

SIMS-22 Program

Monday, 21 October

< Opening and SIMS & ALC Joint Plenary Session (Room 1) > Chair: J. Matsuo and Y. Homma

Opening (10:00-10:20)

21-1-P1 (21a-1-1) (10:20-11:20) *-Plenary-*
Primary projectiles for biomolecular secondary ion mass spectrometry

Peter Williams
(Arizona State University, USA)

21-1-P2 (21a-1-2) (11:20-12:20) *-Plenary-*
Photoexcited interface reactions - Photocatalysis and its applications

Akira Fujishima
(Tokyo University of Science, JAPAN)

Luncheon Seminar (12:20-14:00)

< Bio1 (Room 1) > Chair: D. Moon and S. Ninomiya

21-1-I1 (14:00-14:40) *-Invited-*

Probing the Structure of Single Neurotransmitter Vesicles with NanoSIMS

Andrew Ewing, Jelena Lovric, Michael Kurczy, Aurelien Thomen, Thi Ngoc Nhu Phan, Florent Penen, Per Malmberg, Tho D.K. Nguyen, Stefania Rabasco, Mai Hoang Philipson and Anna Larsson
(University of Gothenburg, SWEDEN)

21-1-O1 (14:40-15:00) *-Oral-*

A SIMS method for unraveling differential lipid profiles of proteasomally inhibited chromaffin cells

Inci Barut, Sanna Sämfors and John S. Fletcher
(Gothenburg University, SWEDEN)

21-1-O2 (15:00-15:20) *-Oral-*

Genetically encoded chemical tags for visualization of proteins in single cells by ToF-SIMS

Feifei Jia, Yu Lin, Jie Wang, Yao Zhao, Yanyan Zhang, Qun Luo and Fuyi Wang
(Institute of Chemistry, Chinese Academy of Sciences, CHINA)

21-1-O3 (15:20-15:40) *-Oral-*

Chemical changes on, and through, the bacterial envelope in *E. coli* mutants exhibiting impaired plasmid transfer identified using time-of-flight secondary ion mass spectrometry

Kelly Dimovska Nilsson, Martin Palm, James C. Hood, Jake Sheriff, Anne Farewell and John S. Fletcher
(University of Gothenburg, SWEDEN)

Coffee Break (15:40-16:10)

< Bio2 (Room 1) > Chair: M. Kraft and T. Nakamura

21-1-I2 (16:10-16:50) *-Invited-*

Correlated Chemical Imaging to Explore Diverse Spatiochemical Expression in Microbial Systems

Jonathan V. Sweedler, Joe F. Ellis, Jin Jia, Nydia Morales-Sota, Tianyuan Cao, Joshua ShROUT and Paul W. Bohn
(University of Illinois at Urbana-Champaign, USA)

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- 21-1-04** (16:50-17:10) *-Oral-*
3D OrbiSIMS in biomaterials discovery
Morgan R. Alexander
(The University of Nottingham, UK)
- 21-1-05** (17:10-17:30) *-Oral-*
TOF-SIMS with unroofing and chemical fixation enables observation of the intracellular fatty acid distribution with the cellular structure
Makoto Horikawa, Shiro Takei, Chi Zhang and Mitsutoshi Setou
(Hamamatsu University School of Medicine, JAPAN)
- 21-1-06** (17:30-17:50) *-Oral-*
Wet/live cell membrane SIMS imaging using single graphene layer
Heejin Lim, Sun Young Lee, Yereum Park, Yun Hee Jang and Dae Won Moon
(DGIST, SOUTH KOREA)
- 21-1-07** (17:50-18:10) *-Oral-*
Acquisition of primary structure information from proteins using 3D OrbiSIMS
Anna M. Kotowska, Jonathan W. Aylott, Alex G. Shard, Morgan R. Alexander and David J. Scurr
(University of Nottingham, UK)

< High1 (Room 3) > Chair: N. Lockyer and T. Sakamoto

- 21-2-11** (14:00-14:40) *-Invited-*
High-Resolution Nano-Analytics for the microstructural characterisation of solar cells
Jean-Nicolas Audinot, O. Jennifer Usiobo, Hiroyuki Kanda, Mohammad Khaja Nazeeruddin and Tom Wirtz
(Luxembourg Institute of Science and Technology, LUXEMBOURG)
- 21-2-01** (14:40-15:00) *-Oral-*
Performance of aberration-corrected focused ion beam for time-of-flight secondary neutral mass spectrometry
Kosuke Nagata, Ken-ichi Bajo, Satoru Itose, Miyuki Matsuya, Morio Ishihara, Kiichiro Uchino and Hisayoshi Yurimoto
(Graduate School of Science, Hokkaido University, JAPAN)
- 21-2-02** (15:00-15:20) *-Oral-*
Applications and advantages of FIB-SEM based ToF-SIMS
William D.A. Rickard, Charlie N. Ironside, Steven Reddy, David Saxey and Denis Fougerouse
(Curtin University, AUSTRALIA)
- 21-2-03** (15:20-15:40) *-Oral-*
Correlative microscopy of SIMS, helium ion microscopy and XPS
Jake Sheriff, Jinju Chen and Peter J. Cumpson
(Nexus, Newcastle University, UK)

Coffee Break (15:40-16:10)

< Geo1 (Room 3) > Chair: J. Lindgren and K. Nagashima

- 21-2-12** (16:10-16:50) *-Invited-*
Insights into molecular trafficking from NanoSIMS and complementary techniques
Haibo Jiang
(The University of Western Australia, AUSTRALIA)

- 21-2-04** (16:50-17:10) *-Oral-*
Surface chemical composition analysis for atmospheric aerosol in Beijing by ToF-SIMS
Feifei Jia, Kui Wu, Yanli Che, Yanyan Zhang, Fangang Zeng, Qun Luo, Zihua Zhu, Xiao-Ying Yu, Yao Zhao and Fuyi Wang
(*Institute of Chemistry, Chinese Academy of Sciences, CHINA*)
- 21-2-05** (17:10-17:30) *-Oral-*
Applications of D-SIMS and TOF-SIMS technologies as predictive and diagnostic tools for the needs of the mining and mineral processing industry
Stamen S. Dimov and Brian R. Hart
(*Western University, CANADA*)
- 21-2-06** (17:30-17:50) *-Oral-*
Calibration of matrix-dependent biases in isotope and trace element analyses of carbonate minerals
Kaitlyn A. McCain, Ming-Chang Liu and Kevin D. McKeegan
(*University of California - Los Angeles, USA*)
- 21-2-07** (17:50-18:10) *-Oral-*
Development of in-situ microanalysis for helium in solid
Ken-ichi Bajo, Satoru Itose, Miyuki Matsuya, Morio Ishihara, Kiichiro Uchino and Hisayoshi Yurimoto
(*Hokkaido University, JAPAN*)

< Cmplx1 (Room 4) > Chair: G. Gillen and J. Sameshima

- 21-3-11** (14:00-14:40) *-Invited-*
Functional polymer films: Where the good old Cs⁺ can help!
Laetitia Bernard, Maciej Kawecki, Olivier Scholder, Roland Hani, Matthias Diethelm, Marianne Vandenbossche, Patrick Rupper and Dirk Hegemann
(*Empa, SWITZERLAND*)
- 21-3-01** (14:40-15:00) *-Oral-*
In-situ visualization of Ferroic-ionic interaction in hybrid organic inorganic perovskites
Yongtao Liu, Anton V. Ievlev, Liam Collins, Sergei V. Kalinin and Olga S. Ovchinnikova
(*Oak Ridge National Laboratory, USA*)
- 21-3-02** (15:00-15:20) *-Oral-*
Hybrid perovskites depth profiling with variable-size argon clusters and monatomic ion beams
Céline Noël, Yan Busby, Alexis Franquet, Valentina Spampinato and Laurent Houssiau
(*University of Namur, BELGIUM*)
- 21-3-03** (15:20-15:40) *-Oral-*
3D localization of spinel and sodium contamination in alumina by TOF-SIMS
Radek Holeňák, Tomáš Spusta, Michal Potoček, David Salamon, Tomáš Šikola and Petr Bábtor
(*Brno University of Technology, CZECH*)

Coffee Break (15:40-16:10)

< Cmplx2 (Room 4) > Chair: L. Houssiau and M. Fujii

- 21-3-04** (16:10-16:30) *-Oral-*
Optimization of TOF SIMS for imaging and analysis of synthetic opioids and chemotherapy agents
Greg Gillen, Shin Muramoto, Edward Sisco, Matt Staymates, Jennifer Verkouteren and Elizabeth L. Robinson
(*National Institute of Standards and Technology, USA*)

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- 21-3-05** (16:30-16:50) *-Oral-*
Imaging of fingerprints using secondary ion mass spectrometry (SIMS)
Catia Costa, Min Jang, Roger Webb and Melanie J. Bailey
(University of Surrey, UK)
- 21-3-06** (16:50-17:10) *-Oral-*
An operational perspective on SIMS imaging of fingermarks
Deborah Charlton, C. Costa, M. Malloy, S. Bleay, S. Thorngate, J. Watts, P. Sears and
Melanie J. Bailey
(University of Surrey, UK)
- 21-3-07** (17:10-17:30) *-Oral-*
Microscale topography measurements using TOF-SIMS: Application to banknotes
Alice Bejjani, Manale Noun, Serge Della-Negra, Raymond Tannous, Georges Chalhoub,
Mazen Hamdan and Bilal Nsouli
(Lebanese Atomic Energy Commission, LEBANON)
- 21-3-08** (17:30-17:50) *-Oral-*
Application of in-situ liquid ToF-SIMS in electrochemical analysis
Xin Hua, Hai-Lun Xia, Jun-Gang Wang and Yi-Tao Long
(East China University of Science and Technology, CHINA)
- 21-3-09** (17:50-18:10) *-Oral-*
**Chemical imaging of buried interfaces in organic-inorganic devices using
FIB-ToF-SIMS**
Mariavitalia Tiddia, Ichiro Mihara, Martin P. Seah, Gustavo Ferraz Trindade, Felix Kollmer,
Clive J. Roberts, Richard Hague, Guido Mula, Ian S. Gilmore and Rasmus Havelund
(National Physical Laboratory, UK)

< Poster Session (Poster & Exhibition Hall) > (18:10-20:10)

- 21-SP-01 Sparse Modeling Application to Image Fusion Data of Plant Tissues using TOF-SIMS and Light Microscope**
Masaru Ito, Yukari Kuga, Miya Fujita, Takayuki Yamagishi and Satoka Aoyagi
(*Seikei University, JAPAN*)
- 21-SP-02 Lysergic Acid Diethylamide (LSD) Analogues Investigated by ToF-SIMS and Orbitrap-SIMS**
Karsten Lamann, Elias Lützen, Elke Tallarek, Daniel Breitenstein, Uwe Karst, Alexander Pirkl, Ewald Niehuis and Birgit Hagenhoff
(*University of Muenster, GERMANY*)
- 21-SP-03 In-Situ Correlative Microscopy for High-Resolution Nano-Analytics in Life Sciences**
Jean-Nicolas Audinot, Jelena Lovric, Charlotte Stoffels and Tom Wirtz
(*Luxembourg Institute of Science and Technology, LUXEMBOURG*)
- 21-SP-04 Study on high resolution ToF-SIMS imaging of amino acids in skin tissue**
Etsuko Hasegawa and Makiko Fujii
(*Yokohama National University, JAPAN*)
- 21-SP-05 Identification of soil-derived fungi by ambient ionization mass spectrometric analysis of volatile metabolites**
Takae Takeuchi, Yuri Tanaka, Tohru Yamagaki and Motoshi Sakakura
(*Nara Women's University, JAPAN*)
- 21-SP-06 Cryo FIB-SEM TOF SIMS – analysis of liquid/hydrated specimens**
Tomáš Nováček and Jakub Javůrek
(*TESCAN Brno, s.r.o., CZECH*)
- 21-SP-07 Ingested cesium with other alkali metals be for making the glue balls of spider's orb-web**
Yue Zhao, Masato Morita and Tetsuo Sakamoto
(*Collaborative Open Research Center, Kogakuin University, JAPAN*)
- 21-SP-08 ToF-SIMS for Imaging Composition and Functional Properties of Surfaces**
Ivan Kempson, Paul Joyce, John Denman, Alex Cavallaro and Clive Prestidge
(*University of South Australia, AUSTRALIA*)
- 21-SP-09 ToF-SIMS in pharmaceutical manufacturing**
Aruna S. Prakash, Michael M. Chrubasik, Mariavitalia Tiddia, Caterina Minelli, Sara Ottoboni, Elke Prasad, Muhammad T. Islam, Nazer Rajoub, Chris J. Price, John McGinty, Jan Sefcik, Cameron J. Brown, John Robertson, Andrea Johnston, Ian S. Gilmore, Blair Johnston and Alastair Florence
(*Strathclyde Institute of Pharmacy and Biomedical Sciences, University of Strathclyde, UK*)
- 21-SP-10 A ToF-SIMS study of untreated and PZ-128 treated human coronary artery endothelial cells**
Michael M. Chrubasik, Rachel Wood, Rebecca Gilchrist, Margaret R. Cunningham, Robert Liskamp, Ian S. Gilmore, Alastair Florence, Alison Nordon and Blair Johnston
(*EPSRC Future Manufacturing Research Hub for Continuous Manufacturing and Advanced Crystallisation, University of Strathclyde, UK*)
- 21-SP-11 Ar-gas cluster primary ion beam in ToF-SIMS for biomolecules analyses and bottom-up sequence validation for trypsin-digested proteins**
Jin Gyeong Son, So Hee Yoon, Hyung Kyong Shon, Jeong Hee Moon and Tae Geol Lee
(*Korea Research Institute of Standards and Science (KRISS), SOUTH KOREA*)
- 21-SP-12 Evaluation of internal distribution change with extracellular action by shape change of cell by TOF-SIMS**
Kazuya Tamura, Takurou Hasegawa, Masato Morita, Kumiko Nagase, Masatoshi Kakihana, Naohiro Kajiwara, Tatsuo Ohira, Norihiko Ikeda and Tetsuo Sakamoto
(*Kogakuin University, JAPAN*)

- 21-SP-13** **Surface quantitative evaluation and imaging of bio-samples using SIMS combined with immunohistochemical method**
Wataru Haya, Junichiro Sameshima, Takuo Onizuka, Naoya Iwano, Kohji Shimoda and Yasushi Miyauchi
(*Toray Research Center, Inc., JAPAN*)
- 21-SP-14** **On-tissue Chemical Derivatization for ToF-SIMS and (MA)LDI-ToF Mass Spectrometry Imaging**
Ibrahim Kaya, Steffen M. Brülls, Johan Dunevall, Eva Jennische, Stefan Lange, Jerker Mårtensson, Andrew Ewing, Per Malmberg and John S. Fletcher
(*University of Gothenburg, SWEDEN*)
- 21-SP-15** **Visualization of partial neurotransmitter release using dual stable isotope labeling followed by single cell nanoSIMS analysis**
Tho D.K. Nguyen, Lisa Mellander, Mai Hoang Philipsen, Aurélien Thomen, Michael Kurczyk, Nhu T.N. Phan and Andrew Ewing
(*University of Gothenburg, SWEDEN*)
- 21-SP-16** **Ionisation behaviours of high affinity molecules on the silk fibroin substrate using Ar GCIB**
Naoko Sano, Tomoko Hashimoto and Jiro Matsuo
(*Nara Women's University, JAPAN*)
- 21-SP-17** **A Study of Mechanical Properties and Biomedical Characteristics of Degradable Mg-Zn Alloy**
Kuan Jen Chen, Fei Yi Hung, Truan Sheng Lui and Yen Ling Lin
(*National Cheng Kung University, TAIWAN*)
- 21-SP-18** **Quantitative Evaluation of Polyethylene Glycol Ligand Conjugation to Gold Nanoparticle Surfaces Using ToF-SIMS and Statistical Analysis**
Hyung Kyong Shon, Jin Gyeong Son, Sunho Joh, Jeong Hee Moon and Tae Geol Lee
(*Korea Research Institute of Standards and Science (KRISS), SOUTH KOREA*)
- 21-SP-19** **Exploration of biomarkers for cancer grade evaluation by TOF-SIMS**
Tetsuo Sakamoto, Takurou Hasegawa, Kazuya Tamura, Masato Morita, Kumiko Nagase, Masatoshi Kakihana, Naohiro Kajiwara, Tatsuo Ohira and Norihiko Ikeda
(*Kougakuin University, JAPAN*)
- 21-SP-20** **Generation of massive cluster ions with electrospray ion source**
Taiki Matsuda, Toshio Seki, Takaaki Aoki and Jiro Matsuo
(*Kyoto University, JAPAN*)
- 21-SP-21** **ToF-SIMS with continuous MeV beams**
Igor Alencar, Liana Niekraszewicz, G. Onzi, A. Kochengorger, Pedro Grande, Livio Amaral, Ricardo Papaléo, W. Woff and Johnny Dias
(*Ion Implantation Laboratory - UFRGS, BRAZIL*)
- 21-SP-22** **Simultaneous gas co-injection during a FIB-TOF-SIMS measurement as a solution for enhancing spatial resolution and de-coupling mass interference**
Agnieszka Priebe, Ivo Utke, Laszlo Pethö and Johann Michler
(*Empa, Swiss Federal Laboratories for Materials Science and Technology, SWITZERLAND*)
- 21-SP-23** **Data analysis of complementary chemical imaging data sets**
Tomomi Akiyama, Naoya Miyauchi, Akiko Itakura, Yuuki Kodama, Takayuki Yamagishi and Satoka Aoyagi
(*Seikei University, JAPAN*)
- 21-SP-24** **Investigating Matrix Effects on Different Combinations of Lipids and Peptides**
Keisuke Mizomichi, Tomoko Kawashima, Michael Dürr, Takayuki Yamagishi and Satoka Aoyagi
(*Seikei University, JAPAN*)

- 21-SP-25** **Effects of Polymer Crystallization on Molecular Sensitivity in Bi Cluster TOF-SIMS Measurements**
Rie Shishido, Makiko Fujii, Masaya Mitsuishi and Shigeru Suzuki
(*Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, JAPAN*)
- 21-SP-26** **Optimize Gallium FIB/SEM beam parameters for ToF SIMS data acquisition**
Chengge Jiao, Johannes Mulders, Lex Pillatsch and Piet Trompenaars
(*Thermo Fisher Scientific, NETHERLANDS*)
- 21-SP-27** **Effects of organic acid on polymer ionization process with various cluster ion beam irradiation**
Yudai Ishij, Rie Shishido, Jiro Matsuo and Makiko Fujii
(*Yokohama National University, JAPAN*)
- 21-SP-28** **Molecular dynamics simulations on desorption/ionization induced by neutral clusters of polar and non-polar cluster constituents**
Pascal Schneider and Michael Dürr
(*Justus Liebig University Giessen, GERMANY*)
- 21-SP-29** **Investigation of the particle ejection process from clean and phenylalanine covered carbon nanotubes bombarded by keV C₆₀**
Sviatoslav Hrabar and Zbigniew Postawa
(*Institute of Physics, Jagiellonian University, POLAND*)
- 21-SP-30** **Characterization of the outermost hair surface using TOF-SIMS depth profiling with multivariate analysis and machine learning**
Kazuhiro Matsuda, Junichiro Sameshima and Satoka Aoyagi
(*Toray Research Center, Inc., JAPAN*)
- 21-SP-31** **Comparison of quantitative analyses in SIMS, APT and fs-LA-ICP-MS using Si_{1-x}Ge_x and Fe_{1-x}Ni_x binary alloys**
Yun J. Jang, Seon Hee Kim, Kyung Joong Kim, Donghwan Kim and Yeonhee Lee
(*Advanced analysis center, Korea Institute of Science and Technology, SOUTH KOREA*)
- 21-SP-32** **Photo-induced dissociation of secondary ions using Quadrupole Ion Trap Time-of-Flight Secondary Ion Mass Spectrometry**
Chang Min Choi, Ji Young Baek, Jae Young Eo, Sang Ju Lee, Boo Ki Min and Myoung Choul Choi
(*Div. of Scientific Instrumentation, Korea Basic Science Institute, SOUTH KOREA*)

Tuesday, 22 October

< SIMS-ALC Joint Session, ML1 (Room 1) > Chair: M. Sugiyama and S. Aoyagi

22-1-I1 (22a-1-1) (09:00-09:30) *-Invited-*
Can machine learning bring atom probe microscopy closer to analytical atomic-scale tomography?
Baptiste Gault, Ye Wei, Shyam Katnagallu, Felipe Ferraz Morgado de Oliveira, Andrew Breen, Isabelle Mouton, Michael Herbig, Dierk Raabe and Leigh T. Stephenson
(*Max-Planck-Institut für Eisenforschung GmbH, GERMANY*)

22-1-I2 (22a-1-2) (09:30-09:55) *-Invited-*
Importance of advanced metrology in semiconductor industry and value-added creation using AI
Kazuya Okamoto
(*Yamaguchi University, JAPAN*)

22-1-O1 (22a-1-3) (09:55-10:15) *-Oral-*
Topological data analysis of microscopic image data
Masato Kotsugi
(*Tokyo University of Science, JAPAN*)

22-1-O2 (22a-1-4) (10:15-10:35) *-Oral-*
A machine learning study of secondary electron yield
Mehnaz, Bo Da, K. Goto and Z.J. Ding
(*USTC, CHINA*)

Coffee Break (10:35-10:50)

< SIMS-ALC Joint Session, ML2 (Room 1) > Chair: B. Gault and M. Kotsugi

22-1-I3 (22a-1-5) (10:50-11:20) *-Invited-*
Machine learning techniques for electron microscopic/spectroscopic image data analysis
Shunsuke Muto
(*Nagoya University, JAPAN*)

22-1-I4 (22a-1-6) (11:20-11:50) *-Invited-*
To bag, or to boost? A question of balance.
Alex Henderson
(*Manchester Institute of Biotechnology (MIB), The University of Manchester, UK*)

22-1-O3 (22a-1-7) (11:50-12:10) *-Oral-*
Exploring large scale ToF-SIMS data matrices using artificial neural networks: polymers and biointerfaces
Paul Pigram, Robert Madiona, Wil Gardner, Nicholas Welch, David Winkler and Benjamin Muir
(*Centre for Materials and Surface Science, La Trobe University, AUSTRALIA*)

22-1-O4 (22a-1-8) (12:10-12:30) *-Oral-*
TOF-SIMS data interpretation using random forest and deep learning
Satoka Aoyagi, Akio Takano and Yukio Fujiwara
(*Seikei University, JAPAN*)

Luncheon Seminar (12:30-14:00)

< SIMS-ALC Joint Session, Bio3 (Room1) > Chair: A. Ewing and M. Takeuchi

22-1-I5 (22p-1-1) (14:00-14:30) -Invited-

Hybrid Nano-coating For the Next-generation Drug-eluting Stents Technology

Terumitsu Hasebe, Tomohiro Matsumoto, Shunto Maegawa, Kenta Bito, Yutaka Okamoto, Kenrtaro Takeda, Atsushi Hotta and Yutaka Imai
(Tokai University School of Medicine, JAPAN)

22-1-05 (22p-1-2) (14:30-14:50) -Oral-

Direct Imaging of the Cholesterol and Sphingolipid Abundance at the Site of Influenza Virus Assembly with High-Resolution SIMS

Mary L. Kraft, Ashley N. Yeager, Peter K. Weber and Joshua Zimmerberg
(University of Illinois, Urbana-Champaign, USA)

22-1-06 (22p-1-3) (14:50-15:10) -Oral-

Correlative surface microscopy for analysis of biological tissues after neural device implantation

Amanda Gomes De Carvalho, Jean-Paul Barnes, Olivier Renault, D. Mariolle, C. Gaude, D. Ratel and A. Galtayries
(CEA-Leti, FRANCE)

22-1-07 (22p-1-4) (15:10-15:30) -Oral-

Combined TOF-SIMS/SPM characterization of cable bacteria – living electrical nanowires for next generation bioelectronics?

Raghavendran Thiruvallur Eachambadi, Henricus T.S. Boschker, Alexis Franquet, Valentina Spampinato, Silvia Hidalgo-Martinez, Filip J.R. Meysman and Jean V. Manca
(X-LAB, Hasselt University, BELGIUM)

Coffee Break (15:30-16:10)

< Bio4 (Room 1) > Chair: J. Fletcher and N. Masaki

22-1-I6 (16:10-16:50) -Invited-

Exploiting the semi-destructive nature of GCIB-ToF-SIMS imaging for confident lipid annotations in tissue sections

Tina B. Angerer, Dusan Velickovic, Carrie D. Nicora, Jennifer E. Kyle, Daniel J. Graham, Christopher Anderton and Lara J. Gamble
(University of Washington, USA)

22-1-08 (16:50-17:10) -Oral-

A cryogenic 3D OrbiSIMS method for imaging volatile lipids

Clare L. Newell, Jean-Luc Vorng, James I. MacRae, Ian S. Gilmore and Alex P. Gould
(The Francis Crick Institute, UK)

22-1-09 (17:10-17:30) -Oral-

Imaging mass spectrometry of phospholipid alterations in Drosophila brain after cocaine withdrawal

Mai Hoang Philipsen, Nhu T.N. Phan, Per Malmberg and Andrew Ewing
(Chalmers University of Technology, SWEDEN)

22-1-010 (17:30-17:50) -Oral-

Si uptake of single mesenchymal stem cells

Marcus Rohnke, Maria Kreuz, Mohamed I. Elashry, Alena S. Wagner, Anja Henss, Sabine Wenisch and Juergen Janek
(Justus-Liebig-University Giessen, GERMANY)

22-1-011 (17:50-18:10) -Oral-

Investigation of drug transport in bone marrow by cryo-ToF-SIMS

Christine Kern, Anna Pauli, Jürgen Janek and Marcus Rohnke
(Justus-Liebig-University Giessen, GERMANY)

< Fun1 (Room 3) > Chair: Z. Postawa and T. Seki

22-2-11 (09:00-09:40) -Invited-

Progress with water cluster ion beams for SIMS

Nicholas Lockyer

(University of Manchester, UK)

22-2-01 (09:40-10:00) -Oral-

Useful ion yields estimated from secondary ion and sputtering yields produced by vacuum electrospray droplet ion beams

Satoshi Ninomiya, Lee Chuin Chen and Kenzo Hiraoka

(University of Yamanashi, JAPAN)

22-2-02 (10:00-10:20) -Oral-

Primary-ion-induced fragmentation in peptide samples investigated by means of cluster-induced desorption/ionization mass spectrometry

Felix Verloh, Pascal Schneider, Andre Portz, Satoka Aoyagi, Marcus Rohnke and Michael Dürr

(Justus Liebig University Giessen, GERMANY)

22-2-03 (10:20-10:40) -Oral-

Development of an ion source generating a cluster ion beam containing active protons by means of a sharpened rod wetted with protic ionic liquid

Yukio Fujiwara and Naoaki Saito

(National Institute of Advanced Industrial Science and Technology (AIST), JAPAN)

Coffee Break (10:40-11:10)

< Fun2 (Room 3) > Chair: A. Delcorte and T. Miyayama

22-2-04 (11:10-11:30) -Oral-

To be fragmented or not to be, that is the question in organic sputtering

Naoko Sano, Rika Oki and Jiro Matsuo

(Nara Women's University, JAPAN)

22-2-05 (11:30-11:50) -Oral-

Structural analysis of organic ultra thin-layer by using Ar-GCIB sputter collecting method

Yoshiteru Sasaki, Daigo Murai, Masaki Hachiya and Hiroyuki Noda

(Analysis Technology Center, FUJIFILM Corporation, JAPAN)

22-2-06 (11:50-12:10) -Oral-

Tailoring new biomolecular architectures with large cluster ion beams

Vincent Delmez, K. Moshkunov, C. Poleunis, C. Dupont-Gillain and Arnaud Delcorte

(Université catholique de Louvain, BELGIUM)

22-2-07 (12:10-12:30) -Oral-

Oscillation in the stability of consecutive chemical bonds at the molecule-metal interface analyzed by SIMS

Jakub Ossowski, Mateusz Wróbel, Mariusz Krawiec, Zbigniew Postawa and Piotr Cyganik

(Jagiellonian University, POLAND)

Luncheon Seminar (12:30-14:00)

< Fun3 (Room 3) > Chair: H. Gnaser and N. Sano

22-2-12 (14:00-14:40) -Invited-

High energy water cluster beams for the enhanced ion yields and 1 μm resolution imaging

Hua Tian, Sadia Sheraz (née Rabbani), John C. Vickerman, Nick Winograd and Peter J. Cumpson

(Pennsylvania State University, USA)

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- 22-2-08 (14:40-15:00) -Oral-
Comparison study of desorption/ionization mechanisms of organic molecules under Ar and molecular clusters bombardment
Kousuke Moritani, Tetsuro Masumoto, Kosuke Hayashi and Norio Inui
(University of Hyogo, JAPAN)
- 22-2-09 (15:00-15:20) -Oral-
Applications of topography-corrected TOF-SIMS imaging in the semiconductor industry
Conor R. Thomas
(Surface Analysis, Materials Characterization, IBM Systems, USA)
- 22-2-010 (15:20-15:40) -Oral-
Utilisation of MeV TOF-SIMS and PIXE for the analysis of organic samples-Forensic and Biology applications
Marko Barac, Katherine L. Moore, Iva Bogdanović Radović, Marko Brajković, Marijana Popović Hadžija, Mirko Hadžija and Zdravko Siketić
(Ruđer Bošković Institute, CROATIA)
- Coffee Break (15:40-16:10)
- < Fun4 (Room 3) > Chair: J-P. Barnes and Y. Fujiwara
- 22-2-011 (16:10-16:30) -Oral-
A mechanistic view of gas cluster-induced sputtering of kilodalton molecules using kinetic energy distribution measurements
Arnaud Delcorte and Claude Poleunis
(Université catholique de Louvain, BELGIUM)
- 22-2-012 (16:30-16:50) -Oral-
Study on ionization process and quantitative analysis of organic molecules with cluster ion beam irradiation
Makiko Fujii, Yudai Ishii, Etsuko Hasegawa, Rie Shishido and Jiro Matsuo
(Yokohama National University, JAPAN)
- 22-2-013 (16:50-17:10) -Oral-
Study of organic/substrate interfaces in single beam depth profiles by Ar-GCIB
Vanina Cristaudo, Claude Poleunis and Arnaud Delcorte
(Université catholique de Louvain, BELGIUM)
- 22-2-014 (17:10-17:30) -Oral-
Optimized alkali-metal cationization in secondary ion mass spectrometry of polyethylene glycol oligomers with up to m/z 10000: Dependence on cation species and concentration
Hubert Gnaser, Rika Oki, Takaaki Aoki, Toshio Seki and Jiro Matsuo
(University of Kaiserslautern, GERMANY)
- 22-2-015 (17:30-17:50) -Oral-
Ionization probability of sputtered atoms: influence of substrate excitation
Matthias Herder, Philip Ernst, Marika Schleberger and Andreas Wucher
(Universität Duisburg-Essen, GERMANY)
- 22-2-016 (17:50-18:10) -Oral-
Chemical State Analysis of Vanadium using Laser-SNMS
Kei Kiyokawa, Masato Morita, Yue Zhao and Tetsuo Sakamoto
(Toshiba Nanoanalysis Corporation, JAPAN)

< Inorg1 (Room 4) > Chair: C. Mahoney and A. Sakaki

22-3-11 (09:00-09:40) -Invited-

Novel insights into next generation battery materials in 2D and 3D by ToF-SIMS

Anja Henss, Marcus Rohnke, Felix Walther and Juergen Janek
(*Justus-Liebig-University of Giessen, GERMANY*)

22-3-01 (09:40-10:00) -Oral-

3D imaging of Al nanoparticles in a bulk metallic glass matrix using TOF-SIMS validated with STEM, EDX and SEM

Agnieszka Priebe, Jean-Paul Barnes, Thomas E.J. Edwards, Laszlo Pethö, István Balogh and Johann Michler
(*Empa, Swiss Federal Laboratories for Materials Science and Technology, SWITZERLAND*)

22-3-02 (10:00-10:20) -Oral-

Photogrammetry at nanoscale: Workflow for correlation of 3D models with SIMS in a single instrument

Alexander Ost, Jean-Nicolas Audinot and Tom Wirtz
(*Luxembourg Institute of Science and Technology (LIST), LUXEMBOURG*)

22-3-03 (10:20-10:40) -Oral-

In Situ Liquid SIMS as a Versatile Molecular "Eye" for Investigations of Ion Solvation Phenomenon and Dynamic Electrode-Electrolyte Interfaces

Yanyan Zhang, Fuyi Wang and Zihua Zhu
(*Institute of Chemistry, Chinese Academy of Sciences, CHINA*)

Coffee Break (10:40-11:10)

< Geo2 (Room 4) > Chair: A. Wucher and R. Saito

22-3-12 (11:10-11:50) -Invited-

Ultra-high precision Si isotope analysis using Cameca-1280 SIMS

Yu Liu, Xian-Hua Li, Qiu-Li Li, Xiao-Chi Liu, Guo-Qiang Tang, Hui-Min Yu and Fang Huang
(*Chinese Academy of Sciences, CHINA*)

22-3-04 (11:50-12:10) -Oral-

Femtosecond laser desorption postionization mass spectrometric imaging of organic biomarkers buried in geological samples

Luke Hanley, Raveendra Wickramasinghe, Michael J. Pasterski, Chien-Chia Chen, Igor V. Veryovkin and Fabien Kenig
(*University of Illinois at Chicago, USA*)

22-3-05 (12:10-12:30) -Oral-

Development of two-color resonant ionization SNMS apparatus for trace radioactive elements

Tetsuo Sakamoto, Masato Morita, Kotaro Kato, Volker Sonnenschein, Hideki Tomita, Toshihide Kawai, Takeo Okumura, Yukihiro Satou, Masabumi Miyabe and Ikuo Wakaida
(*Kogakuin University, JAPAN*)

Luncheon Seminar (12:30-14:00)

< Geo3 (Room 4) > Chair: H. Jiang and N. Sakamoto

22-3-13 (14:00-14:40) -Invited-

A novel multi-technique approach reveals the softer side of ancient 'sea monsters'

Johan Lindgren
(*Lund University, SWEDEN*)

- 22-3-06** (14:40-15:00) *-Oral-*
TOF-SIMS analysis of exceptionally preserved Carboniferous Mazon Creek fossil concretions
Madison Tripp, William Rickard, Jean-Pierre Veder, Jessica Whiteside, Reinhard Kersting, Matthias Kleine-Boymann, Marco J.L. Coolen and Kliti Grice
(*Western Australian Organic & Isotope Geochemistry Centre, Curtin University, AUSTRALIA*)
- 22-3-07** (15:00-15:20) *-Oral-*
Determination of geographical origin of food by multivariate ToF-SIMS analysis
Marco Consumi, Gemma Leone, Gabriella Tamasi, Claudia Bonechi, Claudio Rossi and Agnese Magnani
(*University of Siena, ITALY*)
- 22-3-08** (15:20-15:40) *-Oral-*
Analyses by TOF-SIMS imaging of cross-sections from the Bacchanals paintings of Nicolas Poussin
Caroline Bouvier, Helen Glanville, Laurence de Viguerie, Chiara Merucci, Philippe Walter and Alain Brunelle
(*CNRS, FRANCE*)

Coffee Break (15:40-16:10)

< **High2 (Room 4)** > Chair: J-N. Audinot and M. Nojima

- 22-3-14** (16:10-16:50) *-Invited-*
Critical review of advances in high-resolution mass spectrometers and their utility for SIMS
Ian Gilmore
(*National Physical Laboratory, UK*)
- 22-3-09** (16:50-17:10) *-Oral-*
Chemical gradients identified across the skin using 3D OrbiSIMS
Nichola Starr, Gustavo Ferraz Trindade, Alexander Pirkl, Matthias Kleine-Boymann and David J. Scurr
(*University of Nottingham, UK*)
- 22-3-010** (17:10-17:30) *-Oral-*
Orbital trapping mass analyser for SIMS
James C. Hood, Jinju Chen and Peter J. Cumpson
(*NEXUS, Newcastle University, UK*)
- 22-3-011** (17:30-17:50) *-Oral-*
A high-performance time-of-flight mass spectrometer utilizing a spiral ion trajectory
Takaya Satoh
(*JEOL Ltd., JAPAN*)
- 22-3-012** (17:50-18:10) *-Oral-*
Ion Formula Generation of Small Molecule and Monoisotopic Mass Determination of Protein/Oligo - How Bruker Uses High Resolution TOF Data -
Yoshihiko Takinami
(*Bruker Japan, JAPAN*)

Wednesday, 23 October “Industrial Sessions”

< Indu1 (Room 2) > Chair: M. Alexander and H. Noda

23-1-11 (09:00-09:40) *-Invited-*
Quantification of surface composition and texture of inhalation powders
Mark Nicholas, Mats Josefson, Magnus Fransson, Catherine Boissier, Jonas Wilbs, Carl Roos and Kyrre Thalberg
(AstraZeneca Gothenburg, SWEDEN)

23-1-01 (09:40-10:00) *-Oral-*
Drug detection at the limit – Localization of Bortezomib in myeloma cells
Svenja-K. Otto, Marcus Rohnke, Felix Kollmer, Arno Schintelman, Dirk Hose, Anja Seckinger and Anja Henss
(Justus Liebig University of Giessen, GERMANY)

23-1-02 (10:00-10:20) *-Oral-*
SIMS applications in drug discovery
Carla Newman, Andy West, Rasmus Havelund, Jean-Luc Vorng, Spencer Thomas, Greg McMahon, Morgan Alexander and Ian S. Gilmore
(GlaxoSmithKline, UK)

23-1-03 (10:20-10:40) *-Oral-*
ToF-SIMS imaging of amorphous solid dispersions
Eleonora Paladino, Iyke Onyemelukwe, Dimitrios Lamprou, Ian S. Gilmore, Alastair Florence and Gavin Halbert
(CMAC Future Manufacturing Research Hub, UK)

Coffee Break (10:40-11:10)

< Indu4 (Room 2) > Chair: M. Nicholas and T. Takeuchi

23-1-04 (11:10-11:30) *-Oral-*
TOF-SIMS study on the change of pharmacological active components in cordyceps sinensis during growth cycle
Qin Zhan, Lesi Cai, Jiang Wu, Lu Yang, Jian Chen, Suqin Sun, Handong Liang and Zhanping Li
(Tsinghua University, CHINA)

23-1-05 (11:30-11:50) *-Oral-*
Elucidating targeted drug delivery strategies for skin cancers using ToF-SIMS imaging
Akmal H. Sabri, Jane Ogilvie, Volha Shpadaruk, John Mckenna, Joel Segal, David J. Scurr and Maria Marlow
(University of Nottingham, UK)

23-1-06 (11:50-12:10) *-Oral-*
Determination of pharmaceuticals sensitivity and ionisation efficiency in SIMS using model reference samples and cluster ion beams
Jean-Luc Vorng, Mariavitalia Tiddia, Allen Bellew, Ian S. Gilmore, Paul Blenkinsopp, Rasmus Havelund and Paulina D. Rakowska
(National Physical Laboratory, UK)

Group Photo (12:10-12:40)

Luncheon Seminar (12:40-14:10)

< Indu7 (Room 2) > Chair: L. Gamble and T. Shibamori

23-1-I2 (14:10-14:50) -Invited-

Do we have chemistry? MS/MS in anticipation or in reality

Takemichi Nakamura

(Center for Sustainable Resource Science, RIKEN, JAPAN)

23-1-07 (14:50-15:10) -Oral-

Using refined automated MS/MS routines on a Hybrid SIMS instrument for fast and robust identification of main constituents in unknown samples

Alexander Pirkl, Julia Zakel, Derk Rading, Henrik Arlinghaus, Daniel Breitenstein, Karsten Lamann, Elke Tallarek, Birgit Hagenhoff and Ewald Niehuis

(IONTOF, GERMANY)

23-1-08 (15:10-15:30) -Oral-

TOF-SIMS MS/MS depth profiling of OLED devices for elucidating the degradation process

Shin-ichi Iida, T. Murakami, Y. Kurosawa, Y. Suzuri and Takuya Miyayama

(ULVAC-PHI, Inc., JAPAN)

23-1-09 (15:30-15:50) -Oral-

Stabilization of dry protein coatings with compatible solutes

Manuela S. Killian, Adam J. Taylor and David G. Castner

(Friedrich-Alexander University Erlangen, GERMANY)

Coffee Break (15:50-16:20)

< Indu10 (Room 2) > Chair: L. Bernard and D. Kobayashi

23-1-K1 (16:20-16:50) -Keynote-

ToF-SIMS Analysis of Thin Films and Coatings on Glass: Applications of a new tool to help understand challenging problems

Christine M. Mahoney, Philip S. Brown, Albert J. Fahey, Carlo A. Kosik Williams, John Peanasky and Ruchi Tandon

(Corning Research and Development Corporation, USA)

23-1-010 (16:50-17:10) -Oral-

Use of ToF-SIMS as 2D/3D Material Analysis Tool in SEI

Yutaka Hoshina, Shigeaki Uemura and Haruka Okamoto

(Sumitomo Electric Industries, Ltd., JAPAN)

23-1-011 (17:10-17:30) -Oral-

PCA assisted ToF-SIMS in transformation studies of titania nanoparticles and addressing deviations of polymer core-shell nanoparticles from the ideal model

Wolfgang E.S. Unger, Valentin Kunz, Anja Müller and Thomas Heinrich

(Bundesanstalt für Materialforschung und -prüfung (BAM), GERMANY)

23-1-012 (17:30-17:50) -Oral-

SIMS quantification in metal matrices

Larry Wang, Stephen P. Smith and Charles Magee

(EAG, USA)

23-1-013 (17:50-18:10) -Oral-

Addition of Ta and Y to a hard Ti-Al-N PVD coating: individual and conjugated effect on the oxidation properties

Nathalie Valle, Rémi Aninat, Brahime El Adib, Jean-Baptiste Chemin, David Duday, Esther Lentzen and Patrick Choquet

(Luxembourg Institute of Science and Technology (LIST), LUXEMBOURG)

< Indu2 (Room 3) > Chair: A. Licciardello and M. Okamoto

23-2-11 (09:00-09:40) *-Invited-*
ToF-SIMS in an Industrial Context: Where We Are and Where We Need to Go
Birgit Hagenhoff
(TASCON GmbH, GERMANY)

23-2-01 (09:40-10:00) *-Oral-*
Combining TOF-SIMS and XPS for OLED analysis
Jean-Paul Barnes, Eric Langer, Tony Maindron, Olivier Renault, Jean-Jaques Pireaux and Laurent Houssiau
(CEA, FRANCE)

23-2-02 (10:00-10:20) *-Oral-*
Analysis of small-molecule OLED layers in solution process and vacuum deposition process by GCIB-TOF-SIMS
Takahiro Shibamori, Sachiko Kojima, Aki Suzuki, Yusaku Tanahashi, Takashi Miyamoto and Junichiro Sameshima
(Toray Research Center, Inc., JAPAN)

23-2-03 (10:20-10:40) *-Oral-*
Dipole-induced extraordinary conduction increase in R-P3HT/P4VP metal-complex cross-linked
Paweł Dąbczyński, Agnieszka Pawłowska, Anna Dłubacz, Mateusz M Marzec, Anna M Majcher, Olaf Stefańczyk, Wojciech Tomczyk, Andrzej Bernasik, Andrzej Budkowski and Jakub Rysz
(Jagiellonian University, POLAND)

Coffee Break (10:40-11:10)

< Indu5 (Room 3) > Chair: W. Unger and K. Usugi

23-2-04 (11:10-11:30) *-Oral-*
3D Characterization and Visualization of Interfacial Decomposition of Composite Cathodes in All-Solid-State Lithium-ion Batteries
Felix Walther, Raimund Koerver, Till Fuchs, Saneyuki Ohno, Joachim Sann, Wolfgang G. Zeier, Jürgen Janek and Marcus Rohnke
(Justus Liebig University Giessen, GERMANY)

23-2-05 (11:30-11:50) *-Oral-*
ToF-SIMS to probe the in-depth distribution of chemical species within interfacial layers of Li-ion batteries
Cécile Courrèges, Nicolas Gauthier, Lenaic Madec, Jean-Bernard Ledeuil, Julien Demeaux, Cécile Tessier and Hervé Martinez
(CNRS, FRANCE)

23-2-06 (11:50-12:10) *-Oral-*
Thickness Measurement of Thin Films by Secondary Ion Mass Spectrometry using MCs_2^+ Ions
Kyung Joong Kim, Tae Gun Kim and Nickolas Kim
(Korea Research Institute of Standards and Science (KRISS), SOUTH KOREA)

Group Photo (12:10-12:40)

Luncheon Seminar (12:40-14:10)

< Indu8 (Room 3) > Chair: A. Belu and I. Mihara

23-2-12 (14:10-14:50) *-Invited-*
When dwarfs rule giants: Surface Characterization in BASF's F&E Landscape
Sabine Hirth
(BASF, GERMANY)

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- 23-2-07 (14:50-15:10) -Oral-
Analysis of permethrin treated fabric using tof-sims
Chuanzhen Zhou, Frederick Stevie and Roberto Garcia
(North Carolina State University, USA)
- 23-2-08 (15:10-15:30) -Oral-
Chemical structure investigation of reacted silane coupling agents by using TOF-SIMS
Kenichi Usugi
(Materials Laboratory and Chemical Integration, Western Digital, JAPAN)
- 23-2-09 (15:30-15:50) -Oral-
Data processing of TOF-SIMS imaging for 3D chemical characterization
Masaki Hachiya and Hiroyuki Noda
(FUJIFILM Corporation, JAPAN)
- Coffee Break (15:50-16:20)
- < Indu11 (Room 3) > Chair: B. Hagenhoff and S. Iida
- 23-2-K1 (16:20-16:50) -Keynote-
Roles played by surface analysis in industries -from a viewpoint of activities of Surface Analysis Society of Japan
Takaharu Nagatomi
(Asahi Kasei Corporation, JAPAN)
- 23-2-010 (16:50-17:10) -Oral-
Investigation of polymer surface phenomena using TOF-SIMS
Naohito Maeno and Mikinao Ito
(Nitto Analytical Techno-center Co., Ltd., JAPAN)
- 23-2-011 (17:10-17:30) -Oral-
Chemical bonding between laser welded aluminum and nylon-6.6
Pierre Hirchenhahn, Adham Al-Sayyad, Julien Bardon, Alexandre Felten, Peter Plapper and Laurent Houssiau
(Namur Institute of Structured Matter (NISM), University of Namur, BELGIUM)
- 23-2-012 (17:30-17:50) -Oral-
Influence of oxyfluorination parameters and post-treatment protocols on the number and type of oxygen containing groups studied by ToF-SIMS and XPS
Sylvain Minot, Jacques Maguin, Ludovic Dupayage, Delphine Pavon, Benoit Poudevigne, Delphine Vialleton, Corinne Gablin, Isabelle Ferreira, Celine Brunon, Daniel Arnaud and Didier Leonard
(University Claude Bernard Lyon 1, FRANCE)
- 23-2-K2 (17:50-18:10) -Keynote-
Desorption electrospray ionization-mass spectrometry imaging (DESI-MSI) applied to the research and development of cosmetic products
Akira Motoyama, Keishi Kihara and Takae Takeuchi
(Shiseido Global Innovation Center, JAPAN)
- < Indu3 (Room 5) > Chair: A. Franquet and Y. Kataoka
- 23-3-11 (09:00-09:40) -Invited-
Challenges in Quantitative Semiconductor Material Analysis
Jang Jung Lee
(TSMC, TAIWAN)
- 23-3-01 (09:40-10:00) -Oral-
Dynamic secondary ion mass spectrometry for semiconductor process control
Alexandre Merkulov, Paula Peres, Kilian Soulard and David J. Larson
(CAMECA, FRANCE)

23-3-02 (10:00-10:20) -Oral-
Thin photoresist layers for microelectronic devices: a comparative study between ToF and Orbitrap™ mass analyzers

Valentina Spampinato, Alexis Franquet, Danilo De Simone, Ivan Pollentier, Nadia Vandenbroeck, Alexander Pirkl, Sven Kayser, Wilfried Vandervorst and Paul van der Heide
(IMEC, BELGIUM)

23-3-03 (10:20-10:40) -Oral-
Structural assessment of (sub-)monolayer coatings in device processing at high spatial resolving power by TOF-SIMS tandem MS imaging

Gregory L. Fisher
(Physical Electronics, USA)

Coffee Break (10:40-11:10)

< Indu6 (Room 5) > Chair: C. Magee and K. Kiyokawa

23-3-12 (11:10-11:50) -Invited-
A holistic approach of SIMS analysis for advanced semiconductor structures

Alexis Franquet, Valentina Spampinato, Alexander Pirkl, Sven Kayser, Rudolf Moellers, Thierry Conard, Wilfried Vandervorst and Paul van der Heide
(IMEC, BELGIUM)

23-3-04 (11:50-12:10) -Oral-
The effect of proximity gettering technology using CH₃O molecular ion implantation on CMOS image sensor fabrication process

Ryo Hirose, Takeshi Kadono, Ryosuke Okuyama, Ayumi Onaka-Masada, Satoshi Shigematsu, Koji Kobayashi, Yoshihiro Koga and Kazunari Kurita
(Kyoto University, JAPAN)

Group Photo (12:10-12:40)

Luncheon Seminar (12:40-14:10)

< Indu9 (Room 5) > Chair: J. Hunter and K. Shingu

23-3-13 (14:10-14:50) -Invited-
Wide applications of SIMS in industry

Jae Cheol Lee
(Samsung Electronics, SOUTH KOREA)

23-3-05 (14:50-15:10) -Oral-
Atom probe of Si/GaAs interface formed by surface-activated bonding: Impact of low-temperature FIB processing on compositional distributions

Yasuo Shimizu, Naoki Ebisawa, Yutaka Ohno, Jianbo Liang, Naoteru Shigekawa and Yasuyoshi Nagai
(Tohoku University, JAPAN)

23-3-06 (15:10-15:30) -Oral-
Quantification of aluminum in Al_xGa_{1-x}N alloys by ToF-SIMS: the interest of the full spectrum method

Rong Huang, Xiao Chen, Fangsen Li and Sunan Ding
(Suzhou Institute of Nano-Tech and Nano-Bionics, Chinese Academy of Sciences (CAS), CHINA)

23-3-07 (15:30-15:50) -Oral-
Indium concentration fluctuations in InGaN quantum wells

Paweł Michałowski, Ewa Grzanka, Szymon Grzanka, Grzegorz Staszczak, Robert Czernecki and Mike Leszczyński
(Łukasiewicz Research Network-Institute of Electronic Materials Technology, POLAND)

Coffee Break (15:50-16:20)

< Indu12 (Room 5) > Chair: J.J. Lee and Y. Shimizu

- 23-3-K1** (16:20-16:50) *-Keynote-*
PCOR-SIMSSM analyses of compound semiconductors
Temel Buyuklimanli
(Eurofins EAG Laboratories, USA)
- 23-3-08** (16:50-17:10) *-Oral-*
A behavior of residual gas component on dynamic-SIMS including NanoSIMS and dual-beam TOF-SIMS
Junichiro Sameshima, Shigenori Numao, Taichi Suda, Yoshihiko Nakata and Masanobu Yoshikawa
(Toray Research Center, Inc., JAPAN)
- 23-3-09** (17:10-17:30) *-Oral-*
Effectiveness of Ga-FIB infrared laser SNMS for analyzing trace elements on semiconductor devices
Haruko Akutsu, Reiko Saito, Jun Asakawa, Kei Kiyokawa, Masato Morita, Tetsuo Sakamoto and Masaaki Fujii
(Kioxia Co., JAPAN)
- 23-3-010** (17:30-17:50) *-Oral-*
Optimized detection limits for light elements using dynamic SIMS
Paula Peres, Seo-Youn Choi, François Desse, Alexandre Merkulov and Shiro Miwa
(CAMECA, FRANCE)
- 23-3-011** (17:50-18:10) *-Oral-*
A Study of the bonding mechanism of low-temperature sintered copper ink
Takuya Asano, Mitsuhiro Wada, Shinichi Yamauchi, Jung-Lae Jo and Kei Anai
(Mitsui Mining and Smelting Co., Ltd, JAPAN)

< Poster Session (Poster & Exhibition Hall) > (18:10-20:10)

- 23-SP-01** **Investigating the physical and chemical 3D architecture of soil microstructures**
Alexander Ost, Tianyi Wu, Tom Wirtz, Carmen Höschen, Carsten W. Mueller and Jean-Nicolas Audinot
(Luxembourg Institute of Science and Technology (LIST), LUXEMBOURG)
- 23-SP-02** **Determination of Al localization in root of barley using SIMS**
Shengguan Cai, Rong Liu, Zhong-Hua Chen and Guoping Zhang
(Western Sydney University, AUSTRALIA)
- 23-SP-03** **Potential bias in SIMS U-Pb age determination, analytical spots positioning strategy and additional U-Pb correction method**
Yu Liu, Qiu-Li Li, Xiao-Xiao Ling and Xian-Hua Li
(Institute of Geology and Geophysics, Chinese Academy of Sciences, CHINA)
- 23-SP-04** **ToF-SIMS: an experimental technique for accurate measurement of sulphur isotopic ratios. Applications in the field of iron corrosion.**
Florence Mercier-Bion, Nicolas Nuns, Delphine Neff, Laurent Urios, Jean-Paul Gallien, Philippe Refait, Céline Remazeilles, Marc Jeannin, René Sabot and Philippe Dillmann
(Université de Lille, FRANCE)
- 23-SP-05** **Detection of surface-stabilised trace level biosignatures in fossilised fly using cluster ion beam**
Naoko Sano, Graham Purvis, James C. Hood and Peter J. Cumpson
(Nara Women's University, JAPAN)
- 23-SP-06** **Investigation of instrumental fractionation in magnesium, silicon, and oxygen isotope analyses in silicates and oxides using SIMS**
Kazuhide Nagashima, Alexander N. Krot, Gary R. Huss, Aurelien Thomen, Nak Kyu Kim and Changkun Park
(University of Hawaii, USA)
- 23-SP-07** **Challenges and principles of 3D ToF-SIMS imaging of microparticles**
Yannik Moryson, Felix Walther, Jürgen Janek and Marcus Rohnke
(Justus-Liebig-Universität Gießen, GERMANY)
- 23-SP-08** **III-V compound analysis using the CAMECA IMS 7f-Auto**
Paula Peres, Seo-Youn Choi, François Desse, Alexandre Merkulov, Pavel Dutta, Monika Rathi, Devendra Khatiwada, Carlos Favela, Sicong Sun, Chuanze Zhang and Venkat Selvamanickam
(CAMECA, FRANCE)
- 23-SP-09** **Influence of a substrate on a growth process of 2D molybdenum disulfide layers determined by secondary ion mass spectrometry**
Paweł Michałowski, Piotr Knyps, Paweł Ciepielewski, Piotr Caban, Ewa Dumiszewska, Grzegorz Kowalski, Mateusz Tokarczyk and Jacek Baranowski
(Łukasiewicz Research Network-Institute of Electronic Materials Technology, POLAND)
- 23-SP-10** **Metal-Phosphate Bilayers for Oxide Nanotube Modification**
Mariana C.O. Monteiro, Gihoon Cha, Patrik Schmuki and Manuela S. Killian
(Friedrich-Alexander University Erlangen, GERMANY)
- 23-SP-11** **Self-assembled monolayers on MgO - bridging the gap from UHV to real life applications**
Evangelia Anastasiou and Manuela S. Killian
(Friedrich-Alexander-University Erlangen, GERMANY)
- 23-SP-12** **Microarea imaging of Sr by two-color resonant ionization sputtered neutral mass spectrometry**
Yue Zhao, Takeru Yoshida, Yuzuka Ohmori, Yuta Miyashita, Masato Morita, Tetsuo Sakamoto, Kotaro Kato, Volker Sonnenschein, Hideki Tomita, Toshihide Kawai, Takeo Okumura, Yukihiko Satou, Masabumi Miyabe and Ikuo Wakaida
(Kogakun University, JAPAN)

- 23-SP-13** **Development of observing method for layered interface of all solid state lithium ion battery**
Kenta Watarai, Masato Morita, Linchun He, Li Lu and Tetsuo Sakamoto
(*Kogakuin University, JAPAN*)
- 23-SP-14** **Improvement of mass resolution of laser SNMS for trace element analysis**
Iun Asakawa, Reiko Saito, Haruko Akutsu, Kei Kiyokawa and Tetsuo Sakamoto
(*Kioxia Co., JAPAN*)
- 23-SP-15** **Microplastic Analyzed by Secondary Ion Mass Spectrometry**
Karsten Lamann, Daniel Breitenstein, Elke Tallarek, Uwe Karst and Birgit Hagenhoff
(*University of Muenster, GERMANY*)
- 23-SP-16** **Identification of Molecular Indicator Paper Components by Orbitrap-SIMS and Multivariate Analysis**
Karsten Lamann, Daniel Breitenstein, Reinhard Kersting, Elke Tallarek, Alexander Pirkl, Ewald Niehuis and Birgit Hagenhoff
(*University of Muenster, GERMANY*)
- 23-SP-17** **ToF-SIMS study of titanium tungsten functionalization and of orthogonal chemical functionalization on patterned Au/TiW or Au/SiO₂/TiW substrates**
Jian Zhang, Christelle Yeromonahos, Thomas Géhin, Radoslaw Mazurczyk, Virginie Monnier, Claude Botella, Genevieve Grenet, Aziz Benamrouche, Jose Penuelas, Stephane Monfray, Muchen Li, Yann Chevolot, Jean-Pierre Cloarec and Didier Leonard
(*University Claude Bernard Lyon 1, FRANCE*)
- 23-SP-18** **In-situ multimodal characterization of functional materials via combined AFM/ToF-SIMS platform**
Anton V. Ievlev, Sergei V. Kalinin and Olga S. Ovchinnikova
(*Oak Ridge National Laboratory, USA*)
- 23-SP-19** **Depth profiling of sub-100 nm structures: New dimensions in data understanding through the combination of ToF-SIMS with in-situ AFM**
Thierry Conard, Valentina Spampinato, Alexis Franquet, Wilfried Vandervorst and Paul van der Heide
(*IMEC, BELGIUM*)
- 23-SP-20** **Development of MeV TOF-SIMS capillary microprobe**
Marko Brajković, Marko Barac, Domagoj Cosic, Zdravko Siketić and Iva Bogdanović Radović
(*Ruđer Bošković Institute, CROATIA*)
- 23-SP-21** **Membrane lipid imaging of untreated wet cells covered by graphene with time-of-flight secondary ion mass spectrometry (ToF-SIMS)**
Heejin Lim, Sun Young Lee, Yereum Park, Yun Hee Jang and Dae Won Moon
(*Daegu Gyeongbuk Institute of Science and Technology, SOUTH KOREA*)
- 23-SP-22** **Tracing photosynthetic carbon distribution during xylem formation**
Miyuki Takeuchi, Mariko Norisada and Akira Isogai
(*Graduate School of Agricultural and Life Sciences, The University of Tokyo, JAPAN*)
- 23-SP-23** **Graphene Enables Hydrated Cell Imaging by Secondary Ion Mass Spectrometry**
Zhaoying Wang, Nhu Phan and Andrew Ewing
(*University of Gothenburg, SWEDEN*)
- 23-SP-24** **Comparative study between Bi₃⁺ imaging in ToF-SIMS and Ar₃₀₀₀⁺ imaging in Hybrid SIMS on Drosophila brains of amyotrophic lateral sclerosis model**
Minh Uyen T. Le, Jin Gyeong Son, Hyung Kyong Shon, Alexander Pirkl, Jeong Hyang Park, Sung Bae Lee and Tae Geol Lee
(*Korea Research Institute of Standards and Science (KRISS), SOUTH KOREA*)

- 23-SP-25 Fast identification of microplastics in complex environmental samples by TOF-SIMS**
Chuan Du, Handong Liang, Zhanping Li and Jie Gong
(China University of Mining and Technology (Beijing), CHINA)
- 23-SP-26 Quality control of princeps and generics of asthma drugs using multi techniques approach**
Manale Noun, Imane Abbas, Rayane Akoumeh, Sophie Lecomte, Ali Srour and Mohamad Roumie
(Lebanese Atomic Energy Commission-National Council for Scientific Research, LEBANON)
- 23-SP-27 Specific target imaging of lipids and proteins at cellular plasma membrane using nanoSIMS**
Paola Agüi-Gonzalez, Silvio O. Rizzoli and Nhu T.N. Phan
(University of Goettingen Medical Center, GERMANY)
- 23-SP-28 Fabrication and Characterizations of Amine-functionalized PEG Thin Films by Using Plasma-Enhanced Chemical Vapor Deposition**
Youngmi Kim, Hee-Kyung Na, Hyun Kyong Shon, Donggeun Jung and Tae Geol Lee
(Korea Research Institute of Standards and Science (KRISS), SOUTH KOREA)
- 23-SP-29 Spatio-temporal changes in chemical composition in infarcted mouse heart tissue elucidated by imaging mass spectrometry**
Sanna Sämfors, Ibrahim Kaya, Jan Borén and John S. Fletcher
(University of Gothenburg, SWEDEN)
- 23-SP-30 Chemical imaging of aggressive basal cell carcinoma using time-of-flight secondary ion mass spectrometry**
Kelly Dimovska Nilsson, Marwa Munem, Noora Neittaanmaki, Oscar Zaar, John Paoli and John S. Fletcher
(University of Gothenburg, SWEDEN)
- 23-SP-31 Quantitative analysis of oncometabolites in cancer cell extracts using ToF-SIMS**
Jungdae Park, Hee-Kyung Na, Hyung Kyong Shon, Hye Young Son, Sang-Won Lee, Yong-Min Huh and Tae Geol Lee
(Research Institute for Natural Sciences, Korea University, SOUTH KOREA)
- 23-SP-32 Diagnosing the masses – A lipidomic study into the effects of NSAIDs on prostate cancer cell lines using MSI**
Danielle J. McDougall, Emrys Jones, Claire Hart, Michael Brown, Adam McMahon and Nicholas Lockyer
(University of Manchester, UK)
- 23-SP-33 Biological sample preparation for analysis in high vacuum of SIMS instruments – outcomes of the 89th IUVESTA Workshop**
Paulina D. Rakowska, Junting Zhang and Ian S. Gilmore
(National Physical Laboratory, UK)
- 23-SP-34 Applications of freeze sectioning system for TOF-SIMS**
Masato Morita and Tetsuo Sakamoto
(Kogakuin University, JAPAN)
- 23-SP-35 Investigating the effect of zinc on lipid composition in Drosophila brain using mass spectrometry imaging**
Chaoyi Gu, Mai Hoang Philipsen and Andrew Ewing
(University of Gothenburg, SWEDEN)
- 23-SP-36 Multi-omics imaging of frozen-hydrated tissues at the single cell level using a high voltage water cluster ion beam**
Hua Tian, Sadia Sheraz (née Rabbani), John C. Vickerman, Nicholas Winograd and Peter J. Cumpson
(Pennsylvania State University, USA)

- 23-SP-37** **Analysis of amino acids on tungsten needle by static voltage atom probe**
Yasuhito Gotoh, Masahiro Nakakami, Yuki Haneji, Chikasa Nishimura, Tasuku Sone and Hiroshi Tsuji
(*Kyoto University, JAPAN*)
- 23-SP-38** **Development of a gas cluster ion beam source for ToF-SIMS analysis**
Sang Ju Lee, Chang Min Choi, Boo Ki Min, Ji Young Baek, Jae Young Eo and Myoung Choul Choi
(*Korea Basic Science Institute, SOUTH KOREA*)
- 23-SP-39** **Sensitivity Enhancement of Biological Lipid by Using Steroid Matrix in Bi Cluster TOF-SIMS**
Rie Shishido, Makiko Fujii, Masaya Mitsuishi and Shigeru Suzuki
(*Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, JAPAN*)
- 23-SP-40** **Sputtered neutral mass spectrometry using multiple reflection of laser considering Doppler broadening**
Yue Zhao, Yuzuka Ohmori, Yuta Miyashita, Masato Morita, Tetsuo Sakamoto, Kotaro Kato, Volker Sonnenschein, Hideki Tomita, Toshihide Kawai, Takeo Okumura, Yukihiko Satou, Masabumi Miyabe and Ikuo Wakaida
(*Kogakuin University, JAPAN*)
- 23-SP-41** **The influence of polyatomic primary ion chemistry on matrix effects in ToF-SIMS**
Afnan M. Alnajeebi, John C. Vickerman and Nicholas Lockyer
(*University of Jeddah, SAUDI ARABIA*)
- 23-SP-42** **Investigation of gas cluster ion beam for depth profiling of hybrid materials**
Hsun-Yun Chang
(*ULVAC-PHI, Inc., JAPAN*)
- 23-SP-43** **Observation of secondary ions and lights emitted from material surface irradiated with highly charged ions**
Naofumi Nishida, Kousuke Murakami, Yuki Hori, Susumu Murakami, Makoto Sakurai, Daiji Kato, Hiroyuki Sakaue and Izumi Murakami
(*Kobe University, JAPAN*)
- 23-SP-44** **MeV-SIMS Measurement of Electrolyte of Lithium Ion Battery**
Tomoya Nonomura, Toshio Seki, Takaaki Aoki and Jiro Matsuo
(*Kyoto University, JAPAN*)
- 23-SP-45** **Development of a high energy cluster SIMS system with 50keV GCIB source**
Kentaro Hirata, Toshio Seki, Takaaki Aoki and Jiro Matsuo
(*Kyoto University, JAPAN*)
- 23-SP-46** **Enhancement of ionization probability of Polymers with cation deposition method**
Taiki Matsuda, Toshio Seki, Takaaki Aoki and Jiro Matsuo
(*Kyoto University, JAPAN*)
- 23-SP-47** **Analysis of drug compounds by femtosecond laser desorption postionization mass spectrometry**
Luke Hanley, Raveendra Wickramasinghe, Ivan Rungger, Igor V. Veryovkin, Ian S. Gilmore and Cornelius L. Pieterse
(*University of Illinois at Chicago, USA*)
- 23-SP-48** **Angular Distribution of Neutral Species from Rhodamine 6G Sputtered with Cluster Ion Bombardment**
Rika Oki, Naoko Sano, Toshio Seki, Takaaki Aoki and Jiro Matsuo
(*Kyoto University, JAPAN*)
- 23-SP-49** **A method for submicron sulfur isotopic imaging with NanoSIMS**
Jialong Hao, Wei Yang, Zhaoyang Li, Sen Hu, Qingzhu Yin, Hitesh Changela and Yangting Lin
(*Institute of Geology and Geophysics, Chinese Academy of Sciences, CHINA*)

- 23-SP-50** **Apatite [Ca₅(PO₄)₃(F,Cl,OH)] Sr isotope measurements using intermediate- and high-MRP methods**
Heejin Jeon, Martin J. Whitehouse, Alexander A. Nemchin and Jeongmin Kim
(*Swedish Museum of Natural History, SWEDEN*)
- 23-SP-51** **Quantitative analysis of hydrogen in silicate glass using Cameca ims-4fE7 SIMS**
Shoichi Itoh and Akimasa Suzumura
(*Kyoto University, JAPAN*)
- 23-SP-52** **Comparison of the clustering using shape and composition parameters for aerosol analysis**
Tetsuo Sakamoto, Ryota Koiwai, Masato Morita and Kodai Takano
(*Kogakuin University, JAPAN*)
- 23-SP-53** **Electro-Spray Dialysis for TOF-SIMS analysis of Organics and Composites**
Toru Murata, Masato Morita and Tetsuo Sakamoto
(*Kogakuin University, JAPAN*)
- 23-SP-54** **Application of electrospray dialysis method for individual aerosol analysis**
Shunki Karasawa, Toru Murata, Masato Morita and Tetsuo Sakamoto
(*Kogakuin University, JAPAN*)
- 23-SP-55** **Analysis of Li discharged products of Li-O₂ batteries using helium ion microscope coupled with SIMS detector**
Shinya Nagashima, Jean-Nicolas Audinot, Tom Wirtz, Laurent Castro and Keisuke Kishita
(*Toyota Motor Europe NV/SA, BELGIUM*)
- 23-SP-56** **Development of cluster ion beam and TOF SIMS in KBSI**
Myoung Choul Choi, Sang Ju Lee, Chang Min Choi, Ji Young Baek and Jae Yeong Eo
(*Korea Basic Science Institute, SOUTH KOREA*)
- 23-SP-57** **Development of liquid metal ion sources for time for flight secondary ion mass spectrometry**
Boo Ki Min, Sang Ju Lee, Chang Min Choi, Ji Young Baek, Jae Yeong Eo and Myoung Choul Choi
(*Korea Basic Science Institute, SOUTH KOREA*)
- 23-SP-58** **Design and construction of high-resolution secondary ion time-of-flight mass analyzer**
Ping Chen, Jichun Jiang, Lei Hua and Haiyang Li
(*Dalian Institute of Chemical Physics, Chinese Academy of Sciences, CHINA*)
- 23-SP-59** **Orbitrap-SIMS: New Analytical Options Demonstrated on Highlighter Inks**
Karsten Lamann, Daniel Breitenstein, Reinhard Kersting, Elke Tallarek, Alexander Pirkl, Ewald Niehuis, Uwe Karst and Birgit Hagenhoff
(*University of Muenster, GERMANY*)
- 23-SP-60** **Combination of Thin Layer Chromatography and Secondary Ion Mass Spectrometry for the Analysis of Complex Sample Systems**
Karsten Lamann, Elke Tallarek, Daniel Breitenstein, Uwe Karst, Alexander Pirkl, Ewald Niehuis and Birgit Hagenhoff
(*University of Muenster, GERMANY*)
- 23-SP-61** **Single Cell Metabolomic Profiling of Activated Macrophages using 3D OrbiSIMS**
Waraporn Suvannapruk, Chidimma Mbadugha, Dong-hyun Kim, David J. Scurr, Amir Ghaemmaghami and Morgan R. Alexander
(*School of Pharmacy, University of Nottingham, UK*)
- 23-SP-62** **3D analysis of intermetallic formation in blankets and micro-bumps**
Valentina Spampinato, Alexis Franquet, Jean-Paul Barnes and Thierry Conard
(*IMEC, BELGIUM*)
- 23-SP-63** **Quantification of magnesium in III-nitride deep-UV LEDs**
Andrew Klump, Chuanzhen Zhou, Frederick Stevie, Ramon Collazo and Zlatko Sitar
(*Wide Bandgaps Laboratory, North Carolina State University, USA*)

- 23-SP-64** **The analysis of fragmentation channels of polyethylene oxide with different end groups using tandem mass spectrometry**
Kei Ishitsuka, Takahiro Hoshi, Takaya Satoh, Masaki Sato, Shin-ichi Iida, Taihei Inoue, Toshiji Kudo, Terumi Sakabe and Chika Nogami
(*Innovative Technology Research Center, AGC Inc., JAPAN*)
- 23-SP-65** **Examination of beauty ingredient distribution in the skin by TOF-SIMS**
Tomoko Kawashima, Takahiro Aoki, Yuko Taniike and Satoka Aoyagi
(*Appliances Company, Panasonic Corporation, JAPAN*)
- 23-SP-66** **The multi-layer depth calibration of SIMS analysis for VCSEL**
M.L. Hsu, Ming-Ching Huang, H.Y. Tsou and Y.F. Hsieh
(*Materials Analysis Technology, TAIWAN*)
- 23-SP-67** **Characterization of asphaltene deposits & solid bitumen by ToF-SIMS**
Tanguy Terlier, Shayan Enayat, Zhuqing Zhang, Xiaokong Yu, Tao Mingjiang, Nancy Burnham, Francisco Vargas, Sibani Biswal and Rafael Verduzco
(*Rice University, USA*)
- 23-SP-68** **Weathering degradation analysis of alkyd-melamine coatings by TOF-SIMS**
Haruya Kakuta, Junichiro Sameshima, Ryoichi Kumazawa, Kanako Kawaguchi and Mariko Tokuoka
(*Toray Research Center, Inc., JAPAN*)
- 23-SP-69** **ToF-SIMS Imaging and 3D Reconstruction of Cu in Metal Scavenging Polymers**
Ivan Kempson, Simarpreet Kaur, John Denman and Alex Cavallaro
(*University of South Australia, AUSTRALIA*)
- 23-SP-70** **Surface analysis of fluid absorbent pads using tof-sims**
Chuanzhen Zhou, Dayong Sun and Prachi Agrawal
(*Analytical Instrumentation Facility, North Carolina State University, USA*)
- 23-SP-71** **Depth profiling analysis of the OLED materials using Ar GCIB and laser**
Ji Young Baek, Chang Min Choi, Sang Ju Lee, Boo Ki Min and Myoung Choul Choi
(*Korea Basic Science Institute, SOUTH KOREA*)
- 23-SP-72** **A mass spectrometry imaging method for visualizing degraded synthetic polymers by using average molecular weight and dispersity**
Takaya Satoh, Sayaka Nakamura, Thierry Fouquet, Hiroaki Sato and Yoshihisa Ueda
(*JEOL Ltd., JAPAN*)
- 23-SP-73** **Determination of diffusion coefficients of water in thin films by SIMS combined with isotopic labeling**
Tatsuru Nakamura, Takashi Miyamoto and Junichiro Sameshima
(*Toray Research Center, Inc., JAPAN*)
- 23-SP-74** **Fragmentation pattern of Fatty Acid Amides in TOF-SIMS with Tandem MS**
Miyako Tozu, Shin-ichi Iida and Takuya Miyayama
(*ULVAC-PHI Inc, JAPAN*)
- 23-SP-75** **Surface transition temperature determination of propanethiol-based plasma polymer films using backscattered Ar clusters**
Claude Poleunis, Nathan Vinx, Damien Cossement, Damien Thiry, Rony Snyders, Amhad Rezaei Kolahchi and Arnaud Delcorte
(*Université catholique de Louvain, BELGIUM*)
- 23-SP-77** **ToF-SIMS depth profiling of conductive self-assembled two-metal centres supramolecular wires onto oxides**
Andrea M. G. Valenti, Nunzio Tuccitto, Maria E. Amato, Alberto Torrisi, Garry S. Hanan and Antonino Licciardello
(*Università degli Studi di Catania, ITALY*)

- 23-SP-78 Argon gas cluster fragmentation and scattering as a probe of the surface transition of thermoset polymers**
Mykhailo Chundak, Rikesh Patel, Claude Poleunis, Alain Jonas and Arnaud Delcorte
(*Université catholique de Louvain (UCL), BELGIUM*)
- 23-SP-79 An alternative application of ToF-SIMS/in-situ AFM: controlled sample preparation for IC failure analysis**
Alexis Franquet, Valentina Spampinato, Ahmad Khaled, Thierry Conard, Sebastian Brand, Michael Kögel, Ingo Wiesler and Ingrid De Wolf
(*IMEC, BELGIUM*)
- 23-SP-80 Concentration phenomenon of H in Ta to metal region by anodization.**
Tsutomu Asakawa, Daisuke Nagano, Hiromu Miyazawa, Tatsushi Kato and Hiroshi Kato
(*Seiko Epson Corporation, JAPAN*)
- 23-SP-81 Evolution of oxygen grain boundary diffusion in BaTiO₃ ceramics with high accuracy of (Ba, Sm)/Ti ratio**
Isao Sakaguchi, S. Hirose and N. Ohashi
(*National Institute for Materials Science, JAPAN*)
- 23-SP-82 Wider Vision Capability of Curved Surface Sample Holder for TOF-SIMS Imaging**
Shin-ichi Iida, Takuya Miyayama and Ibuki Tanaka
(*ULVAC-PHI, Inc., JAPAN*)
- 23-SP-83 Imaging correction of multi-color resonant laser sputtered neutral mass spectrometry by a multi-channel time-to-digital converter**
Tetsuo Sakamoto, Yuta Miyashita, Y. Zhao, Masato Morita, Kotaro Kato, Volker Sonnenschein, Hideki Tomita, Toshihide Kawai, Takeo Okumura, Yukihiko Satou, Masabumi Miyabe and Ikuo Wakaida
(*Kogakuin University, JAPAN*)
- 23-SP-84 Secondary ion imaging using combination of small selected area and DTOS**
Shiro Miwa
(*Ametek co ltd., JAPAN*)
- 23-SP-86 Correlative analysis in the semiconductor industry**
David J. Larson, Ty J. Prosa, Isabelle Martin, Alexandre Merkulov, Anne-Sophie Robbes, Olivier Dulac, Nicolas Bernier, Vincent Delaye, Alexis Franquet, Paul van der Heide, Valentina Spampinato and Wilfried Vandervorst
(*Cameca, USA*)
- 23-SP-87 Depth profiling and imaging analysis of automotive coatings using GD-OES and NanoSIMS**
Yoshihiko Nakata, Shigenori Numao and Junichiro Sameshima
(*Toray Research Center, Inc., JAPAN*)
- 23-SP-88 Depth resolution and sensitivity on depth profiling for InAlGaP multi-layer using dynamic-SIMS including NanoSIMS, dual-beam TOF-SIMS and GD-OES**
Harumi Yamamoto, Tomomi Sugimoto, Shigenori Numao, Yoshihiko Nakata, Taichi Suda and Junichiro Sameshima
(*Toray Research Center, Inc., JAPAN*)
- 23-SP-89 Combining SIMS with PP-TOFMS for Fast Compositional Depth Profile Analysis for Microelectronic applications**
Jean-Paul Barnes, Y. Mazel, E. Nolot, A. Tempez and S. Legendre
(*Univ. Grenoble Alpes, CEA, LETI, FRANCE*)

Thursday, 24 October

< Plenary (Room 1) > Chair: I. Gilmore and H. Yurimoto

24-1-P1 (09:00-10:00) *-Plenary-*
From early studies with polyatomic ion beams, to pigments in old master paintings, and natural substances in tropical woods; the exciting journey of time-of-flight secondary ion mass spectrometry

Alain Brunelle
(CNRS and Sorbonne University, FRANCE)

Coffee Break (10:00-10:30)

< Bio5 (Room 1) > Chair: P. Sjövall and A. Motoyama

24-1-I1 (10:30-11:10) *-Invited-*
Bigger beams; better bio-analysis?

John S. Fletcher
(University of Gothenburg, SWEDEN)

24-1-01 (11:10-11:30) *-Oral-*
Analysis of Tattooed Human Skin Samples by ToF-SIMS and Orbitrap-SIMS
Daniel Breitenstein, Karsten Lamann, Corinna Brungs, Elke Tallarek, Alexander Pirkl, Ewald Niehuis and Birgit Hagenhoff
(University of Muenster, GERMANY)

24-1-02 (11:30-11:50) *-Oral-*
ToF-SIMS Studies on Structural Colors in Korean Jeweled Beetle, *Chrysochroa Coreana*
Yeonhee Lee, Tanguy Terlier, Jihye Lee, Seon Hee Kim, Yun J. Jang and Yong-Bi Shin
(Korea Institute of Science and Technology, SOUTH KOREA)

24-1-03 (11:50-12:10) *-Oral-*
Imaging biology in 3D
Lara J. Gamble, Michael J. Taylor and Daniel J. Graham
(University of Washington, USA)

24-1-04 (12:10-12:30) *-Oral-*
Co-Exposition of CeO₂ and Al₂O₃ nanoparticles to alveolar human macrophages
Y. Hachenberger, F. Kriegel, Harald Jungnickel, P. Reichardt, J. Tentschert and A. Luch
(The German Federal Institute for Risk Assessment, GERMANY)

Lunch & Excursion (12:30-)

< Fun5 (Room 4) > Chair: M. Dürr and N. Maeno

24-2-01 (10:30-10:50) *-Oral-*
Impact of molecular weight on the characterization of polymer thin films using low energy Cs⁺ sputtering
Amal Ben Hadj Mabrouk, Marc Veillerot, Christophe Licitra and Antoine Chateauinois
(CEA LETI, FRANCE)

24-2-02 (10:50-11:10) *-Oral-*
Bismuth attached intact molecular secondary ions [M+Bi]⁺ under low-energy bismuth primary ion beam irradiation
Takuya Miyayama and Shin-ichi Iida
(ULVAC-PHI, Inc., JAPAN)

- 24-2-03** (11:10-11:30) -Oral-
Implementation of a Multiplexed Time-of-Flight SIMS
John Medland, Paul Wright, Mathew Newman, Bernard Treves-Brown, Krikor Ozanyan and Nicholas Lockyer
(University of Manchester, UK)
- 24-2-04** (11:30-11:50) -Oral-
Combining ToF-SIMS with energy filtering to overcome classic limitations
Torsten Henkel, Nick Long and Vic Parr
(Scientific Analysis Instruments, UK)
- 24-2-05** (11:50-12:10) -Oral-
An ion-storage time-of-flight mass spectrometer for SIMS using continuous primary beam
Haiyang Li, Ping Chen, Jichun Jiang and Chenxin Wu
(Dalian Institute of Chemical Physics, Chinese Academy of Sciences, CHINA)
- 24-2-06** (12:10-12:30) -Oral-
Potential energy landscapes of amorphous materials as derived from quantitative analysis of ToF-SIMS concentration depth profiles
Karl-Michael Weitzel, David Budina and Martin Schäfer
(Philipps-Universität Marburg, GERMANY)
- Lunch & Excursion (12:30-)
- < Cmplx3 (Room 5) > Chair: A. Henderson and S. Aoyagi
- 24-3-01** (10:30-10:50) -Oral-
This talk is classified: 2D and 3D ToF-SIMS image classification
Daniel J. Graham and Lara J. Gamble
(NESAC/BIO, University of Washington, USA)
- 24-3-02** (10:50-11:10) -Oral-
Multiplexing ToF-SIMS acquisition modes to improve information yield
Henrik Arlinghaus, Derk Rading and Ewald Niehuis
(IONTOF, GERMANY)
- 24-3-03** (11:10-11:30) -Oral-
Visualization of surface-active bottlebrush polymer additives through ToF-SIMS
Hao Mei, Tanguy Terlier, Travis Law, Jiabei Li, Peter Bonnesen, David Uhrig, Gila Stein and Rafael Verduzco
(Rice University, USA)
- 24-3-04** (11:30-11:50) -Oral-
Applications of ToF-SIMS to graphene and other 2D Materials
Lu-Tao Weng, Irfan H. Abidi, Abhishek Tyagi and Zhengtang Luo
(The Hong Kong University of Science and Technology, HONG KONG)
- 24-3-05** (11:50-12:10) -Oral-
Two dimensional material Mo₂C with dopant investigated by TOF-SIMS
Chunli Dai, Chuan Xu, Wencai Ren and Lei Zhang
(Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, CHINA)
- 24-3-06** (12:10-12:30) -Oral-
Investigation of metal ion diffusion in polypropylene with ToF-SIMS
Stefanie Kern, Mark-Melvin Pradja, Christine Kern, Jürgen Janek and Marcus Rohnke
(Justus-Liebig-University of Giessen, GERMANY)

Lunch & Excursion (12:30-)

Banquet (The Westin Miyako Kyoto)

The doors will open at 18:30.

The event starts at 19:00.

Friday, 25 October

< Bio6 (Room 1) > Chair: A. Brunelle and M. Ogaki

25-1-11 (09:00-09:40) *-Invited-*
Under construction: Increasing ionization efficiencies of intact biomolecules from tissues

Nina Ogrinc, Primož Pelicon, Ron M.A. Heeren, Michel Salzet and Isabelle Fournier
(University of Lille, FRANCE)

25-1-01 (09:40-10:00) *-Oral-*
Label-free 3D molecular imaging of a *Pseudomonas aeruginosa* biofilm using cryo-OrbiSIMS

Junting Zhang, James Brown, David J. Scurr, Anwen Bullen, Kirsty McLellan-Gibson, Kim R. Hardie, Morgan R. Alexander, Paul Williams, Ian S. Gilmore and Paulina D. Rakowska
(National Physical Laboratory, UK)

25-1-02 (10:00-10:20) *-Oral-*
ToF-SIMS imaging of zebrafish pigmented cells

Sebastian Van Nuffel, Vincent Bojan, Hua Tian, Khai Ang, Alex Lin and Keith Cheng
(The Pennsylvania State University, USA)

Coffee Break (10:20-10:50, Lounge)

< Geo4 (Room 1) > Chair: L-T. Weng and K. Bajo

25-1-03 (10:50-11:10) *-Oral-*
Aliphatic, aromatic and everything between – ToF-SIMS characterization of surface structures on bitumen

Peter Sjövall, Hilde Soenen, Martin Andersson and Xiaohu Lu
(RISE Research Institutes of Sweden, SWEDEN)

25-1-04 (11:10-11:30) *-Oral-*
ToF-SIMS detection and identification of dyes on textiles from XIX century

Alessandra V. Bombace, Caroline Bouvier, Philippe Walter, Antonino Licciardello and Alain Brunelle
(University of Catania, ITALY)

25-1-05 (11:30-11:50) *-Oral-*
The Hyperion-II Radio-frequency Oxygen Ion Source on the UCLA ims1290 Ion Microprobe: Beam Characterization

Ming-Chang Liu, Kevin D. McKeegan, T. Mark Harrison, George Jarzebinski, Lvcian Vltava and Kaitlyn A. McCain
(UCLA, USA)

Closing 11:50-

< Fun6 (Room 3) > Chair: R. Webb and K. Moritani

25-2-11 (09:00-09:40) *-Invited-*
MeV-SIMS Measurements under Ambient and Humid Conditions

Toshio Seki
(Kyoto University, JAPAN)

25-2-01 (09:40-10:00) -Oral-
Ionization probability of sputtered molecules: Influence of the projectile cluster
Lars Breuer, Hua Tian, Andreas Wucher and Nicholas Winograd
(*Universität Duisburg-Essen, GERMANY*)

25-2-02 (10:00-10:20) -Oral-
Andromede, innovative multi-purpose facility for surface analysis
Serge Della Negra, Dominique Jacquet, Thanh Loan Lai, Jean Lesrel, Isabelle Ribaud, Suheyla Bilgen, Bruno Mercier, Gael Sattonnay, Donia Baklouti, Yann Arribard, Luis Augusto, Richard Chaby, Pierre Tissieres, Michael J. Eller, Stanislav Verkhoturov and Emile Schweikert
(*CNRS/IN2P3, Université Paris Saclay, FRANCE*)

Coffee Break (10:20-10:50, Lounge)

< Fun7 (Room 3) > Chair: L. Hanley and T. Miyamoto

25-2-03 (10:50-11:10) -Oral-
Ion yield improvement of laser SNMS using two different wavelength lasers
Reiko Saito, Haruko Akutsu, Jun Asakawa, Kei Kiyokawa, Yue Zhao, Masato Morita and Tetsuo Sakamoto
(*Institute of Memory Technology Research & Development, Kioxia Co., JAPAN*)

25-2-04 (11:10-11:30) -Oral-
Topography formation during cluster projectile bombardment of various materials - an insight from the Molecular Dynamics Computer Simulations
Dawid Maciążek, Michał Kański and Zbigniew Postawa
(*Jagiellonian University, POLAND*)

25-2-05 (11:30-11:50) -Oral-
Simulation of SIMS depth profiles by means of MD-based advection-diffusion-reaction model
Nunzio Tuccitto, Dawid Maciążek, Zbigniew Postawa, Andrea Valenti and Antonino Licciardello
(*Università degli Studi di Catania, ITALY*)

Closing (Room 1) 11:50-

< High3 (Room 4) > Chair: H. Tian and Y. Nakata

25-3-11 (09:00-09:40) -Invited-
Focused ion beam system equipped with gas field ion source for industrial application
Anto Yasaka, F. Aramaki, T. Kozakai, O. Matsuda, K. Shiina and Y. Kawanami
(*Hitachi High-Tech Science Corporation, JAPAN*)

25-3-01 (09:40-10:00) -Oral-
Improved cesium and oxygen primary ion source designs for SIMS
Peter Williams, M. Bose, L. Williams and R.L. Hervig
(*Arizona State University, USA*)

25-3-02 (10:00-10:20) -Oral-
Exploration and characterization of nano-features with the ORION NanoFab-SIMS
Vignesh Viswanathan, Christelle Guillermier, Fouzia Khanom and Brett Lewis
(*Carl Zeiss Pte Ltd, USA*)

Coffee Break (10:20-10:50, Lounge)

< Inorg2 (Room 4) > Chair: A. Henss and M. Morita

25-3-03 (10:50-11:10) -Oral-

Evidence of trace solid solution from ions ratio analysis in depth

Lei Zhang, Chunli Dai and Pei Wang

(Shenyang National Laboratory of Materials Science, Institute of Metal Research, Chinese Academy of Sciences, CHINA)

25-3-04 (11:10-11:30) -Oral-

Quantification of trace amounts of transmuted nuclides in neutron-fluence detectors using SIMS

Jan Lorincik, Ladislav Viererbl, Vit Klupak, Hana Assmann Vratislavská, Klara Rezanková and Kristina Sihelská

(Research Center Rez, CZECH)

25-3-05 (11:30-11:50) -Oral-

Depth profiling of thin oxide layers on polycrystalline FeCr steel

Gerrit Zijlstra, Tomáš Šamořil, Hana Tesařová, Václav Ocelík and Jeff Th. M. De Hosson
(TESCAN ORSAY HOLDING, a.s., CZECH)

Closing (Room 1) 11:50-