

Program

Monday 6 February

8:00am	Registration Level 5, Science and Engineering Centre (P Block), QUT Gardens Point
8:30am - 5:00pm	Workshops

Tuesday 7 February

8:00am	Registration Level 5, Science and Engineering Centre (P Block), QUT Gardens Point
8:30am - 5:00pm	Workshops
5:30pm - 7:30pm	Welcome Reception The Cube, Science and Engineering Centre (P Block Foyer), QUT Gardens Point Proudly Sponsored by: Thomson Scientific Instruments Pty Ltd




Wednesday 8 February

8:00am	Registration Level 5, Science and Engineering Centre (P Block), QUT Gardens Point
8:30am - 9:30am	Conference Opening Plenary Official Opening and Welcome by Conference Hosts Room: P514
	Keynote Speaker Ed Vicenzi , <i>Smithsonian Institution</i> Rock varnish on architectural stone: microscopy and analysis of nanoscale manganese oxide deposits on the Smithsonian Castle, Washington, DC
9:30am - 10:00am	Session 1 – Advances in techniques and instrumentation I Room: P514 Chair: Ric Wuhrer
	1.1 - Microcalorimetry for X-ray spectrometry - Automatic data analysis from multi detectors S Thurgate (1), T Jach (2), J Ullom (3) and R Cantor (4) (1) Murdoch University, Australia; (2) National Institute of Standards and Technology, USA; (3) National Institute of Standards and Technology, USA; (4) Star Cryoelectronics, USA
	1.2 - Laser Induced Breakdown Spectroscopy (LIBS) & Laser Ablation (LA) – A Powerful Tool for Spatially-Selective Chemical Analysis C. Derrick Quarles, Jr. <i>Applied Spectra, Inc., USA</i>
10:00am - 10:30am	Presidential Exchange Mike Matthews , President of the European Microbeam Analysis Society (EMAS, AWE, UK) Effects of Oxidised Surfaces on Micro-Analysis Room: P514
10:30am - 11:00am	Morning Tea Level 5, P Block Proudly Sponsored by: Analytical Solutions Australia
11:00am - 11:45am	1.3 - Implications of low energy EDS analysis and light element detection Colin Veitch, Mark Greaves and Malisja de Vries <i>CSIRO Manufacturing, Australia</i>
	1.4 - Cathodoluminescence and Soft X-Ray Spectroscopy at LN Temperatures C.M. MacRae, N.C. Wilson and A. Torpy <i>CSIRO Mineral Resources Flagship, Australia</i>
	1.5 - Extended energy-range EDS for TEM Patrick P. Camus and Oleg Lourie <i>EDAX Inc., USA</i>



11:45am - 12:30pm	Keynote Speaker Andy McConnell , <i>Glass etc., Antiques and High Class Junk</i> 5000 Years of Glass in 45 Minutes Room: P514
12:30pm - 1:30pm	Lunch Level 5, P Block Proudly Sponsored by: AMMRF  AMAS Annual Executive Meeting Room: P506, Level 5, P Block
1:30pm - 2:00pm	Invited Speaker Raynald Gauvin , <i>McGill University, Canada</i> Characterization of Nano-Materials at High Spatial Resolution in the Electron Microscope, The Future is for Low Voltage STEM? Room: P514
2:00pm - 3:00pm	Session 2 – Advances in techniques and instrumentation II Room: P514 Chair: Angus Netting 2.1 - Replacing the Gas Flow Proportional Counter (GFPC) in a Wavelength Dispersive Spectrometer (WDS) with an Amptek Silicon Drift Detector (SDD) Ken Moran (1) and Richard Wuhrer (2) (1) Moran Scientific Pty. Ltd, Australia; (2) Western Sydney University, Australia 2.2 - Optimising FIB applications: from what can be done to how to do it better Charlie Kong, Soshan Cheong, Sean Lim, Yin Yao, Qiang Zhu and Richard Tilley UNSW Sydney, Australia 2.3 - Using Dual Beam Microscopy to Investigate Bacterial Cell Death on Nanotextured Surfaces of a Dragonfly Wing Annalena Wolff (1), Chaturanga Bandara (1), Sanjleena Singh (1), Isaac Afara (1), Tuquabo Tesfamichel (1), Kostya (Ken) Ostrikov (1) and Adekunle Oloyede (1,2) (1) Queensland University of Technology (QUT), Australia; (2) Elizade University, Nigeria 2.4 - An introduction to the gas field ion source (GFIS) and the FIB applications it enables John Notte Carl Zeiss Microscopy, USA
3:00pm - 3:30pm	Afternoon Tea Level 5, P Block Proudly Sponsored by: Analytical Solutions Australia 
3:30pm - 4:00pm	Invited Speaker Nestor Zaluzec , <i>Argonne National Laboratory, USA</i> Microanalysis during In-situ, Operando Environmental Cell Studies in the Analytical Scanning/Transmission Electron Microscope. Room: P514
4:00pm - 5:00pm	2.5 - New facility design: Resolving issues with EMI, mechanical vibration, acoustic noise as well as other issues that arise from a new building Richard Wuhrer (1), Timothy Murphy (1), Matthew Stead (2), Laurel George (1), Mitchell Nancarrow (3), Azdiar A.Gazder (3) and Ken Moran (4) (1) Western Sydney University, Australia; (2) Resonate Consultants, Australia; (3) University of Wollongong, Australia; (4) Moran Scientific Pty. Ltd, Australia 2.6 - Current experience in laboratory vibration design for micro to nano facilities Matthew Stead and Tom Evans Resonate Consultants, Australia 2.7 - Hardening up: Metal acquisition in the ovipositors of aculeates Kate Baumann (1), Thomas Lam (2), Edward P. Vicenzi (2), Janet G. Douglas (2), Bronwen Cribb (1), Bryan Fry (1), Seán G. Brady (2) (1) The University of Queensland, Australia; (2) Smithsonian Institution, USA 2.8 - Advancement of μ-XRF to enable detailed mineralogical characterization Gloy, G (1), Menzies, A.H (2), Scheller, S (3), Tagle, R (3), Patschke, M (3) (1) Bruker Pty Ltd., Australia; (2) Universidad Católica del Norte, Chile; (3) Bruker Nano GmbH, Germany
5.30pm - 7:30pm	Drinks & Pizza Night Botanic Bar, Science and Engineering Centre (P Block) QUT Gardens Point Proudly Sponsored by Nanospec 

Thursday 9 February


8:00am	Registration Level 5, Science and Engineering Centre (P Block), QUT Gardens Point	
8:25am - 9:15am	Conference Plenary Room: P514	
	Keynote Speaker Silke Christiansen , <i>Freie Universität Berlin, Germany</i>	
9:15am - 10:30am	Session 3 – Nanomaterials and surface analysis Room: P514	
	Chair: Nestor Zaluzec	
	3.1 - Fabrication of mesoporous nickel cobalt oxide nanosheet arrays on flexible carbon cloth for supercapacitor applications Teng Wang, John Bell and Hongxia Wang <i>Queensland University of Technology, Australia</i>	
	3.2 - STEM, Chemical Analysis and Atomic Resolution combined with Surface Imaging at ≤ 30 kV E. Voelkl, T. Sunaoshi, K. Kaji and Ian Cotton <i>Hitachi High Technologies</i>	
	3.3 - Low kV analysis of an additively manufactured aluminium alloy (AlSi10Mg) Mark Greaves, Sri Lathabai, Colin Veitch and Malisja de Vries <i>CSIRO Manufacturing, Australia</i>	
	3.4 - Growth of graphene-like materials through on-surface reactions Maryam Abyazisani, Nunzio Motta, Josh Lipton-Duffin and Jennifer Macleod <i>Queensland University of Technology, Australia</i>	
9:15am - 10:30am	3.5 - Growth of Graphene on 3C-SiC Nanostructures by UHV Annealing Mojtaba Amjadipour (1), Jennifer MacLeod (1), Josh Lipton-Duffin (1), Francesca Iacopi (2), Jose Alarco (1) and Nunzio Motta (1) (1) <i>Queensland University of Technology, Australia</i> ; (2) <i>University of Technology Sydney, Australia</i>	
	Morning Tea Level 5, P Block	
10:30am - 11:00am	Invited Speaker John Notte , <i>Carl Zeiss Microscopy</i> Extending the Gas Field Ion Source beyond Helium - Challenges and New Opportunities Room: P514	
11:30am - 12:00pm	3.6 - Lithium Detection in the Electron Microscope R. Gauvin (1), N. Brodusch (1), H. Demers (1), F. Voizard (1) G. P. Demopoulos (1), M. L. Trudeau (2) and K. Zaghbi (2) (1) <i>McGill University, Canada</i> ; (2) <i>Institut de Recherche d'Hydro-Québec (IREQ)</i>	
	3.7 - Carbon is a Perfectly Good Coating Material ...Isn't It? Characterising Beam Induced Carbon Erosion M.B. Matthews (1,2), S.L. Kearns (2) and B. Buse (2) (1) <i>AWE, UK</i> ; (2) <i>University of Bristol, UK</i>	
12:00pm - 1:00pm	Lunch Level 5, P Block Proudly Sponsored by: Kenelec Scientific	 AMAS Annual General Meeting Room: P512, Level 5, P Block
1:00pm - 1:30pm	Invited Speaker Xavier Llovet , <i>University of Barcelona, Spain</i> Electron probe microanalysis of transition-metal compounds using L-lines Room: P514	
1:30pm - 2:00pm	Invited Speaker John Fournelle , <i>University of Wisconsin-Madison, USA</i> Experiments with low voltage FE-EPMA: toward achieving improved analytical spatial resolution Room: P514	



2:00pm - 2:30pm	Session 4 – Electron probe microanalysis Room: P514
	Chair: Ken Moran
	4.1 - The “EPMA – Method Development Tool”, a collection of maximum range wavelength scans of common standard materials Sandrin T. Feig <i>University of Tasmania, Australia</i>
	4.2 - Soft X-ray Mapping in a Microprobe N.C. Wilson, C.M. MacRae and A. Torpy <i>CSIRO Mineral Resources, Australia</i>
2:30pm - 3:00pm	Afternoon Tea Level 5, P Block
3:00pm - 3:30pm	Invited Speaker Paul Carpenter , <i>Washington University, USA</i> Advances in quantitative compositional stage mapping by EPMA and micro-XRF Room: P514
3:30pm - 4:30pm	4.3 - Characterisation of silico-ferrites of calcium and aluminium in sintered iron ore fines A. Torpy, C. M. MacRae, M. I. Pownceby, and N. C. Wilson <i>CSIRO Mineral Resources, Australia</i>
	4.4 - FE-SEM and FE-EPMA analysis of sub-micron phases using EDS and WDS Ron Rasch (1), Jeff Chen (1), Henrietta Cathey (2), Ying Yu (1) and Hui Diao (1) <i>(1) The University of Queensland, Australia; (2) Queensland University of Technology, Australia</i>
	4.5 - Electron probe microanalysis of complex natural sulphides using shared background measurements Karsten Goemann (1), John J. Donovan (2) <i>(1) University of Tasmania, Australia; (2) University of Oregon, USA</i>
	4.6 - Establishing additional correction for quantitative EPMA measurements in the system PbO-SiO₂ Maksym Shevchenko, Jeff Chen and Evgueni Jak <i>The University of Queensland, Australia</i>
4:30pm - 5:30pm	Electronic Poster Presentations & Refreshments The Cube, Science and Engineering Centre (P Block), QUT Gardens Point
7:00pm -11:00pm	Conference Dinner Customs House, 399 Queen Street, Brisbane Proudly Sponsored by: FEI



Friday 10 February

8:30am	Registration Level 5, Science and Engineering Centre (P Block), QUT Gardens Point
9:10am - 9:45am	Conference Plenary Room: P514 Presidential Exchange Masashi Watanabe , <i>President of the Microanalysis Society (MAS); Lehigh University, USA</i> Challenges of X-ray analysis in aberration-corrected scanning transmission electron microscopes for quantification and single-atom analysis
9:45am - 10:30am	Session 5 – Transmission electron microscopy Room: P514 Chair: Peter Miller 5.1 - Highly sensitive X-ray detection system for aberration-corrected 300 kV microscope realized with two large sized SDDs Y. Kondo, I. Ohnishi, K. Fukunaga, E. Okunishi, K. Miyatake, Y. Iwasawa, M. Morita, Y. Jimbo, T.Sasaki and H. Sawada <i>JEOL Ltd., Japan</i> 5.2 - Electron holography of high temperature superconductors Ruth Knibbe (1), Anne-Helene Puichaud (2), Sadegh Yazdi (3), Takeshi Kasama (3) and Stuart Wimbush (2) <i>(1) The University of Queensland, Australia; (2) Victoria University of Wellington, New Zealand; (3) Danish Technical University, Denmark</i> 5.3 - Low dose observation of pseudo atomic column elemental maps by 2D STEM moiré method for electron beam sensitive materials Yukihiro Kondo, Kei-ichi Fukunaga, Eiji Okunishi and Noriaki Endo <i>JEOL Ltd., Japan</i>
10:30am - 11:00am	Morning Tea Level 5, P Block
11:00am - 12:15pm	Session 6 – Laser and ion source mass spectrometry Room: P514 Chairs: Charlotte Allen and Leonid Danyushevsky 6.1 - The importance of laser microprobe optical path design in producing stable aerosol intensity during spot-mode laser ablation of minerals with low melting points Leonid Danyushevsky (1), Sarah Gilbert (2), Jay Thompson (1) and Paul Olin (1) <i>(1) University of Tasmania, Australia; (2) University of Adelaide, Australia</i> 6.2 - Effects of thermal annealing and chemical abrasion on the U-Pb isotopic systematics, and the microstructure of complex, metamict ~3.5 billion year old zircon: insights for U-Pb LA-ICP-MS dating Daniel Wiemer, Charlotte M. Allen, David T. Murphy, and Irina Kinaev <i>Queensland University of Technology, Australia</i> 6.3 - Laser ablation-inductively coupled plasma-mass spectrometry U-Th-Pb age uncertainties as a result of laser interaction with different accessory mineral matrices Lana Wenham, Charlotte M. Allen and David Murphy <i>Queensland University of Technology, Australia</i> 6.4 - FE-SEM and NanoSIMS analysis of fine-grained symplectites produced in hydrothermal experiments Liene Spruzeniece (1), Sandra Piazzolo (1), Nathan Daczko (1), Matthew R. Kilburn (2), Andrew Putnis (3,4) <i>(1) Macquarie University, Australia; (2) The University of Western Australia, Australia; (3) University of Münster, Germany; (4) Curtin University, Australia</i> 6.5 - Using LA-ICP-MS analysis of hair for environmental monitoring: a case study of a mining community Charlotte M. Allen (1), Karine Harumi Moromizato(1), Robbie Wilson (2), Gwendolyn David (2) and Andrew Hunter (2) <i>(1) Queensland University of Technology, Australia; (2) The University of Queensland, Australia.</i>
12:15pm - 1:30pm	Lunch Level 5, P Block Proudly Sponsored by: Coherent Scientific 
1:30pm - 2:00pm	Invited Speaker Pat Trimby , University of Sydney, Australia Micro and nano-structural analysis of deformed minerals: correlative microscopy across the scales Room: P514



2:00pm - 3:15pm	<p>Session 7 – Electron back-scatter diffraction Room: P514</p> <p>Chair: David Steele</p> <p>7.1 - How acquisition and specimen parameters effect the spatial resolution of transmission Kikuchi diffraction Glenn Sneddon, Patrick Trimby and Julie Cairney <i>University of Sydney, Australia</i></p> <p>7.2 - Characterisation of Impurity Phases in Zircon and the Implications for Physical Properties A. M. Glenn (1), M. I Pownceby (1), C. M. MacRae (1), A. Torpy(1), P. Dundas (2) and N. Bernard (2) <i>(1) CSIRO Mineral Resources, Australia; (2) Iluka Resources, Australia</i></p> <p>7.3 - Phase Discrimination methods using EBSD and a New Phase Training Approach Jenny Goulden (1), Hui Jiang (1), K.Thomsen (2), K. Mehnert (2) and <u>Julie Sheffield-Parker</u> (3) <i>(1) Oxford Instruments NanoAnalysis, United Kingdom; (2) ST Development ApS, Denmark; (3) Nanospec Pty Ltd, Australia</i></p> <p>7.4 - Data averaging tools for improved high speed EDS-EBSD mapping results René de Kloe (1), Stuart Wright (2) <i>(1) EDAX, The Netherlands; (2) EDAX Inc, USA</i></p> <p>7.5 - Scientific analysis of NPAR processing on EBSD results Patrick P. Camus, Stuart I. Wright, Matthew M. Nowell and <u>Oleg Lourie</u> <i>EDAX Inc., USA</i></p>
3:15pm	<p>Closing Remarks Ric Wuhrer, <i>AMAS President, Western Sydney University, Australia</i> Moran Scientific Student Award Room: P514</p>