

21st Australian Conference on Microscopy and Microanalysis Final conference program

Updated 07/07/10



Sunday 11 July 2010

1600	Registration and speakers support centre opens
1800 – 1930	Welcome reception <i>Sponsored by Oxford Instruments NanoAnalysis</i> <i>Plaza Foyer, Brisbane Convention & Exhibition Centre</i>
1930	Registration and speakers support centre closes

Monday 12 July 2010

0800	Registration and speakers support centre opens Industry exhibition opens		
	Opening plenary session <i>Plaza Room 1 & 2</i> <i>Chair: Professor John Drennan</i>		
0900	Welcoming remarks Professor John Drennan Director, Centre for Microscopy and Microanalysis, University of Queensland		
0905	AMMS President's Welcome Professor Dougal McCulloch President, Australian Microscopy and Microanalysis Society (AMMS)		
0910	Official opening Professor Max Lu Deputy Vice Chancellor (Research), University of Queensland		
0920	Plenary 1: The fine structure of the cell surface: Plasma membrane microdomains in bacteria, fish and man Rob Parton		
1000	Plenary 2: Order in 'disorder', modulated structures and the TEM: From relaxor ferroelectrics to imaging Fermi surfaces Ray Withers		
1040	Question time		
1045	Morning tea, <i>Plaza Terrace Room</i>		
	Plenary session <i>Plaza Room 1 & 2</i> <i>Chair: Professor Dougal McCulloch</i>		
1115	Plenary 3: Understanding and exploiting solute clustering in Al alloys: An experimental & theoretical framework Simon Ringer		
1155	Plenary 4: Electron and x-ray tomography and super-resolution optical imaging of the falciparum malaria parasite Leanne Tilley		
1235	Question time		
1245	Lunch, <i>Plaza Terrace Room</i>		
	Concurrent 1: Nanomaterials <i>Plaza Room 1 & 2</i> <i>Chair: Laure Bourgeois</i>	Concurrent 2: High resolution analysis of macromolecular assemblies <i>Plaza Room 3</i> <i>Chair: Brad Marsh</i>	Concurrent 3: Advanced scanning electron microscopy I <i>Plaza Room 4</i> <i>Chair: Brendan Griffin</i>
1345	Nanomaterial properties as revealed by in-situ transmission electron microscopy	Improved approaches to 3D structure determination of challenging molecules using	The fall, and rise again, of scanning microscopy David Joy

	Dmitri Golberg	single molecule electron microscopy Michael Landsberg	
1415	SWNH structure analysis by EELS Alan Maigne	Electron tomography of a Ranavirus “factory” Andrew Leis	Microscopic studies of carbon nanotubes grown from germanium nanoparticles Andrea Capasso
1430	Characterisation of nanostructured carbon films for electronic applications Ali Moafi		Low-voltage scanning transmission electron microscopy Nathan Lugg
1445	The registry and composition of nanocrystalline-Si in doped photovoltaic materials Leigh Stephenson	Speaker to be determined	Study on crystallography of nucleation particles in a grain-refined Mg alloy through EBSD Dong Qiu
1500	Characterisation of carbon nanomaterials formed by the catalytic cracking of methane Rahi Varsani		Measuring dislocation densities from EBSD maps? A new approach using weighted Burgers vectors Patrick Trimby
1515	Afternoon tea, <i>Plaza Terrace Room</i>		
	Concurrent 4: Engineering materials <i>Plaza Room 1 & 2</i> <i>Chair: Jin Zou</i>	Concurrent 5: New methods for 3D electron microscopy multiscale analysis <i>Plaza Room 3</i> <i>Chair: Filip Braet</i>	Concurrent 6: Teaching and management <i>Plaza Room 4</i> <i>Chair: Joe Shapter</i>
1545	A simple TEM technique for estimating shape strains associated with solid-solid phase transformations Jian-Feng Nie	Focused ion beam scanning electron microscopy in cell biology Bruno Humbel	A cyber workspace for high dimensional microscopy: A framework for cognitive learning in a digital library Krishna Rajan
1615	Unusual macroscopic shear strain patterns and microstructural evolution in duplex stainless steel processed by high-pressure torsion Yang Cao	3D microscopy, serial block face SEM Joel Mancuso	Online tools for management of multi-user microscopy facilities Paul Munroe
1630	Quantification of the effect of twinning on the deformation behaviour of hexagonal close-packed metals Gwenaelle Proust		
1645	Structural relationships between intermetallic phases in Mg-Zn-Y alloys Julian Rosalie	Correlative imaging in a photosynthetic system Emily Knauth	Development of a universal technique finder application for microscopy and microanalysis Jenny Whiting
1700	Speaker to be determined	High resolution FIB-nanotomography of biological cell tissue and investigation of interfaces between tissue and biocompatible materials Peter Gnauck	A national approach to education in advanced microscopic characterisation through integrated learning tools Bronwen Cribb
1715	Sessions conclude		
1715 – 1815	Poster session and happy hour, <i>Plaza Terrace Room</i>		
1815	Registration and speakers support centre closes Industry exhibition closes		
Tuesday 13 July 2010			
0830	Registration and speakers support centre opens Industry exhibition opens		

	Plenary session <i>Plaza Room 1 & 2</i> <i>Chair: Dr Peter Miller</i>		
0900	Plenary 5: Femtosecond protein nanocrystallography John Spence		
0940	Plenary 6: Towards atomically precise silicon devices in all three dimensions Michelle Simmons		
1020	Question time		
1030	Morning tea, <i>Plaza Terrace Room</i>		
	Concurrent 7: Semiconductor nanomaterials <i>Plaza Room 1 & 2</i> <i>Chair: Zongwen Liu</i>	Concurrent 8: Modern cryotechniques for electron microscopy <i>Plaza Room 3</i> <i>Chair: Rick Webb</i>	Concurrent 9: Scanning probe techniques <i>Plaza Room 4</i> <i>Chair: Bogdan Donose</i>
1100	Strain induced brittle/ductile transition of covalent bonded nanowires Ze Zhang	Getting started with cryotechniques for biological EM: Some low-cost options Kent McDonald	The Atomic Force Microscope: More than a microscope Vince Craig
1115			Scanning probe microscopy: Can it do anything besides take a nice picture? Joe Shapter
1130	Microstructural characteristics and growth mechanism of ZnO microtowers grown on Si (100) Lina Cheng	Using the Leica EM VCT100 versatile cryo-transfer system for cryo-SEM Kim Rensing	A cyclic voltammetry, AFM and raman study of galena oxidation Marc Hampton
1145	Investigation of multiferroic-half metallic epitaxial heterostructures using energy dispersive spectroscopy (EDS) and energy filtered transmission electron microscopy (EFTEM) Sundaram Sankara	Ultrastructural reconstruction of <i>Taenia ovis</i> (Platyhelminthes: Cestoda) oncospheres from serial sections after high pressure freezing and freeze substitution Abdul Jabbar	Speaker to be determined
1200	Selectively growing perfect zinc blende and wurtzite InAs nanowires Jennifer Wong-Leung	Cryo-fluorescence microscopy using a stereo zoom microscope and a cryo-ultramicrotome Andrew Leis	Speaker to be determined
1215	Microstructural analysis of zinc oxide films doped with aluminium for solar cell research Matthew Field	Speaker to be determined	Speaker to be determined
1230	Lunch, <i>Plaza Terrace Room</i>		
	Concurrent 10: Materials characterisation I <i>Plaza Room 1 & 2</i> <i>Chair: Jian-Feng Nie</i>	Concurrent 11: Correlative light and electron microscopy <i>Plaza Room 3</i> <i>Chair: Rob Parton</i>	Concurrent 12: Advanced transmission electron microscopy techniques <i>Plaza Room 4</i> <i>Chair: Peter Miller</i>
1330	Transmission electron microscopy studies of solid-state nucleation and growth mechanisms in light alloys Laure Bourgeois	New biomolecular microscopy and related correlative imaging tools to dissect cellular structure and function (in hepatic colorectal metastasis) Filip Braet	Using java to develop image simulation and analysis in transmission electron microscopy Pierre Stadelmann
1400	Replenishable ablative coatings for hypersonic flight vehicles Anna Lashtabeg	New insights into host-parasite interactions in human schistosomiasis from correlative microscopy investigations Mal Jones	Precession electron diffraction: From structure resolution to crystal orientation mapping Yves Maniette
1415	Nitrogen doping of oriented graphitic thin films for high performance gas sensors	Correlative light/electron microscopy of high pressure frozen/freeze substituted samples	Imaging a sub-ångström electron probe after scattering by a crystal Joanne

	Desmond Lau	Rick Webb	Etheridge
1430	The role of zinc oxide in deterioration of modern oil based paintings Gillian Osmond	Ultrastructural analysis of the role of clathrin in bridging K-fibres with mitotic spindles Ian Prior	Imaging and identification of light atoms by ADF STEM Stephen Pennycook
1445	Core-shell nanowires formed by the growth of ternary nanowires Yanan Guo	Speaker to be determined	Energy filtered precession electron diffraction: Novel applications of Zeiss Libra 200 Cs corrected TEM for structure determination of nanocrystals Giuseppe Pavia
1500	Afternoon tea, <i>Plaza Terrace Room</i>		
	Concurrent 13: Materials characterisation II <i>Plaza Room 1 & 2</i> Chair: James Boland	Concurrent 14: Advanced light microscopy <i>Plaza Room 3</i> Chair: Sarah Ellis	Concurrent 15: Microanalysis <i>Plaza Room 4</i> Chair: Ron Rasch
1530	Structural behaviour of nanocrystalline materials under severe plastic deformation Xiaozhou Liao	Super-resolution fluorescence microscopy for cell signaling Katharina Gaus	MC x-ray, the new Monte Carlo program for quantitative microscopy of real materials in the SEM and in the TEM Raynald Gauvin
1600	Quantitative bright-field scanning transmission electron microscopy Les Allen	Automated classification and visualisation of high throughput subcellular imaging Nick Hamilton	Atomic resolution chemical mapping using energy dispersive x-ray spectroscopy Adrian D'Alfonso
1615	Electron tomography for complicated mesoporous structures Jin Zou		
1630	A novel method for 3D characterisation of gold nanorods Hadas Katz-Boon	Microscopic medical imaging in living humans with optical coherence tomography Brendan Kennedy	Localised oxygen detection in titanium by WDS Alexander Buddery
1645	Scanning TEM study of topologically defective features in $\text{In}_x\text{Ga}_{1-x}\text{N}$ films Jin-Ping Zhang		Post processing - Quadrant analysis of clusters in scatter diagrams Ken Moran
1700	Sessions conclude		
1700	Registration and speakers support centre closes Industry exhibition closes		
1715	AMAS – Annual General Meeting <i>Plaza Room 1 & 2</i>		
Wednesday 14 July 2010			
0830	Registration and speakers support centre opens Industry exhibition opens		
	Plenary session <i>Plaza Room 1 & 2</i> Chair: Professor Alex Hyatt		
0900	Award presentations <i>Including presentation of the Best Micrograph Award as sponsored by AMMRF</i>		
0930	Plenary 7: Mars up close: High resolution imaging and microscopy from the <i>Spirit</i> and <i>Opportunity</i> rovers and the <i>Phoenix</i> lander Jim Bell		
1030	Morning tea, <i>Plaza Terrace Room</i>		
	Concurrent 16: Scanning electron microscopy <i>Plaza Room 1 & 2</i>	Concurrent 17: 3D electron microscopy <i>Plaza Room 3</i> Chair: Michael Landsberg	Concurrent 18: Atomic probe microscopy <i>Plaza Room 4</i>

	<i>Chair: Kim Sewell</i>		<i>Chair: Simon Ringer</i>
1100	3D visualisations through focused ion beam microscopy Paul Munroe	3D cellular cartography at the nanoscale Brad Marsh	Microstructural investigation of Zn ₃ Sb ₄ thermoelectric materials Baptiste Gault
1115			The role of Sn additions in the pre-precipitation stage of Al-Cu alloys Michael Moody
1130	Carbon nanotube strength measurement by SEM nano-tensile stage Noman Khandoker	High-resolution 3-dimensional analysis of caveolae Nicholas Ariotti	Impact of surface migration on the measurement of composition in the analysis of low-alloyed steels Baptiste Gault
1145	An EPMA and APT study of the composition dependence of the rapid hardening behaviour in Al-Cu-Mg alloys using diffusion couples Ross Marceau		A reproducible method for site-specific preparation of atom probe tips by FIB lift-out and TEM Peter Felfer
1200	The study of hydrogel network morphology and degradation by cryogenic scanning electron microscopy David Wang	Whole cell imaging of <i>Plasmodium falciparum</i> blood stages Eric Hanssen	Atomic scale microstructure-property relationships in the Ni-based superalloy Inconel 718 Julie Cairney
1215	Focused ion beam hard mask technique for patterning diamond nano-phonic structures Warren McKenzie		
1230	<i>Lunch, Plaza Terrace Room</i>		
	Concurrent 19: Interfaces <i>Plaza Room 1 & 2</i> <i>Chair: Joanne Etheridge</i>	Concurrent 20: Complex biological systems/biomaterials <i>Plaza Room 3</i> <i>Chair: Bronwen Cribb</i>	Concurrent 21: Advanced scanning electron microscopy II <i>Plaza Room 4</i> <i>Chair: David Joy</i>
1330	Electron holography of the hetero-interface between metal and solid ionic conductor Takayoshi Tanji	Applications of confocal microscopy in food science Sofia Kihlman Øiseth	The sub-nanometre and energy-filtered imaging reality of modern SEM Brendan Griffin
1345	Interface structure analysis via scanning transmission electron microscopy Scott Findlay	Mechanical characterisation of pteropods collected from Antarctic waters Jodie Bradby	
1400	Study of nano-thickness precipitates in Mg-Y-Zn based alloys by HAADF-STEM and 3DAP Yuman Zhu	Silicon distribution in roots of banana and <i>Arabidopsis thaliana</i> Kevan Jones	The contrast mechanisms of LL-BSE electrons in FE-SEM-characterisation of polymer, single proteins, and oxidation states of elements Heiner Jaksch
1415	Aberration corrected STEM of interfaces, clusters and precipitates Matthew Weyland	Cell wall changes during storage of apple fruit Ian Hallett	Advances in FE-SEM for nano- and macro-scale imaging and analysis Kazumichi Ogura
1430	Quantitative determination of lattice distortions in thin films using aberration corrected scanning transmission electron microscopy Mark Oxley	Localisation of flax rust effectors during plant infection Adrienne Hardham	Imaging and microanalysis in heating stage environmental SEM Thor Bostrom
1445	Microscopy and spectroscopy study of Poly(3-hexylthiophene) coiled carbon nanotube for photovoltaic applications	Laser microdissection microscopy for tissue-specific transcriptomics of human helminth parasites Sujevi Nawaratna	Speaker to be determined

	Michele Giulianini		
1500	Afternoon tea, <i>Plaza Terrace Room</i>		
	Concurrent 22: Advanced transmission electron microscopy <i>Plaza Room 1 & 2</i> <i>Chair: Julie Cairney</i>	Concurrent 23: Advanced microscopy to study cellular dynamics <i>Plaza Room 3</i> <i>Chair: Mal Jones</i>	Concurrent 24: Sectioning/x-ray tomography <i>Plaza Room 4</i> <i>Chair: Allan Jones</i>
1530	Recent progress of quantitative TEM deformation technology and its application Zhiwei Shan	Measuring exocytosis by total internal reflection fluorescence microscopy: The role of cortical actin in regulating GLUT4 exocytosis Will Hughes	Better estimates of bone strength from combined imaging analyses Peter Smith
1600	Measurement of spatial coherence in a transmission electron microscope Christian Maunders	Observing the novel behaviour of post exocytic granules in pancreatic β cells using 2-photon microscopy Peter Thorn	Synchrotron time-resolved x-ray imaging and micro-x-ray fluorescence mapping of nonfaceted/faceted eutectic alloy solidification Kazuhiro Nogita
1615	Transmission electron microscopy measurements of short range order in disordered solids: RDFTools Timothy Petersen	Pulling fibrils: A stressful act in cell migration Lilian Soon	Phase contrast x-ray imaging and MicroCT of weakly absorbing materials using laboratory x-ray sources Les Brownlow
1630	A quantum mechanical model for phonon excitation in crystals by fast electrons Benjamin Forbes	Multi-dimensional live cell imaging of cancer-mediated events Yingying Su	Three-dimensional analysis of hard structure in a sea-urchin spine John Fitz Gerald
1645	Coherent diffractive imaging using a focused coherent electron probe Andrew Morgan	Cellular distribution of a gold(i) based anti-cancer compound: A NanoSIMS and EFTEM study Louise Wedlock	High resolution CT: Comparison between x-ray-tube based and synchrotron based μ CT Gerhard Zacher
1700	Sessions conclude		
1700	Registration and speakers support centre closes Industry exhibition closes		
1715	AMMS – Special General Meeting <i>Plaza Room 1 & 2</i>		
1900 – 2200	Conference Social Event Sponsored by nanoTechnology Systems <i>Roof-top Terrace, The Fox Hotel</i>		

Thursday 15 July 2010

0830	Registration and speakers support centre opens Industry exhibition opens		
	Concurrent 25: Materials characterisation III <i>Plaza Room 1 & 2</i> <i>Chair: Jin Zou</i>	Concurrent 26: Multiscale analysis of complex biological systems <i>Plaza Room 3</i> <i>Chair: Andrew Leis</i>	Concurrent 27: Cathodoluminescence <i>Plaza Room 4</i> <i>Chair: Kevin Blake</i>
0900	TEM investigation of GeMn magnetic semiconductors Yong Wang	The hemopoietic stem cell niche: A close relationship between hemopoietic stem cells, bone and vasculature Sarah Ellis	Cathodoluminescence spectrometry in a (S)TEM microscope Pierre Stadelmann
0915	Investigation of magnetic materials and semiconductor nanostructures by off-axis	Quantitative electron microscopy defines a high capacity, clathrin-independent endocytic	

	electron holography Changlin Zheng	mechanism that becomes polarized in migrating cells Mark Howes	
0930	Studies of microstructure and ion sorption in tunnel-structured manganese oxide materials Thor Bostrom	Microscopy, minerals and molluscs: Imaging of a composite iron biomineral across multiple length scales Jeremy Shaw	Development and characteristics of a high sensitivity and resolution CMOS TEM camera Yves Maniette
0945	Understanding the formation of ZnS branched architectures Zhigang Chen	Anatomical and physiological characterisation of GABAergic feedback excitation in parvalbumin expressing interneuron's of the basolateral amygdala Rob Sullivan	Cathodoluminescence microanalysis of GaN/AlN layered structures Marion Stevens-Kalceff
1000	Atomic resolution imaging of O positions in perovskites by spectrum imaging Maria Varela	The effects of chemical and microwave fixation and high pressure freezing on the ultrastructure of the selachian retina Blake Harahush	Microanalysis of focused ion beam processed cadmium sulphide crystals Katie Levick
1015	Nanostructured transparent rare earth silicate ceramics for optical devices Zhili Dong	Tooth biomineralisation in marine molluscs: A combined TEM and FIB approach Martin Saunders	Characterisation of the microstructural features in diamond composite materials James Boland
1030	Morning tea, <i>Plaza Terrace Room</i>		
	Concurrent 28: Materials characterisation IV <i>Plaza Room 1 & 2</i> <i>Chair: Thor Bostrom</i>	Concurrent 29: Electron microscopy of viruses and nanoparticles <i>Plaza Room 3</i> <i>Chair: Alex Hyatt</i>	Concurrent 30: Surface science <i>Plaza Room 4</i> <i>Chair: Barry Wood</i>
1100	Atomic displacements of surface steps on platinum catalytic nanoparticles measured using combined aberration-corrected TEM and exit wave restoration Shery Chang	Foot-and-Mouth disease virus targets the cytoskeleton <i>in vitro</i> and <i>in vivo</i> Paul Monaghan	ToF-SIMS analysis of polymers and bio-interfaces Hans Griesser
1115			Chemistry at the sub-micron scale with NanoSIMS Matt Kilburn
1130	Grain size effect on the deformation-induced phase transformations in a Ti alloy Yanbo Wang	Viral diagnostic TEM analysis of veterinary paraffin blocks – utilising imaging networks and laser capture micro dissection Sandy Crameri	Development of a metrological scanning probe microscope for traceable nanoscale length metrology Jan Herrmann
1145	Measurements and characterisation with in situ SPM-TEM instruments Oleg Lourie	Transmission electron microscopy methods for observing metal oxide nanoparticle size and their distribution within sunscreens Margaret Butler	Bulk adsorption vs. microfluidic deposition of a four protein mixture: A dynamic force spectroscopy study David Green
1200	Insight into the order of an amorphous network by correlation of vibrational properties and medium range order determined by fluctuation electron microscopy in the case of silicon Bianca Haberl	Influence of formulation parameters on immunostimulating complexes (ISCOMs) formation examined by transmission electron microscopy (TEM) Hoang Lam Pham	Material sensitive microscopy on the nanometer scale Ute Schmidt
1215	Catalyst metal selection in semiconductor III-V nanowire growth Justin Xu	Speaker to be determined	Optimising the beam transfer in ESEM Gerry Danilatos
1230	Lunch (including presentation of the John Farrant Prizes), <i>Plaza Terrace Room</i>		
1330	Industry exhibition closes (exhibitors commence dismantle)		
1330	Speakers support centre closes		
	Concurrent 31: Analytical transmission electron microscopy <i>Plaza Room 1 & 2</i>	Expert panel Q&A session I <i>Plaza Room 3</i>	Expert panel Q&A session II <i>Plaza Room 4</i>

	<i>Chair: John Nailon</i>		
1330	Recent developments in STEM-EELS Alan Maigne	Speakers to be determined	Speakers to be determined
1345	GIF quantum: Next generation post column imaging energy filter Alan Maigne		
1400	Characterisation of a large area silicon drift detector for use in analytical transmission electron microscopy Julie Sheffield-Parker		
1415	A site specific TEM-EDS study of the α/β -phase boundary in high pressure die cast AZ91 alloy Charlie Kong		
1430	Speaker to be determined		
1445	Speaker to be determined		
1500	Sessions conclude		
1500	Registration closes		