> , <i>A. Bellew</i> , Ionoptika Ltd., UK	<b>SIMS Solutions in Materials and Life Sciences</b> <b>Session SS+RA-WeM4</b> <b>High Resolution and MS/MS Methods I</b> <b>Moderators:</b> <b>Gregory Fisher</b> , Physical Electronics USA, <b>Andrew Giordani</b> , Procter & Gamble Company
10:40am	INVITED: SS+RA-WeM4-13 Toward the Analysis of Hydrated Biological Specimens Using Atom Probe Tomography, <i>Daniel Perea</i> , Pacific Northwest National Laboratory	
11:20am	SS+RA-WeM4-17 Identification of Organic Molecules Produced from a Surface using Laser and QIT-ToF-SIMS, <i>Chang Min Choi</i> , <i>J. Baek</i> , <i>J. Eo</i> , <i>M. Choi</i> , Korea Basic Science Institute, Korea (Republic of)	
11:40am	SS+RA-WeM4-19 Cryo-ToF-SIMS and OrbiSIMS investigations of Sr <sup>2+</sup> Diffusion in Bone Marrow, <i>Christine Kern</i> , <i>A. Pauli</i> , <i>R. Jamous</i> , <i>T. El Khassawna</i> , <i>M. Rohnke</i> , Justus Liebig University Giessen, Germany	
12:00pm	SS+RA-WeM4-21 Diagenetic Degradation of Organic Molecules in Fossils Characterized by ToF-SIMS, <i>Peter Sjövall</i> , RISE Research Institutes of Sweden; <i>M. Jarenmark</i> , <i>J. Lindgren</i> , Lund University, Sweden	



# Thursday Morning, September 22, 2022

Room Great Lakes B		
8:40am	DI-ThM1-1 Denoising of ToF-Sims Images via Inverse Maximum Signal Factors Analysis, <i>Bonnie J., H. Arlinghaus</i> , University of Münster, Germany	<b>Dealing with Data and Interpretation</b> <b>Session DI-ThM1</b> <b>Data and Data Processing</b> <b>Moderators:</b> <b>Daniel Graham</b> , University of Washington, <b>Christine Mahoney</b> , Corning Research and Development Corporation
9:00am	DI-ThM1-3 High-Speed 3D ToF-SIMS Analysis of Unknown Samples, <i>Michal Ryszka, A. Bellew, K. McHardy, N. Sano, A. Stickland, P. Blenkinsopp</i> , Ionoptika Ltd, UK	
9:20am	DI-ThM1-5 Towards Comprehensive Analysis of Complex Biological Samples in 3D OrbiSIMS, <i>Anna Kotowska, M. Edney</i> , University of Nottingham, UK; <i>A. Shard</i> , National Physical Laboratory, UK; <i>J. Aylott, M. Alexander, D. Scurr</i> , University of	
9:40am	DI-ThM1-7 Time-of-Flight Sims Investigation of Isobaric Oligopeptides, <i>Alessandro Auditore</i> , Università di Catania, Italy; <i>N. Grasso</i> , Università di Catania; <i>N. Tuccitto, A. Licciardello</i> , Università di Catania, Italy	
10:00am	BREAK	
10:20am	RA-ThM3-11 Highest Resolution Sims Imaging Performed on Focused Ion Beam - Based Platforms, <i>Jean-Nicolas Audinot, O. De Castro, P. Philipp, A. Biesemeier, H. Hoang, T. Wirtz</i> , Luxembourg Institute of Science and Technology (LIST), Luxembourg	<b>Recent Advances in SIMS</b> <b>Session RA-ThM3</b> <b>HR Imaging and Spectrometry</b> <b>Moderators:</b> <b>Albert Fahey</b> , Corning Incorporated, <b>Christine Mahoney</b> , Corning Research and Development Corporation
10:40am	RA-ThM3-13 Integrated Spatial Multiomics using Successive (H <sub>2</sub> O) <sub>n</sub> -GCIB-SIMS and C <sub>60</sub> -SIMS Imaging to Delineate Tissue Heterogeneity at Single-cell Resolution, <i>Hua Tian</i> , Pennsylvania State University	
11:00am	RA-ThM3-15 Preliminary Development of Microscope Mode Secondary Ion Mass Spectrometry Imaging, <i>Felicia Green</i> , Rosalind Franklin Institute, UK; <i>M. Castellani, A. Eyres, Y. Jia, M. Brouard</i> , Oxford University, UK; <i>J. Bunch, Z. Takats</i> , Rosalind Franklin Institute, UK; <i>S. Thompson, P. Blenkinsopp</i> , Ionoptika Ltd, UK	
11:20am	RA-ThM3-17 Implementation of an OTOF-SIMS on a FIB/SEM UHV Workstation for Correlative Imaging at High Spatial Resolution and High Mass Resolution, <i>Jean Almoríc Almoríc</i> , Orsay Physics, France; <i>T. Genieys</i> , CIMAP, France; <i>A. Houel</i> , Orsay Physics, France	
11:40am	RA-ThM3-19 Polyamide Chemical Bonding with Titanium and Aluminum Probed with ToF-SIMS and XPS, <i>P. Hirchenhahn, Laurent Housiau</i> , University of Namur, Belgium	
12:00pm		

# Thursday Morning, September 22, 2022

Room Great Lakes C	
8:40am	<p><b>SS-ThM2-1</b> Liquid ToF-SIMS Revealing the Oil, Water, and Surfactant Interfacial Evolution, <i>Xiao-Ying Yu</i>, Oak Ridge National Laboratory; <i>Y. Shen</i>, Ocean University of China; <i>J. Son, Z. Zhu</i>, Pacific Northwest National Laboratory</p>
9:00am	<p><b>SS-ThM2-3</b> Investigation of Bacteria/Model Hybrid Core-Shell Nanoparticles Interactions by an Innovative Combination of Surface Analysis and Mass Spectrometry Techni, <i>S. Fernández-Castillo Suárez</i>, <i>Cecile Courreges</i>, <i>J. Jiménez Lamana</i>, <i>S. Godin</i>, <i>S. Nolivos</i>, <i>R. Grimaud</i>, <i>J. Szpunar</i>, <i>J. Allouche</i>, Université de Pau et des Pays de l'Adour, E2S UPPA, CNRS, IPREM, France</p>
9:20am	<p><b>SS-ThM2-5</b> Surface and Functional Characterization of Nanostructured Thin Films for Environmental Remediation, <i>Enrica Maria Malannata</i>, <i>A. Auditore</i>, <i>A. Licciardello</i>, Università di Catania, Italy</p>
9:40am	<p><b>SS-ThM2-7</b> Localization and Quantification of Perfluorooctanoic Acid (PFOA) Inside Cells Using SIMS Analyses, <i>Charlotte Stoffels</i>, <i>S. Cambier</i>, Luxembourg Institute of Science and Technology (LIST), Luxembourg; <i>M. Subirana</i>, <i>D. Schaumlöffel</i>, CNRS, Université de Pau et des Pays de l'Adour, E2S UPPA, Institut des Sciences Analytiques et de Physico-Chimie pour l'Environnement et les Matériaux (IPREM), UMR 5254, France; <i>T. Wirtz</i>, Luxembourg Institute of Science and Technology (LIST), Luxembourg; <i>M. Mercier-Bonin</i>, Toxalim, Université de Toulouse, INRAE, INP-ENVT, INP-EI-Purpan, France; <i>A. Gutleb</i>, <i>J. Audinot</i>, Luxembourg Institute of Science and Technology</p>
10:00am	<b>BREAK</b>
10:20am	<p><b>INVITED: SS-ThM4-11</b> Advances in Polymer Science by ToF-SIMS Depth Profiling, <i>Tanguy Terlier</i>, <i>D. Lee</i>, Rice University; <i>C. Bottoms</i>, University of Tennessee Knoxville; <i>A. Masud</i>, <i>A. Karim</i>, University of Houston; <i>G. Stein</i>, University of Tennessee Knoxville; <i>R. Verduzco</i>, Rice University</p>
11:00am	<p><b>INVITED: SS-ThM4-15</b> Keynote Industrial Talk: Characterizing Bonding of Perfluoropolyether Lubricants to Magnetic Recording Disks by ToF-Sims, <i>Alan Spool</i>, Western Digital Corporation</p>
11:40am	<p><b>SS-ThM4-19</b> Depth Profiling in Thick Polymer Films with Ar and O<sub>2</sub> Gas Cluster Ion Beam Sources, <i>Christine Mahoney</i>, <i>K. Adib</i>, <i>R. Yongsunthon</i>, Corning Research and Development Corporation; <i>B. Burger</i>, Corning Varioptic, France</p>
12:00pm	<p><b>SS-ThM4-21</b> Gas Cluster Ion Scattering: A Local Probe of the Ferroelectric to Paraelectric Transition in P(VDF-ran-TrFE) Copolymers, <i>M. Chundak</i>, <i>C. Poleunis</i>, <i>A. Jonas</i>, <i>Arnaud Delcorte</i>, Université Catholique de Louvain, Belgium</p>

**SIMS Solutions in Materials and Life Sciences  
Session SS-ThM2  
Environmental  
Moderators:  
Christine Mahoney**, Corning Research and Development Corporation,  
**Zihua Zhu**, Pacific Northwest National Laboratory

**SIMS Solutions in Materials and Life Sciences  
Session SS-ThM4  
Polymers  
Moderators:  
Christine Mahoney**, Corning Research and Development Corporation,  
**Michaeleen Pacholski**, Dow Chemical Company

# Thursday Afternoon, September 22, 2022

Room Great Lakes B	
2:00pm	<p><b>FM-ThA1-1</b> Orbitrap™ MS/MS and TOF MS/MS: A Comparison of Two New Approaches for Peak Identification in Organic SIMS Applications, <i>J. Zakeł, Derk Rading, S. Kayser, A. Pirkl, W. Paul, R. Moellers</i>, IONTOF GmbH, Germany</p>
2:20pm	<p><b>FM-ThA1-3</b> Characterization of Surface Bonding and Molecular Structure from Click-Chemistry to Biogenesis Using Tandem Mass Spectrometry Imaging, <i>Gregory L. Fisher</i>, Physical Electronics</p>
2:40pm	<p><b>INVITED: FM-ThA1-5</b> How to Measure and Image Large Biomolecules by Using Ar-GCIB and Bi-Cluster ToF-SIMS: Delayed Extraction, External Calibrants and Enzyme-Amplified Signal Enhancement, <i>Tae Geol Lee</i>, Korea Research Institute of Standards and Science (KRISS), University of Science and Technology (UST), Korea (Republic of); <i>H. Shon, H. Na</i>, Korea Research Institute of Standards and Science (KRISS), Korea (Republic of); <i>M. Thi Le</i>, Korea Research Institute of Standards and Science (KRISS), University of Science and Technology (UST), Korea (Republic of); <i>J. Son</i>, Korea Research Institute of Standards and Science (KRISS), Korea (Republic of); <i>J. Moon</i>, Korea Research Institute of Bioscience and Biotechnology (KRIBB), Korea (Republic of)</p>
3:20pm	<p><b>FM-ThA1-9</b> Additional Dimension to the <i>m/z</i> Scale: Separation of Structural Isomers Using Orbisims, <i>Gustavo F. Trindade, J. Vorng</i>, National Physical Laboratory, UK; <i>A. Pirkl</i>, IONTOF GmbH, Germany; <i>I. Gilmore</i>, National Physical Laboratory, UK</p>
3:40pm	<b>BREAK</b>
4:00pm	
4:20pm	<p><b>SS+BS+FM-ThA3-15</b> A Fine Analysis of the Composition of Organic-inorganic Complex Layers of Cross-sections from Old Paintings by TOF-SIMS Imaging, Enlighthened by MS/MS and Orbitran <i>Alain Brunelle, C. Bouvier</i> IAMS Sorbonne</p>
4:40pm	<p><b>SS+BS+FM-ThA3-17</b> How Do Water Clusters Work? Insight from Molecular Dynamics Simulations, <i>M. Kański, S. Hrabar, C. Chang, Zbigniew Postawa</i>, Jagiellonian University, Poland</p>
5:00pm	<p><b>INVITED: SS+BS+FM-ThA3-19</b> <i>In situ</i> identification, imaging and depth profiling of proteins using 3D OrbiSIMS, <i>David Scurr</i>, School of Pharmacy, UK</p>
5:40pm	<b>Closing Remarks and Thank You</b>

**Fundamentals**  
**Session FM-ThA1**  
**High Resolution and MS/MS Methods II**  
**Moderator:**  
**Christine Mahoney**, Corning Research and Development Corporation

**SIMS Solutions in Materials and Life Sciences**  
**Session SS+BS+FM-ThA3**  
**High Resolution and MS/MS Methods III**  
**Moderator:**  
**Gregory Fisher**, Physical Electronics USA

# Thursday Afternoon, September 22, 2022

Room Great Lakes C	
2:00pm	<p><b>INVITED: BS+SS-ThA2-1</b> Multidimensional Chemical Imaging of Polymeric Materials Using TOF-SIMS with GCIB Sputtering, <i>Paul Vlasak, M. Clark, R. Drumright, J. Harris, M. Pacholski, H. Ying, Dow</i></p>
2:40pm	<p><b>BS+SS-ThA2-5</b> Mixed Actinide Glasses as Working Reference Materials for Spatial Analyses, <i>David Willingham, J. Matzel, P. Weber, Lawrence Livermore National Laboratory; E. Groopman, National Institute for Science and Technology (NIST); D. Weisz, J. Wimpenny, J. Caseres, K. Knight, Lawrence Livermore National Laboratory</i></p>
3:00pm	<p><b>BS+SS-ThA2-7</b> An Overview of Automotive Coatings and the Analytical Tools that Drive Innovation, <i>Sabrina Peczonczyk, N. Hosking, C. Peters, T. Misovski, C. Seubert, M. Nichols, Ford Motor Company</i></p>
3:20pm	
3:40pm	<b>BREAK</b>
4:00pm	<p><b>BS+SS-ThA4-13</b> <i>In Operando</i> Correlated Studies in Energy Materials via Combined Afm/Tof-Sims Platform, <i>Anton V. levlev, Oak Ridge National Laboratory, USA</i></p>
4:20pm	<p><b>BS+SS-ThA4-15</b> Real-Time Monitoring of Catalytic Oxidation of CO to CO<sub>2</sub> Over Platinum Surfaces By SEM &amp; SIMS, <i>Petr Bábor, A. Jaroš, Brno University of Technology, Czechia; M. Janák, ETH Zurich, Czechia; D. Hruza, K. Vařeka, M. Kolibal, T. Šíkola, Brno University of Technology, Czechia</i></p>
4:40pm	<p><b>BS+SS-ThA4-17</b> Adsorption Differences of Organic Molecules on the Metal Oxide Surfaces, <i>Aydan Yadigarli, S. Mohajernia, M. Killian, Chemistry and Structure of new Materials, Siegen University, Germany; M. Aktan, Department of Materials Science and Engineering, KU Leuven, Belgium; A. Braem, Department Materials Science and Engineering, KU Leuven, Belgium</i></p>
5:00pm	

**Beyond SIMS**  
**Session BS+SS-ThA2**  
**Polymers & Multi-Technique**  
**Moderators:**  
**Andrew Giordani, Procter & Gamble Company,**  
**Michaelleen Pacholski, Dow Chemical Company**

**Beyond SIMS**  
**Session BS+SS-ThA4**  
**Multi-Technique**  
**Moderator:**  
**Andrew Giordani, Procter & Gamble Company**

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