

# International Union of Microbeam Analysis Societies (IUMAS) 2014

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## Established 1994

The International Union of Microbeam Analysis Societies, founded in 1994, is a non-profit organization of professional societies whose objective is to promote world-wide cooperation in all aspects of microbeam analysis, to achieve this through the organization of an International Congress on microbeam analysis every four years, and to participate in joint committees with other scientific organizations in matters relevant to microbeam analysis which are better discussed on a world scale.

## IUMAS Council

IUMAS President	Se Ahn Song
IUMAS Secretary	Nicholas W.M. Ritchie
IUMAS Past President	Brendan Griffin
Australian Microbeam Analysis Society	Richard Wuhrer, President
CSIRO Australia	Colin MacRae
Canadian Microscopical Society	Anja Geitmann, President
Canadian Federation for Development of Microscopy	Pierre-Mathieu Charest
Brazilian Society for Microscopy and Microanalysis	Sonia Bao
Microanalysis Society	Edward Vicenzi
The 141 <sup>st</sup> Committee on Microbeam Analysis, Japan	Yahichi Sato, President
Technical Committee of Microbeam Analysis, China	Jiang Zhao
Technical Committee of Microbeam Analysis, China	Fen Liu
Korean Society of Microscopy	Young-woon Kim
European Microbeam Analysis Society	Michael B. Matthews, President
European Microbeam Analysis Society	Xavier Liovet, Vice President

## Past Meetings

	<b>Location</b>	<b>Chair</b>
2012	Seoul, South Korea	Se Ahn Song
2008	Perth, Australia	Brendan Griffith
2005	Firenze, Italy	Clive Walker
2000	Kona, Hawaii USA	David Williams
1996	Sydney, Australia	Clive Nockolds

## At-Large ECS Winners Supported by Microbeam Analysis Society

Aki Takigawa, *Carnegie Institute of Washington*

“Morphologies, Isotopes, Crystal Structures, and Microstructures of Presolar Al<sub>2</sub>O<sub>3</sub> Grains: a NanoSIMS, EBSD, EDS, CL, and FIB-TEM Study”

Shirin Kaboli, *McGill University*

“Electron Channeling Contrast Observations in Deformed Magnesium Alloys”

## Australian Microbeam Analysis Society

Aoife McFadden, *University of Adelaide South Australian Museum*

“Otolith Biomineralisation: Insights From a Microstructural and Microanalytical Study”

Tim Murphy, *University of Western Sydney*

“Mineral Analyses & Implications on the Dispersion of Bismuth in the Super-gene Environment of Eastern Australia”

“X-ray Mapping Investigations of the Monazites from the Mt Weld Deposit - Compositional Variance as an Indicator of Provenance”

## Brazilian Society for Microscopy and Microanalysis

Vitor Hugo Balasco Serrao, *Electron Microscopy Physics Institute of São Carlos, University of São Paulo*

“Investigation of *Escherichia coli* Selenocysteine Synthase (SelA) Complex Formation Using Cryo-Electron Microscopy (Cryo-EM)”

Patricia Fernanda Andrade, *Department of Chemistry, University of Campinas*

“Structural and Morphological Investigations of β-Cyclodextrin-Coated Silver Nanoparticles”

## Canadian Society for Microscopy, Canadian Federation for Development of Microscopy

Samuel Bastien, *Chemical and Biotechnological Engineering, Université de Sherbrooke*

“Plasma Synthesis of Faceted Nickel nano-Ferrites with Controlled Stoichiometry”

Xiaohui Zhu, *Chemistry and Chemical Biology, McMaster University*

“Probing Magnetic Polarities of Magnetotactic Bacteria by X-ray Magnetic Circular Dichroism in a Scanning Transmission X-ray Microscope”

## Technical Committee of Microbeam Analysis of China

Zhu Ruan, *University of Science and Technology of China*

“Quantum Monte Carlo Simulation for Atomic Resolution SEM/STEM Image”

Yanbo Zou, *University of Science and Technology of China*

“Model-Based Library for Critical Dimension Metrology by CD-SEM”

## European Microbeam Analysis Society

Aurélien Moy, *Commissariat à l'Énergie Atomique, Centre de Marcoule DEN/DTEC/SGCS/LMAC*

“Quantification Of Actinides By EPMA: A New Accurate Standardless Approach”

Philippe T. Pinard, *RWTH Aachen Gemeinschaftslabor für Elektronenmikroskopie (GFE)*

“Towards Reliable Quantification of Steel Alloys at Low Voltage”

## Japan – The 141<sup>st</sup> Committee on Microbeam Analysis

Masaru Irita, *Tokyo University of Science*

“A Study of Single-Walled Carbon Nanotube Cap Structure Using Field Emission Image”

Shoko Matsushita, *School of Medicine, Hamamatsu University*

“Volatile p-nitroaniline as Matrix for High Spatial Resolution Imaging of Phospholipids in Both Ion Modes by AP-MALDI-IMS”

## KSM, Korean Society of Microscopy

Yinsheng He, *School of Nano & Advanced Materials Engineering*

“Microstructural Evolution of SS304 upon Various Shot Peening Treatments”

Youngji Cho, *Korea Maritime and Ocean University*

“Morphology and Structure Analysis of Graphene by Low Voltage TEM”

The Microanalysis Society is pleased to hold the **Sixth Meeting of the International Union of Microbeam Analysis Societies (IUMAS)** in conjunction with **Microscopy & Microanalysis 2014**. All M&M 2014 attendees are encouraged to arrive a couple of days early to participate in the exciting scientific program and social activities of IUMAS-6!

## IUMAS HALF-DAY WORKSHOPS

**SATURDAY, AUGUST 2, 2014**

**Connecticut Convention Center, Rooms 12-17**

These workshops are designed to be highly interactive, with substantial exchange among the participants under the moderation of the conveners. IUMAS delegates will attend two half-day workshops, one in the morning and the other in the afternoon.

**8:30 AM – 12 PM**

### Advanced Electron Probe Microanalysis

*Paul K. Carpenter, Washington University in St. Louis, USA*  
*Silvia Richter, Aachen University, Germany*

### Atom Probe Tomography

*Thomas F. Kelly, Cameca Instruments, USA*  
*François Vurpillot, Université de Rouen, France*

### Electron Backscatter Diffraction

*Joseph R. Michael, Sandia National Laboratories, USA*

### Electron and X-ray Spectroscopies in the TEM/STEM

*Nestor J. Zaluzec, Argonne National Laboratory, USA*

### He/Ne Ion Microscopy and Microanalysis

*David C. Joy, University of Tennessee and Oak Ridge National Laboratory, USA*

### Quantitative X-ray Microanalysis by XEDS

*Dale E. Newbury, National Institute of Standards and Technology, USA*

**1:30 PM – 5 PM**

### Trace Element Microanalysis by Laser Ablation ICP-MS

*Alan Koenig, U.S. Geological Survey, USA*

### Focused Ion Beam Microscopy and Microanalysis

*Lucille A. Giannuzzi, L.A. Giannuzzi and Associates, USA*  
*Keana Scott, National Institute of Standards and Technology, USA*

### Microanalysis in the Variable Pressure SEM

*Brendan J. Griffin, The University of Western Australia*

### Quantitative X-ray Microanalysis by XEDS

*Dale E. Newbury, National Institute of Standards and Technology, USA*

### Scanning Probe Microscopy

*Phillip E. Russell, Appalachian State University, USA*

### Spectral Imaging and Analysis

*Nicholas C. Wilson, CSIRO-Minerals, Australia*  
*Paul G. Kotula, Sandia National Laboratories, USA*

### X-ray Spectral Processing and Simulation

*Nicholas W. M. Ritchie, National Institute of Standards and Technology, USA*  
*Xavier Llovet, Universitat de Barcelona, Spain*

## SUNDAY KEYNOTE PRESENTATION

**8:45 AM**

**Connecticut Convention Center, Room 15-16-17**

### *My Lab is on Mars: Geochemical Adventures with the Mars Curiosity Rover*

**Professor Laurie A. Leshin**  
**Office of the President,**  
**Worcester Polytechnic Institute, USA**



Professor Laurie Leshin is a leader in the field of cosmochemistry, with primary research interests in deciphering the record of water in objects within our solar system. Prior to her appointment as President of WPI, Prof. Leshin served as the Dean of the School of Science at Rensselaer Polytechnic Institute and the Deputy Director for Science and Technology at the NASA Goddard Space Flight Center. She is an active member of NASA's current mission, the Mars Science Laboratory. In her talk, she will share her unique perspective regarding the findings of the Mars Curiosity Rover.

## IUMAS PLENARY SESSION

**SUNDAY, AUGUST 3, 2014**

**Connecticut Convention Center – Room 15-16-17**

- 10:30 AM** **Multi-spectral Electron Microprobe- Now and Future**  
*Colin M. MacRae, CSIRO-Minerals, Australia*
- 11:10 AM** **Advances in Acquisition of Hyperspectral Images**  
*Paul G. Kotula, Sandia National Laboratories, USA*
- 11:50 AM** **Atomic Resolution X-ray Analysis in Aberration-Corrected Scanning Transmission Electron Microscopes: Current Limits and Challenges toward Quantification**  
*Masashi Watanabe, Lehigh University, USA*
- 1:30 PM** **H.G.J. Moseley; The Scientist Who Put the Z in ZAF (and kab)**  
*David Williams, The Ohio State University, USA*
- 1:50 PM** **Impacts of Atom Probe Tomography on the Electronic and Photonic Device Technology**  
*Chan-Gyung Park, Pohang University of Science and Technology, Korea*
- 2:30 PM** **Robert E Ogilvie: Inventor, MAS Founder, and Educator**  
*Joseph Goldstein, University of Massachusetts, USA*
- 2:50 PM** **Advances in Electron Energy-Loss Spectroscopy with High Spatial and Energy Resolution**  
*Gianluigi Botton, McMaster University, Canada*
- 4:00 PM** **Mass Spectrometry of Surfaces Using Ion Beam: Molecular Mapping of (Bio)Polymers**  
*Birgit Hagenhoff, tascon GmbH, Germany*
- 4:40 PM** **Elemental Analysis of Cells & Tissues**  
*Peta L. Clode, The University of Western Australia*