



**19th International Microscopy Congress
9 - 14 September 2018
International Convention Centre, Sydney**

WEDNESDAY 12 SEPTEMBER 2018												
	Darling Harbour Theatre	Meeting Room C4.1	Meeting Room C4.2	Meeting Room C4.3	Meeting Room C4.4	Meeting Room C4.5	Meeting Room C4.6	Meeting Room C4.7	Meeting Room C4.8	Meeting Room C4.9	Meeting Room C4.10	Meeting Room C4.11
	IT-9.1 - STEM and TEM imaging	IT-2.2 - Computational methods for data acquisition, analysis and visualization	FI-2 - Data management (storage, processing and sharing)	IT-10.1 - SEM, FIB, scanning probe and surface microscopy	IT-13.1 - Spectroscopy – Low energy excitations and ultrafast spectroscopy	LS-10 - Plant Science & Mycology	PS-10.3 - Magnetic, ferroelectric and multiferroic materials	LS-13 - Invertebrate Biology & Taxonomy	PS-2.1 - Carbon-based materials and 2D structures	PS-13.4 - Physical science applications of in-situ microscopy	IT-3 – Methods and workflows for correlative microscopy	IT-14.2 – Advances in Atom Probe Tomography
	Chairpersons: Richard Leapman & Peter Nellist	Chairpersons: Steven Ludtke & Nigel Browning	Chairpersons: Wojtek Gosinski & Dieter Weber	Chairpersons: Raynald Gauvin	Chairpersons: Odile Stephan	Chairpersons: Rosemary White & Staffan Persson	Chairpersons: Rafal Dunin-Borkowski	Chairpersons: Andreas Holzenburg & Maria Byrne	Chairpersons: Ute Kaiser & Dougal McCulloch	Chairpersons: Ryo Ishikawa	Chairpersons: Fei Sun & Saskia Lippens	Chairpersons: David Larson & Leigh Stephenson
14:00	1209: Beyond the Diffraction Limit and below 0.4 Angstroms with a High Dynamic Range Pixel Array Detector Invited Speaker: Prof David Muller (Cornell University)	1967: Automatic registration for multidimensional correlative microscopies with error assessment and detections of deformations Invited Speaker: Ms Perrine Paul-Gilleteaux (University of Nantes, France)	1568: The Image Data Resource: a platform for publishing, integrating and mining biological imaging data at scale Petr Walczysko (Division of Computational Biology, University of Dundee, Dundee)	388: Analytical STEM at 30 keV, EDS, EELS and CBED at the Nanoscale Prof Raynald Gauvin (Department of Mining and Materials Engineering, McGill University)	1966: Time resolved cathodoluminescence spectroscopies Invited Speaker: Dr Sophie Meuret (AMOLF, The Netherlands)	1960: Characterisation of the regulation of directional growth in the invasive fungal pathogen, <i>Candida albicans</i> , using multiple microscopy approaches Invited Speaker: Dr Alexandra Brand (University of Aberdeen, UK)	200: Atomic mapping of domains and interfacial structures in ferroelectric thin films Prof Xiuliang Ma (Institute of Metal Research, Chinese Academy of Sciences)	1951: Large-scale phenotyping of invertebrate model and non-model organisms using digital non-invasive, three-dimensional imaging techniques Invited Speaker: Dr Alexander Ziegler (Institute of Evolutionary Biology and Ecology, Universität Bonn, Germany)	1988: Theory of momentum-resolved phonon scattering in the transmission electron microscope - application to 2D materials Invited Speaker: Dr Rebecca Nicholls (University of Oxford, UK)	789: In-situ Microscopy for Sub-10nm Materials Invited Speaker: Prof Litao Sun (Southeast University)	2024: Revealing Secrets Hiding in Plain Sight: Advances in Multi-scale Multi-modal Imaging Invited Speaker: Dr Mark Ellisman (Distinguished Professor of Neurosciences; Director, the National Center for Microscopy and Imaging Research (NCMIR), UCSD Senior Fellow, HHMI Janelia Research Campus)	1963: The Atom Probe as High-Speed Camera: Correlating Nanometer Composition with Nanosecond Material Dynamics Invited Speaker: Dr Austin Akey (Harvard University, USA)
14:15			1357: A national network of trusted data repositories for the Australian National Imaging Facility Dr Andrew Mehnert (Centre for Microscopy, Characterisation and Analysis, The University of Western Australia, Perth)	1097: Application of inverted fountain detector for downward secondary electron emitted from nanosheets in SEM Prof Takashi Sekiguchi (University of Tsukuba, National Institute for Materials Science (NIMS))		294: Observation of ferroelectric polarization in hybrid improper ferroelectric (Ca, Sr)TiO ₇ Dr Hiroshi Nakajima (Kyushu University)						
14:30	1560: Thick (3D) sample imaging using IDPC-STEM Dr Ivan Lazić (Thermo Fisher Scientific)	1990: Algorithms for real-time unsupervised cryo-EM structure determination Invited Speaker: Dr Hans Emlund (Monash University)	1078: Using Fiji / Image J to automate analysis of slide scanner generated files Dr Michael Kuligowski (Australian Centre for Microscopy and Microanalysis, University of Sydney)	1368: Cluster analysis for FIB tomography of nanoporous materials Dr Martin Ritter (Hamburg University of Technology)	1444: Visualization of surface plasmon propagation in a crystal waveguide by momentum-resolved cathodoluminescence spectroscopy Dr Hikaru Saito (Kyushu University)	929: Identification of the Icelandic accession of <i>Arabidopsis thaliana</i> Prof Kesara Ananthawat-Jonsson (University of Iceland, Reykjavik)	940: Advanced electron microscopy and spectroscopy on ferroelectric thin films Prof Peng Gao (School of Physics, Peking University)	1190: Analysis of nudibranch microstructures using ultrathin cryomicrotome sectioning and Mass Spectrometry Imaging allows spatial distribution of molecular species to be determined at nanometer resolution Dr Brett Hamilton (Centre for Microscopy and Microanalysis, The University of Queensland, Pathology Department, Mater Health Services)	97: Interaction between 2D transition metal dichalcogenides and metal atoms for use in electrical contacting, investigated via atomic resolution HAADF Scanning Transition Electron Microscopy Ms Eileen Courtney (TEMUL, Department of Physics, School of Natural Sciences & Bernal Institute, University of Limerick, Limerick, Ireland)	834: Industrial approach to in-situ electron microscopy of heterogeneous catalysts Dr Manfred Schuster (Johnson Matthey Technology Centre, Blount's Court, Reading, RG4 9NH)	1972: Screening ultrastructural phenotypes by automated correlative light and FIB-SEM. Invited Speaker: Dr Yannick Schwab (EMBL Heidelberg, Germany)	1978: Application of Atom Probe Tomography in wide band gap technology Invited Speaker: A/Prof Baishakhi Mazumder (University of Buffalo, USA)
14:45	1498: Atomic resolution STEM image contrast based on local point symmetry Dr Matus Krajnak (Department of Materials Engineering, Monash University)	984: LiberTEM: An open software platform for pixelated scanning transmission electron microscopy Dr Dieter Weber (Forschungszentrum Jülich)	984: LiberTEM: An open software platform for pixelated scanning transmission electron microscopy Dr Dieter Weber (Forschungszentrum Jülich)	223: High-frequency noise artefacts in scanning microscopy – Identification and mitigation Dr Asmus Meyer-Plath (Federal Institute for Occupational Safety and Health)	1021: Probing Resonant Photonic Modes in Oxide Nanoparticles with Focused Electron Beams Prof Peter Crozier (Arizona State University)	1376: Visualisation of polar nano-regions and chemical composition fluctuations in BaTiO ₃ and (Ba, Sr)TiO ₃ ceramics above Curie temperature Prof Goran Drazic (National Institute of Chemistry, Ljubljana, Slovenia)	785: Understanding impacts of environmental changes and anthropogenic activities on marine organisms Invited Speaker: Dr Peter Christian Fankhauser (University of Lausanne, Switzerland)	1413: One-Dimensional Hexagonal Boron Nitride Semiconductor Miss Hyeon Park (UNIST (Ulsan National Institute of Science and Technology))	599: Cryogenic analytical electron microscopy for native state imaging of nanomaterials Dr Nicole Hondow (University of Leeds)			
15:00	1288: Electron tomography of cadherin-mediated progenitor cell-cell junctions Dr Walter Kaufmann (Institute of Science and Technology-Austria, Klosterneuburg)	281: MIB 2: an updated version of the open-source platform for segmentation and analysis of multidimensional datasets Dr Ilya Belevich (University of Helsinki)	958: Meeting the next-generation instrument data challenge with MyTardis Dr Amr Hassan (eResearch Delivery Leader, Monash University)	305: Optimisation of scattered electron imaging in the scanning electron microscope Dr Ben Britton (Imperial College London)	827: Momentum resolved spectroscopy of the dielectric response by TEM Dr Frederic Fossard (LEM, Laboratoire d'Etude des Microstructures, ONERA/CNRS)	517: Dopant distribution and Jahn-Teller distortions at superconducting La ₂ CuO ₄ interfaces Mr Y. Eren Suyolcu (Max Planck Institute for Solid State Research)	785: Understanding impacts of environmental changes and anthropogenic activities on marine organisms Invited Speaker: Dr Peter Christian Fankhauser (University of Lausanne, Switzerland)	1998: Single-Atom Level Chemical and Electronic Structure Engineering in Low Dimensional Materials Invited Speaker: Prof Quentin Ramasse (University of Leeds, UK)	656: Direct observation of oxygen vacancy-driven structural and resistive phase transitions in La ₂ /Sr ₁ /MnO ₃ Dr Lide Yao (NanoSpin, Department of Applied Physics, Aalto University School of Science)	1955: Three-dimensional super-resolution protein localization correlated with vitrified cellular context Invited Speaker: Mr Wei Ji (CAS, China)	1044: Cross-correlative Microscopy to Understand Nanocrystalline Stability Dr Xuyang Zhou (The University of Alabama)	
15:15	1155: Aberration corrected STEM for interfacial strain and vacancy characterization Prof Jian-Min Zuo (University of Illinois at Urbana-Champaign)	335: Image restoration from single scanning transmission electron micrograph using deep convolutional neural networks Dr Ivan Lobato (EMAT, Antwerp University)	1591: Solutions for the analysis of large microscopy multi-dimensional datasets in HyperSpy. Invited Speaker: Dr Francisco de la Peña (University of Lille, France)	728: Ultra High Precision, High Resolution and Large Area SEM using Raith E-line Plus Dr Han-Hao (elliot) Cheng (Centre for Microscopy and Microanalysis, The University of Queensland)	1496: Optoelectronic measurements on atomically thin Mo ₂ W(1-x)S ₂ nanoflakes Dr Raul Arenal (Universidad de Zaragoza)	718: Phi thickenings in Brassica roots - an adaptation to water stress? Dr David Collings (University of Newcastle)	193: Biaxial tensile stress effect within epitaxial BiFeO ₃ film grown on (100) KTaO ₃ Dr In-Tae Bae (State University of New York at Binghamton)	1053: Neurodegenerative modifications during perinatal asphyxia: correlative light and electron microscopy study. Francisco Capani (Instituto de Investigaciones Cardiovasculares (ININCA) UBA-CONICET)	553: Electron Radiolysis Effect for in-situ Electron Microscopy: Super-Dissolution and Direct Writing Transformation of Metal Oxides Prof Manliang Sui (Institute of Microstructure and Property of Advanced Materials, Beijing University of Technology)	1459: Superconducting Delay Line Detector for Time of Flight Spectrometry and Atom Probe Tomography Dr Thomas Kelly (CAMECA Instruments, Inc.)		
15:30	1476: Striving for precise metrology with the modern STEM Invited Speaker: Dr Lewys Jones (Advanced Microscopy Laboratory (CRANN), School of Physics, Trinity College Dublin)	373: Automated Imaging and Analysis of Pharmaceutical Particles Using a Tabletop Low Voltage TEM Dr Mathieu Colomb-Delsuc (Vironova AB, Stockholm)	795: Assessing the use of CMOS technology in EBSD detectors and its impact on analysis speed and precision Dr Pat Trimby (Oxford Instruments Nanoanalysis)	1627: Attosecond electron microscopy and diffraction Invited Speaker: Prof Peter Baum (University of Konstanz, Max-Planck-Institute of Quantum Optics)	1935: Specialised receptor signalling in plasmodesmal membranes Invited Speaker: Dr Christine Faulkner (John Innes Centre, UK)	2016: Probing the Atomic Lattice Response of Quantum Materials Across Phase Transitions Invited Speaker: A/Prof Lena F. Kourkoutis (Cornell University, USA)	643: Atomic resolution electron microscopy and spectroscopy of ion implanted dopants in two-dimensional materials Mr Eoghan O'Connell (TEMUL, Dept. of Physics, School of Sciences and Bernal Institute, University of Limerick)	667: Electron beam effects on metal and semiconductor oxide films - structure and electrical properties Dr Christian Kübel (Karlsruhe Institute of Technology (KIT))	917: Correlative microscopy combining Electron Microscopy and Secondary Ion Mass Spectrometry Dr Santhana Eswara (Luxembourg Institute of Science and Technology)	821: Tracing hydrogen in APT : Development of new in-situ approaches Dr Daniel Haley (Dept. of Materials, University of Oxford)		
15:45		1165: A new algorithm for segmenting single adult cardiac cells from large volume serial block-face scanning electron microscopy data Dr Vijay Rajagopal (University of Melbourne)	1873: Engineering Innovation Throughout Life and Across Cultures - Advancing STEAM Outreach Through Indigenous Paradigms, Industry Engagement, and Microscopy Aided Design And Manufacture (MADAME) Prof Melissa Knothe Tate (University of New South Wales)	352: Improved throughput of gold nanoparticle localization and imaging in the brain through the development of a novel SEM-STEM technique Dr Paul Kempen (Center for Nanomedicine and Theranostics, Department of Micro- and Nanotechnology, Technical University of Denmark)		1882: Direct Observation of Hydrogen at Grain Boundaries in Multicrystalline Silicon Mr David Tweedie (University of Oxford)	446: Evidence of strain-induced plastic flow in the formation of phase-pure hexagonal diamond Mr Sherman Wong (School of Science, RMIT University, Melbourne)	118: Atomic-scale observation of oxidation and decomposition processes in nanocrystalline alloys via in-situ heating Mr Jinming Guo (Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Leoben 8700)	504: A Hybrid Environmental Transmission Electron Microscope for Probing Plasmons and Excitons Dr Renu Sharma (Center for Nanoscale Science and Technology, National Institute of Standards and Technology, Gaithersburg)	1305: Direct observations of stable hydrides to solute hydrogen in metals using atom probe tomography Dr Andrew Breen (Max Planck Institute for Iron Research (MPIE))		
16:00	Afternoon Tea, Exhibition, Poster Viewing & Mini Oral Presentations <i>Exhibition Hall 2</i>											
16:30 - 18:00	Dedicated Poster Viewing, Mini Oral Presentations & Drinks <i>Exhibition Hall 2</i>											

THURSDAY 13 SEPTEMBER 2018

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Registration Open Outside Exhibition Hall 2 & Ground Level Foyer, International Convention Centre											
Plenary Speaker Darling Harbour Theatre Dr Misty Jenkins Understanding Serial Killers: Investigating the function of Cytotoxic T lymphocytes using microscopy											
Morning Tea, Exhibition and Poster Viewing Exhibition Hall 2											
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PS-13.3 - Physical science applications of in-situ microscopy	IT-10.2 - SEM, FIB, scanning probe and surface microscopy	PS-3.1 - Thin films, coatings and surfaces	IT-11 - Optical Nanoscopy and Spectral Imaging Techniques	IT-9.2 - STEM and TEM imaging	LS-9.1 - Applications in Correlative Microscopy of Biological Systems	PS-6.1 - Biomaterials, polymers and polymer-based composites	PS-8.1 - Phase transformations and corrosion	PS-2.2 - Carbon-based materials and 2D structures	LS-14.1 - Host-Pathogen Interactions, Microbiology & Virology	IT-13.2 - Spectroscopy - Low energy excitations and ultrafast spectroscopy	PS-9.1 - Amorphous and disordered materials, liquid crystals
Chairpersons: Zbin Chen	Chairpersons: Tomonobu Nakayama	Chairpersons: Xuiliang Ma & Zonghan Xie	Chairperson: Colin Sheppard	Chairpersons: Richard Leapman & Peter Nellist	Chairperson: Yannick Schwab & Roger Wepf	Chairpersons: Cheng Yan & Yogambha Ramaswamy	Chairperson: James Howe & Jianqiang Zhang	Chairpersons: Ute Kaiser & Dougal McCulloch	Chairpersons: Melanie Rug & Salvatore Chiantia	Chairpersons: Odile Stephan	Chairpersons: Paul Voyles & Amelia Liu
1914: Using Sub-Sampling/Inpainting to Control the Kinetics and Observation Efficiency of Dynamic Processes in Liquids Invited Speaker: Prof Nigel Browning (University of Liverpool, UK)	1956: High-speed AFM and the Essential Role of Water Molecules Invited Speaker: Prof Mervyn Miles (University of Bristol, UK)	1965: Recent advances in FIB-SEM techniques for elemental, strain, stress and defect analyses combined with micro-mechanical testing Invited Speaker: Prof Xavier Maeder (EMPA, Switzerland)	2021: Imaging Techniques to Measure Spatio-temporal dynamics and Metabolic Alterations of p53 upon DNA Damage Invited Speaker: A/Prof Michelle Digman (University of California, USA)	1920: Maximising dose efficiency in quantitative STEM to reveal the 3D atomic structure of nanomaterials Invited Speaker: Ms Sandra Van Aert (University of Antwerp, Europe)	1936: Understanding ciliary assembly and transport with CLEM and Cryo-EM Invited Speaker: Dr Gaia Pigo (Max Planck Institute of Molecular Cell Biology & Genetics, Germany)	2026: New Micro- and Nanostructured Biomaterial Surfaces based on Colloidal Crystals Invited Speaker: Peter Kingshott (Professor and Research Director, Department of Chemistry and Biotechnology, Head, Polymer Nanointerface Engineering Group, Swinburne University of Technology)	989: Microstructural Analysis of the Preferential Intergranular Oxidation Behavior of Alloy 600 in H ₂ -Steam Environment Mr Liberato Volpe (The University of Manchester)	1937: Interplay of strain and lattice structure in novel 2D semiconductors Invited Speaker: Prof Wu Zhou (University of Chinese Academy of Sciences, China)	2000: Exploring the possi-pili-fies: using microscopy to better understand the interaction of pathogenic and commensal Neisseria species with the human host and with each other Invited Speaker: Dr Errin Johnson (University of Oxford, UK)	1720: Coherent Ultrafast Transmission Electron Microscopy: Development and Applications Invited Speaker: Mr Armin Feist (Georg-August-Universität Göttingen, Germany)	267: Correlative analytical transmission electron microscopy applied to the characterization of deformation features in amorphous materials Invited Speaker: Dr Harald Rösner (University of Münster, Germany)
1919: Atomic-resolution dynamic STEM observations for single atom tracking Invited Speaker: A/Prof Ryo Ishikawa (University of Tokyo, Japan)	809: Combined high-resolution FIB-Nanotomography and 3D-EDS of solid-oxide electrolysis cells Dr Marco Cantoni (CIME/EPFL)	218: Hardness and toughness enhancement of nanotwinned high entropy alloy FeMnNiCoCr coatings deposited by closed field unbalanced magnetron sputtering Ms Chuhan Sha (School of Materials Science and Engineering, UNSW, Sydney)	2019: Mapping the spatial rules of early TCR signalling: from multiplexed DNA PAINT single molecule imaging to statistical inference Prof James Halstead (UNSW)	705: Overcoming the chromatic aberration resolution limit by monochromatation Dr Andrew L. Bloch (Nion R&D)	1586: Assessing the Autophagy Machinery and Cargo using Correlative Light and Electron Microscopy A/Prof Ben Loos (Stellenbosch University)	1427: Correlated in situ ETEM and Multiscale Computational Study of Dynamic Processes Characterizing the Initial Stage of Copper Oxidation Prof Judy Yang (University of Pittsburgh)	81: Investigation of the Wagonwheel Effect in Graphene via atomic resolution HAADF and EELS Mr Kalani Moore (University of Limerick)	1470: Quantitative microscopy approaches for the study of the interactions between Influenza matrix protein and host plasma membrane Dr Salvatore Chiantia (University of Potsdam)	1171: Hybridization of Surface Plasmon Resonance Modes in Sierpinski Fractal Triangles Ms Isobel C. Bicket (McMaster University)	1362: Quantitative mapping of the nanoscale strain field in metallic glasses during in situ deformation Dr Christoph Gammer (Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Leoben)	
581: Visualized effects of oxidation and temperature on pseudo-single-domain Fe ₃ O ₄ particles examined by environmental TEM and off-axis electron holography Dr Trevor Almeida (University of Glasgow)	1813: Submolecular resolution imaging with Si cantilever-based atomic force microscopy Invited Speaker: Dr Tomoko Shimizu (Keio University, Japan)	74: STEM-based direct observation of dislocation-pipe diffusion in metal/semiconductor nitride superlattice thin films Dr Magnus Garbrecht (Thin Film Physics Division, Linköping University)	745: Spatiotemporal Mapping of DNA Double Strand Break Repair Using Super Resolution Microscopy Dr Donna Whelan (La Trobe University)	466: Advantage of Co/Cs corrected LV-TEM for organic molecular imaging Dr Kaname Yoshida (Japan Fine Ceramics Center)	1401: Characterization of metastasis related lysosomal subpopulations by correlative live cell-3D electron microscopy Dr Nalan Liv (UMC Utrecht)	1175: In-situ TEM observation of oxidation and radiation damage Mr Yang Yang (MIT)	1458: Atomic Defects in Graphene and their Role in Proton Transport and Water Desalination Dr Raymond Uonic (Oak Ridge National Laboratory, Center for Nanophase Materials Science)	1232: HIV and The Colobrectal Mucosa - Investigating the Early Interactions of HIV with Mucosal Target Cells using Highly Multiplexed Microscopy Mr Heeva Baharou (The Westmead Institute for medical research)	630: Plasmon field tomography of coupled metallic nanoparticles Dr Georg Haberfehlner (Graz Centre for Electron Microscopy)	936: Medium-range order of amorphous Cu ₂ Zr-crystalline Cu composites studied by correlated HAADF and nano-beam diffraction Dr Martin Peterlechner (Institute of Materials Physics, WWU Muenster)	
1027: Realistic electrochemistry in liquid cell microscopy Dr Daan Hein Aisem (Hummingbird Scientific)	109: Investigation of dislocations by STEM in a scanning electron microscope Miss Cheng Sun (Karlsruhe Institute of Technology, Laboratory for Electron Microscopy)	781: Inhomogeneous Strain Distribution in Epitaxial SiGe/Si Multilayers Visualized by Dark-field In-line Electron Holography Dr Bumsu Park (Department of Energy Science, Sungkyunkwan University)	715: Live quantitative BSE acquisition with standard-less calibration Dr Grigore Moldovan (Point Electronic GmbH)	333: Downsampling of STEM images: a study on the effect of electron dose reduction on the quality of 3D reconstructions Dr Sylvain Trepout (University Paris Saclay, INSERM U1196, Institut Curie, Centre Universitaire)	489: Correlative Strategies for the Identification and Intracellular Localization of Polymer Nanoparticles Dr Ingo Lieberwirth (Max-Planck Institute for Polymer Research)	392: SEM, TEM, STEM and AFM microscopy of the human tooth enamel crystallites Prof José Reyes-Gasca (Instituto de Física, UNAM)	1501: Functionalization of carbon nanotubes investigated by spatial-resolved EELS Dr Raul Arenal (Universidad de Zaragoza)	651: Investigating the role of the different NS3 functional domains in the AHSV infection cycle in mammalian cells. Mrs Linda Ferreira-Venter (University of Pretoria)	912: Ultrafast Electron Spectroscopy with Slow and Fast Electrons Invited Speaker: Dr Nahid Talebi (Max-Planck Institut, Germany)	422: Correlating Structural Heterogeneity to Deformation of Metallic Glasses Using 4-D Scanning Nanodiffraction and Mesoscale Simulation Invited Speaker: Prof Jinwoo Hwang (Ohio State University, USA)	
229: Wet Etch Dynamics of Silicon Nanopillars Visualized in the TEM Dr Zainul Aabdin (Institute of Materials Research and Engineering, Agency for Science, Technology and Research Centre for Biomaging Sciences and Department of Biological Sciences, National University of Singapore, Department of Physics, National University of Singapore)	253: In-situ E-TEM study of bimetallicTiO ₂ supported copper-gold nanocatalysts under oxidizing (O ₂) and reducing (H ₂) atmosphere Mr Adrian Chmielewski (Université Paris Diderot)	1303: Application and prospect of electron-beam-induced current technique: from defect characterization to device diagnosis Invited Speaker: Dr Jun Chen (National Institute for Materials Science (NIMS), Japan)	1947: Mechanical properties and surface forces of nanostructures Invited Speaker: Prof Han Huang (The University of Queensland, Australia)	1189: Comparison of Spectral Imaging Modalities and Quantitative Data Analysis Techniques Dr Tala Kapilnovsky (Australian Centre for Microscopy and Microanalysis)	1976: Correlative light and electron microscopy studies of self-assembling peptide cages (SAGEs) Invited Speaker: Dr Lorna Hodgson (University of Bristol, UK)	1976: Correlative light and electron microscopy studies of self-assembling peptide cages (SAGEs) Invited Speaker: Professor Dietmar Huttmacher (Queensland University of Technology, Australia)	1278: Interface chemistry and transport in alumina using TEM and APT Invited Speaker: Prof Krystyna Stiller (Chalmers University of Technology, Sweden)	1220: Understanding atom-by-atom the dynamics and the properties for the evolution of point and extended defects in single-layer 2H-MoTe ₂ by Co/Cs-corrected 40 kV high-resolution TEM Mr Tibor Lehner (Electron Microscopy Group of Materials Science, University of Ulm)	314: Application of FIB-SEM tomography, serial sectioning TEM and STEM tomography gives insight into herpesvirus egress dynamics and the process of secondary envelopment Dr Clarissa Villinger (Central Facility for Electron Microscopy, Ulm University, Institute of Virology, University Medical Center Ulm)	985: Structural properties of Double Wall Carbon Nanotubes as revealed by TEM Dr Loiseau Annick (LEM, Laboratoire d'Etude des Microstructures, ONERA/CNRS)	1703: Tracking bundling of influenza A virus genome segments in infected host cells at single molecule level Prof Dr Andreas Herrmann (Molecular Biophysics, Department for Biology, IRI Life Sciences, Humboldt-Universität zu Berlin, Berlin)
Lunch, Lunch Workshops, Exhibition, Poster Viewing & Mini Oral Presentations Exhibition Hall 2			Effective colour-enhancement strategies for EM images Dr Jenny Whiting (Microscopy Australia)	1938: Momentum-resolved STEM measurement of atomic electric fields, charge densities, polarisations and chemical composition Invited Speaker: Dr Knut Mueller-Caspary (University of Antwerp, Europe)	1337: Splenic capture and in vivo subcellular degradation of thin, biological-grade graphene oxide sheets studied by correlative microscopy Dr Eric Prestat (Materials Performance Centre, University of Manchester)	813: Exploring biomineral chemistry at the nanometer scale Dr Marta De Frutos (Laboratoire de Physique des Solides, CNRS, Université de Paris-Sud)	985: Structural properties of Double Wall Carbon Nanotubes as revealed by TEM Dr Loiseau Annick (LEM, Laboratoire d'Etude des Microstructures, ONERA/CNRS)	1703: Tracking bundling of influenza A virus genome segments in infected host cells at single molecule level Prof Dr Andreas Herrmann (Molecular Biophysics, Department for Biology, IRI Life Sciences, Humboldt-Universität zu Berlin, Berlin)	Lunch, Lunch Workshops, Exhibition, Poster Viewing & Mini Oral Presentations Exhibition Hall 2		



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	LS-11 - Innovations in Light / Laser Microscopy and Optical Nanoscopy	IT-10.3 - SEM, FIB, scanning probe and surface microscopy	PS-3.2 - Thin films, coatings and surfaces	FI-3 - Facility management	IT-9.3 - STEM and TEM imaging	IT-13.3 - Spectroscopy – Low energy excitations and ultrafast spectroscopy	PS-6.2 - Biomaterials, polymers and polymer-based composites	PS-8.2 - Phase transformations and corrosion	PS-2.3 - Carbon-based materials and 2D structures	LS-14.2 - Host-Pathogen Interactions, Microbiology & Virology	LS-9.2 - Applications in Correlative Microscopy of Biological Systems	PS-9.2 - Amorphous and disordered materials, liquid crystals
	Chairpersons: Katharina Gaus & Jan Elenberg	Chairpersons: Alex de Marco	Chairpersons: Xuiliang Ma & Zonghan Xie	Chairpersons: Angus Netting & David Bell	Chairpersons: Lewys Jones	Chairpersons: Odile Stephan	Chairpersons: Cheng Yan & Yogambha Ramaswamy	Chairperson: James Howe & Jianqiang Zhang	Chairpersons: Ute Kaiser & Dougal McCulloch	Chairpersons: Melanie Rug & Salvatore Chiantia	Chairperson: Yannick Schwab & Roger Wepf	Chairpersons: Paul Voyles & Amelia Liu
14:00	1959: Decoding the Dynamic Endosomal Matrix Invited Speaker: Dr Senthil Arumugam (University of New South Wales, Australia)	1968: Chemical processing of surfaces by electron and ion beams Invited Speaker: Mr Milos Toth (University of Technology, Sydney, Australia)	453: Atomic-resolution electron microscopy for aluminum alloys as high-performance industry materials Invited Speaker: Prof Jianghua Chen (Hunan University, China)	287: Designing, Managing and Running a Multipurpose Advanced Materials Characterisation Facility Invited Speaker: Dr Richard Wulher (Western Sydney University, Australia)	1977: An automated pipeline for CryoET and high resolution subtomogram averaging Invited Speaker: Prof Steven Ludtke (Baylor College of Medicine, USA)	1964: Nanoscale Mapping and Interpretation of meV Phonon EELS Invited Speaker: Prof Philip Batson (Rutgers School of Engineering, USA)	344: Advanced amphiphilic nanobiomaterials for drug delivery: From design to preclinical evaluation Invited Speaker: A/Prof Alejandro Sosnik (Technion-Israel Institute of Technology)	1974: Mechanistic Understanding of Environment-Sensitive Behaviour of Materials Through Correlative Advanced Microstructural Analysis Invited Speaker: Prof Grace Burke (The University of Manchester, UK)	2022: Graphene substrates for quantitative electron energy loss spectroscopy of soft-hard interfaces Invited Speaker: A/Prof Pinshane Huang (Department of Materials Science and Engineering, University of Illinois)	2002: Correlative Light and Electron Microscopy: Parasites and Viruses Invited Speaker: Prof Bruno Humbel (Université de Lausanne, Switzerland)	2008: Explorations of the brain enabled by correlative array tomography Invited Speaker: Dr Kristina Micheva (Stanford University, USA)	1589: Hybrid reverse Monte Carlo modelling of disordered solids using electron microscopy Invited Speaker: Dr Timothy Petersen
14:15												
14:30	613: Optical Nanoscopy and Raman Spectroscopy Using an Integrated Photonic Chip Platform Mr David André Coucheron (UIT - The Arctic University of Norway)	460: Development of an Electrostatic Spherical Aberration Corrector dedicated for SEMs Dr Tadairo Kawasaki (Japan Fine Ceramics Center)	675: Secrets of plasma deposited polyoxazoline functionality lies in the plasma phase Dr Melanie Macgregor (University of South Australia, Future Industries Institute)	494: A flagship South African facility for a double Cs-corrected TEM - From management to micrograph Invited Speaker: Prof Johannes Neethling (Nelson Mandela University, South Africa)	211: Extending Geometric Phase Analysis (GPA) to measure elastic stresses and strains across nanocrystals, grain boundaries and heterostructures Dr Martin Hych (CEMES-CNRS)	1159: Temperature Measurement by a Nanoscale Electron Probe Using Energy Gain and Loss Spectroscopy Dr Juan Carlos Idrobo (Oak Ridge National Laboratory)	864: Unraveling the molecular structure of 2D polymers by low-dose diffraction and imaging Dr Haoyuan Qi (Central Facility for Electron Microscopy, Group of Electron Microscopy of Materials Science, UIm University)	938: Understanding the mechanisms of environmental degradation by high-resolution microscopy Prof Sergio Lozano-Perez (University of Oxford)	947: Novel bending phenomena in van der Waals materials Dr Aidan Rooney (Dept of Physics, Aalto University)	1466: Bacterial adhesion at the nanoscale - probing the required cell-surface contact area and role of fibrinogen using a gradient in surface nanotopography Dr Mats Hulander (Chalmers University of Technology)	454: Identifying stem cell phenotypes involved in brain repair using immuno correlative light electron microscopy methods Ms Viola Oorschot (Monash University)	1484: Revisiting EELS investigations and its coupling with Raman spectroscopy: chemical inhomogeneities at the nanoscale of hydrogenated amorphous carbon thin films Dr Raul Arenal (Universidad de Zaragoza)
14:45	1971: Nanoscopy with Maximally Informative Photons: Pushing the Spatio-Temporal Resolution in Imaging and Tracking Invited Speaker: Dr Francisco Balzarotti (Max Planck Institute for Biophysical Chemistry, Germany)	83: Comparison of Secondary Electron Energy Filtering Techniques in Scanning Electron and Ion Beam Microscopy Mr James Mcgladdery (Department of Materials, Loughborough University)	1381: Nanochannelled graphene membranes for effective water purification Dr Adrian Murdock (CSIRO)	180: Composition and Atomic Arrangement of Binary-Element Atom Columns through Analytical Transmission Electron Microscopy Dr Dan Zhou (Max Planck Institute for Solid State Research, Stuttgart)	1038: Momentum-resolved phonon spectroscopy in the transmission electron microscope Dr Fredrik S. Hage (SuperSTEM Laboratory)	1929: Investigation on the in-situ and ex-situ performance of carbon composites manufactured using Automated Fibre Placement (AFP) Invited Speaker: Prof Gangadhar Prusty (UNSW Sydney, Australia)	529: Understanding the corrosion response of 6xxx series Al-alloys at near atomic to nanometer scale using advanced characterisation techniques Dr Shrawan Kairy (Monash University)	1332: Effects of electron-beam generated lattice defects on the structure of charge density waves in 1T-TaSe2 and 1T-TaS2 Dr Michael Kinyanjui (Central Facility of Electron Microscopy, University of Ulm)	28: Nanobody labeling and super resolution gSTED nanoscopy of the bacterial cell division machinery Dr Bill Söderström (Okinawa Institute of Science and Technology, OIST)	22: Processing zebrafish for correlated light and electron microscopy studies Ms Delfine Cheng (The University of Sydney)	674: Dose limited TEM and STEM characterisation of electron beam sensitive inorganic nanomaterials Mr Rob Hooley (School of Chemical and Process Engineering, University of Leeds)	
15:00	1070: High Aspect Ratio Silicon Nanowires and 3D Nanostructures via Selective Focused Ion Beam Implantation and Wet Etching: Fabrication and Characterization Mr Vivek Garg (Monash University)	324: Correlative TEM and XRD study of the role of Au on the solid state dewetting behavior of Au/Ni bilayers on α -Al ₂ O ₃ Dr Johannes Will (Friedrich-Alexander-Universität Erlangen-Nürnberg)	1983: Microscopy Australia - running a multi-institution research facility that provides open access to microscopy and microanalysis infrastructure, training and support for researchers all around Australia Invited Speaker: Dr Caroline Fuery (The University of Sydney, Australia)	156: Using fast-readout pixel detectors to overcome the multiple scattering problem in scanning transmission electron microscopy Dr Hamish Brown (Monash School of Physics and Astronomy)	968: Screening effects on phonon scattering at interfaces Dr Maureen Joel Lagos (McMaster University)	1205: Deep subsurface, nanosecond laser induced modification of Si: phase transformation and solidification induced morphology Mr Lachlan Smillie (Research School of Physics and Engineering, The Australian National University)	1301: Advanced electron microscopy techniques in structure characterization of mercury dichloride one-dimensional encapsulated crystals Dr Andrey Orekhov (University of Antwerp)	1065: Large area automated image acquisition for integrated CLEM Dr Sangeetha Hari (Delmic BV)	1273: Macromolecular dynamics of malaria parasite adhesion Invited Speaker: Dr Matthew Dixon (The University of Melbourne, Australia)	965: Following the crystallisation of GeTe nano particles using in-situ HRTEM techniques Dr David Cooper (Univ. Grenoble Alpes, CEA, LETI, 38000 Grenoble)		
15:15	452: Removing physiological motion from intravital and clinical fluorescence imaging data Dr Sean Warren (Garvan Institute of Medical Research)	1460: New tools for advance in thermal nanometrology using scanning thermal microscopy Miss Eloise Guen (CETHIL UMR 5008 INSA Lyon, CNRS, UCBL1, Université de Lyon)	90: Correlations between Structure, Composition and Electrical Properties of Tungsten / Tungsten Oxide Periodic Nanolaminates A/Prof Valerie Potin (ICB UMR6303 CNRS Université de Bourgogne-Franche Comte)	136: Measuring Local Electric Fields and Charge Densities using 4D STEM Dr Manveer Munde (Materials Sciences Centre & Faculty of Physics (WZMW), Philipps University Marburg)	655: Nanoscale vibrational spectroscopy of liquid water by monochromated aloof EELS Dr Jacob Jokisaari (University of Illinois at Chicago)	1435: Crystal Growth of Amorphous Calcium Phosphate to Apatite in Bone-Mimetic Nanocomposites Dr Antiope Lotsari (Department of Chemistry and Chemical Engineering, Chalmers University of Technology, Gothenburg)	1245: Anisotropic Evaporation of ZnO Observed by In-situ Cs-Corrected High Resolution Transmission Electron Microscopy Mr Zhen Wang (Department of Energy Science, Sungkyunkwan University (SKKU), Suwon)	959: Comparing TEM and resonant Raman spectroscopy for diameter distribution assessment of single wall carbon nanotubes Dr Frederic Fossard (LEM, Laboratoire d'Etude des Microstructures, ONERA/CNRS)	1153: Automated CLEMing in BioSciences Mrs Joanne Lee (The Australian National University, Centre for Advanced Microscopy)	641: Probing chemical pathways in polyamide reverse osmosis membranes Dr Catriona Mcgivery (Imperial College London)		
15:30	2020: Mapping DNA Target Search in live cell chromatin organisation by fluctuation analysis Invited Speaker: Elizabeth Hinde (Melbourne University, Australia)	1958: Controlled electron channelling contrast imaging, eECCI, for quantitative and in-situ characterization of lattice defects in bulk samples of metals and minerals. Invited Speaker: Dr Stefan Zaefferer (Max Planck Institute, Germany)	1545: Direct Imaging of Electron Transfer and Its Influence on Superconducting Pairing at FeSe/SrTiO ₃ Interface Invited Speaker: A/Prof Yimei Zhu (Brookhaven National Laboratory, USA)	1982: Handling hazardous chemicals in biological electron microscopy laboratories Invited Speaker: Dr Heinz Schwarz (Max Planck Institute for Developmental Biology Tübingen, Germany)	920: Quantification of Pt-based chemotherapeutics using HAADF STEM Ms Alexandra Shearer (University of Oxford)	640: Aloof beam vibrational EELS: a tool for probing hydrogen/defect heterogeneity in graphitic carbon nitrides Prof Peter Crozier (Arizona State University)	2010: Underneath the Surface of Block Copolymer Films: Understanding 3D assembly via STEM Tomography Invited Speaker: A/Prof Tamar Segal-Perez (Technion- Israel Institute of Technology, Israel)	1980: Revealing processes of environmental degradation in nuclear materials through high-resolution microscopy Invited Speaker: Dr Daniel Schreiber (Pacific Northwest National Laboratory, USA)	188: Structural properties of novel tungsten nitride nanosheets Miss Olivia Wenzel (Karlsruhe Institute of Technology (KIT), Laboratory for Electron Microscopy)	1196: 4D Microscopy of red blood cell membrane biophysics during Plasmodium falciparum invasion Dr Niall Geoghegan (The Walter and Eliza Hall Institute)	426: Correlative workflow for murine pulmonary valve extracellular matrix imaging Prof David Miccomb (Center for Electron Microscopy and Analysis, The Ohio State University)	1999: Studies of amorphous solids - from atomic arrangement to properties Invited Speaker: Dr Konstantin Borisenko (Oxford University, UK)
15:45					1253: Analytical 4D STEM with the pnCCD camera Dr Martin Simson (PNDetector GmbH)	804: Probing Low-energy Hyperbolic Polaritons In Van Der Waals Crystals With An Electron Microscope Mrs Andrea Konecna (Materials Physics Center)		1329: In situ surface termination modification of 2D T3C2 MXene in an environmental TEM Mr Ingemar Persson (Department of Physics, Chemistry and Biology, Linköping University)	117: 3D Electron Imaging Reveals Structural Development of Malaria Parasites Dr Boyin Liu (Department of Biochemistry and Molecular Biology, Bio21 Molecular Science and Biotechnology Institute, The University of Melbourne)	1575: Correlative X-ray phase contrast and X-ray fluorescence nanotomography for label-free exploration of tissues, cells and model organisms Dr Alexandra Pacureanu (European Synchrotron Radiation Facility)		
16:00	Afternoon Tea, Exhibition and Poster Viewing <i>Exhibition Hall 2</i>											
14:00 - 17:00	IFSM General Assembly (invitation only) <i>Meeting Room E31 & E32</i> <i>Afternoon tea served in room</i>											
19:00 - 23:00	Congress Dinner <i>Dalton House, Darling Island</i>											



19th International Microscopy Congress
9 - 14 September 2018
International Convention Centre, Sydney

FRIDAY 14 SEPTEMBER 2018		
7:30	Registration Open <i>Outside Exhibition Hall 2 & Ground Level Foyer, International Convention Centre</i>	7:30
8:30 - 10:25	IFSM Symposium <i>Darling Harbour Theatre</i> Welcome Prof Joachim Mayer Australian Microscopy and Microanalysis Society Awards Announcement of the next Australian Conference AI/Prof Martin Saunders (AMMS President) Presentation of the John Cowley Medal (Diffraction Physics and Microscopy) Special Lecture: Songlines of a diffractonist Prof Archie Howie Presentation of the Vernon Cosslett Medal (New Developments in Optics and Instrumentation) Special Lecture: From Cambridge to Sydney, Forty years of energy loss in Orsay Dr Christian Colliex Special Lecture: The quest for quantitative analytical microscopy at atomic resolution Prof Les J. Allen	8:30 - 10:25
10:25	Morning Tea <i>Darling Harbour Theatre Foyers</i>	10:25
11:00 - 12:50	IFSM Symposium <i>Darling Harbour Theatre</i> Presentation of the Hatsujiro Hashimoto Medal (Applications in Physical Sciences) Special Lecture: Learning from Professor Hashimoto's pioneering development of in situ transmission electron microscopy Dr Frances Ross Special Lecture: Grain Boundary and Surface Dynamics of Deformation, Fracture and Diffusion Prof Yuichi Ikuhara Presentation of the Eduard Kellenberger Medal (Life Sciences) Prof Richard Henderson and Prof Jacques Dubochet to accept medal via recorded video message Special Lecture: Single-particle cryogenic electron microscopy - a new era of structural biology Prof Joachim Frank	11:00 - 12:50
12:50 - 13:30	Closing Awards and Ceremony <i>Darling Harbour Theatre</i> Reflection on the week that was including awards for: Best Oral Presentation, New Researcher Award, Best Poster Award, People's Choice Award (Oral and Poster Presentations), and Best Invited Speaker Award Prof Simon Ringer and Prof Paul Munroe (Congress Co-Chairs) Congress reflections from the IFSM President Dr Kazuo Furuya IMC20 (2022) Presentation Next Congress Chair	12:50 - 13:30
13:30 - 14:15	AMMS 25th Anniversary Celebrations in the <i>Darling Harbour Theatre Foyers</i>	13:30 - 14:15