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International Conference on
**Nanoscience and
Nanotechnology**

HOSTED BY



International Conference on
**BioNano
Innovation**



BRISBANE CONVENTION & EXHIBITION CENTRE

9-13 FEBRUARY 2020

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PROGRAM

Sunday 9 February 2020

1500 - 1900	Registration and information desk open
1700 - 1800	Q&A panel session - What makes a great leader ▶ Prof Peter Høj, Vice-Chancellor and President, The University of Queensland ▶ Prof Roland De Marco, Deputy Vice-Chancellor (Research and Innovation), University of the Sunshine Coast ▶ Prof Margaret Shiel, Vice-Chancellor and President, Queensland University of Technology Chair: Prof Joe Shapter, The University of Queensland Room ▶ <i>Great Hall 1&2</i>
1800 - 1900	Welcome reception Room ▶ <i>Mezzanine level</i>

Monday 10 February 2020

0700 - 1900	Registration and information desk open							
0830 - 0900	Opening ceremony & Welcome to Country Chair: Prof Lianzhou Wang, The University of Queensland Room ▶ <i>Great Hall 1&2</i>							
0900 - 0945	Plenary speaker presentation: Photocatalytic water splitting for large scale solar hydrogen production - 100 ▶ Prof Kazunari Domen, The University of Tokyo, Japan Chair: Prof Rose Amal, University of New South Wales Room ▶ <i>Great Hall 1&2</i>							
0945 - 1030	Plenary speaker presentation: Nanomaterials design for energy and environment - 101 ▶ Prof Yi Cui, Stanford University, United States Chair: Prof Joe Shapter, The University of Queensland Room ▶ <i>Great Hall 1&2</i>							
1030 - 1100	Morning tea Room ▶ <i>Mezzanine level</i>							
1100 - 1230	Concurrent Session 1A	Concurrent Session 1B	Concurrent Session 1C	Concurrent Session 1D	Concurrent Session 1E	Concurrent Session 1F	Concurrent Session 1G	Concurrent Session 1H
Theme	BIONANO Room ▶ <i>Great Hall 1&2</i>	BIONANO Room ▶ <i>P1</i>	NANO ENERGY & ENVIRONMENT Room ▶ <i>P2</i>	NANO ENERGY & ENVIRONMENT Room ▶ <i>P3</i>	NANO COMPUTATION Room ▶ <i>P4</i>	NANO POLYMERS Room ▶ <i>P5</i>	NANO CARBON Room ▶ <i>M1</i>	NANOMATERIALS Room ▶ <i>M2</i>
Chair/s	Prof Andrew Whittaker and Assoc Prof Chun-Xia Zhao	Dr Barbara Rolfe	Dr Zongyou Yin	Dr Tianyi Ma	Assoc Prof Ekaterina Pas	Prof Michael Monteiro	Prof Yuan Chen	
			Sponsored by: NEWARE	Sponsored by: NEWARE				
1100 - 1115	Multifunctional nanocomposites with sequential tumor acidity responsiveness for cancer photodynamic therapy and imaging - 102 ▶ Prof Doo Sung Lee, Sungkyunkwan University, South Korea Sponsored by: 	Collagen disorder domains in human anterior cruciate ligament caused by repetitive sub-maximal mechanical loading - 106 ▶ Prof Mark Banaszak Holl, Monash University, VIC Smart polymer-coated hybrid calcium phosphate nanoparticles for oral vaccine delivery - 107 ▶ Dr Li Li, The University of Queensland, QLD	Nature Nanotechnology, energy and the environment - 111 ▶ Dr Fabio Pulizzi, Nature Nanotechnology, United Kingdom	Bioinspired super-wettability system and beyond quantum-confined superfluid: energy conversion, chemical reaction and biological information transfer - 115 ▶ Prof Lei Jiang, Chinese Academy of Sciences, China	A computational screening of porous materials for biogas upgrading - 119 ▶ Prof Elena Besley, University of Nottingham, United Kingdom	Adaptive polymer nanoreactors with life-like features - 123 ▶ Prof Jan Van Hest, Eindhoven University of Technology, Netherlands	Oriented assembly of functional mesoporous materials with multi-level architectures - 126 ▶ Prof Dongyuan Zhao, Fudan University, China	Nanoscale materials for electronics and optoelectronics - 131 ▶ Dr Sumeet Walia, RMIT University, VIC Effects of microstructure and growth conditions on quantum emitters in gallium nitride - 132 ▶ Mr Minh Nguyen, University of Technology Sydney, NSW
1115 - 1130								

1130 - 1145	<p>The use of self-immolative polymers to tune nanoparticle/biological interactions - 103</p> <p>► Dr Georgina Such, The University of Melbourne, VIC</p>	<p>New strategy for blood-brain barrier crossing and brain disease therapy - 108</p> <p>► Dr Bingyang Shi, Macquarie-Henan Uni Joint Centre for Biomedical Innovation, NSW</p>	<p>Nanoengineered materials for catalytic cascades - 112</p> <p>► Prof Adam Lee, RMIT University, VIC</p>	<p>Nanoporous materials for energy and environmental applications - 116</p> <p>► Prof George Zhao, The University of Queensland, QLD</p>	<p>Understanding ion transport in cascading nanoslit systems embedded in graphene membranes - 120</p> <p>► Assoc Prof Zhe Liu, The University of Melbourne, VIC</p>	<p>Polymer processing under high shear fluid flow - 124</p> <p>► Prof Colin Raston, Flinders University, SA</p>	<p>The nature of the carbon nanotube – catalyst interface during chemical vapour deposition growth - 127</p> <p>► Assoc Prof Alister Page, The University of Newcastle, NSW</p>	<p>Coexisting structural phases in the catalytically driven growth of rock salt GdN - 133</p> <p>► Mr Ali Shaib, Victoria University of Wellington, New Zealand</p>
1145 - 1200		<p>Mimicking systemic multi-organ interactions with microfluidics - 109</p> <p>► Assoc Prof Yi-Chin Toh, Queensland University of Technology, QLD</p>			<p>A strategy to achieve perfect alignment of graphene domains on Cu(111) surface - 121</p> <p>► Dr Qinghong Yuan, The University of Queensland, QLD</p>		<p>High-yield, single-step of slicing and converting of metallic to semiconducting SWCNTs using vortex fluidic device - 128</p> <p>► Mr Thaar Alharbi, Flinders University, SA</p>	
1200 - 1215	<p>Development of silk fibroin coated nanodiamonds for drug delivery and theranostic applications - 105</p> <p>► Ms Zahra Khabir, Macquarie University, NSW</p>	<p>Microfluidics for tools in nanomedicine - 110</p> <p>► Prof Jiang Xingyu, Southern University of Science and Technology, China</p>		<p>Earth abundant electrocatalysts for hydrogen energy conversion and storage - 117</p> <p>► Prof Chuan Zhao, University of New South Wales, NSW</p>	<p>Nucleation and growth of low-dimensional boron nitrides via chemical vapour deposition: Insights from molecular simulations - 122</p> <p>► Assoc Prof Alister Page, The University of Newcastle, NSW</p>	<p>Programming the self-assembly of polymers, gels and other functional systems - 125</p> <p>► Prof Pall Thordarson, University of New South Wales, NSW</p>	<p>Efficient micro and nano patterning of SWCNTs via discontinuous dewetting and liquid-bridge-mediated nanotransfer, and application in CNT/silicon heterojunction solar cells - 129</p> <p>► Mr Alexander Corletto, The University of Queensland, QLD</p>	
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1245 - 1325	<p>Lunch Q&A panel session - How to get published</p> <p>► Prof Paul S. Weiss, University of California, Los Angeles, United States</p> <p>► Dr Fabio Pulizzi, Nature Publishing Group, United Kingdom</p> <p>► Dr Esther Levy, Wiley, VIC</p> <p>► Professor Dongyuan Zhao, Fudan University and Senior Editor for ACS Central Science, China</p> <p>► Professor Lei Jiang, Chinese Academy of Sciences, China</p> <p>Chair: Dr Yang Bai, The University of Queensland</p> <p>Room ► <i>Great Hall 1&2</i></p>							

1330 - 1500	Concurrent Session 2A	Concurrent Session 2B	Concurrent Session 2C	Concurrent Session 2D	Concurrent Session 2E	Concurrent Session 2F	Concurrent Session 2G	Concurrent Session 2H
Theme	BIONANO Room ► <i>Great Hall 1&2</i>	BIONANO Room ► <i>P1</i>	NANO ENERGY & ENVIRONMENT Room ► <i>P2</i>	NANO ENERGY & ENVIRONMENT Room ► <i>P3</i>	NANO COMPUTATION Room ► <i>P4</i>	NANO POLYMERS Room ► <i>P5</i>	NANO CARBON Room ► <i>M1</i>	NANOMATERIALS Room ► <i>M2</i>
Chair/s	Prof Yin Xiao and Dr Amiral Popat	Dr Barbara Rolfe and Dr Jan Lauko	Dr Yu Lin Zhong		Assoc Prof Alister Page	Prof Prashant Sonar	Prof Yong Sik Ok and Dr Nisa Salim	
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1400 - 1415	Nano surfaces and early inflammatory responses in tissue regeneration - 137 ► Prof Yin Xiao, Queensland University of Technology, QLD	High speed atomic force microscopy for visualizing plasma protein adsorption on silica nanoparticle-based coatings - 144 ► Mr Nuwan Dhanushka Hegoda Arachchi, University of Wollongong, NSW	Layered materials for energy conversion: Reactivity and stability - 153 ► Dr Zongyou Yin, The Australian National University, ACT	Functionalized nanoporous carbon and nitride based materials for energy and environmental applications - 156 ► Prof Ajayan Vinu, The University of Newcastle, NSW	Nanoinformatics and the big data challenges for the science of small things - 162 ► Dr Amanda Barnard, CSIRO Data61, VIC	Oligoviologen-based photo-redox actuating hydrogels - 169 ► Mr Faheem Solangi, Washington University in Saint Louis, United States	Functional carbon fibres and particles with hierarchical porosity - 174 ► Dr Nisa Salim, Swinburne University of Technology, VIC	Facile production of hexagonal boron nitride nanoparticles by cryogenic exfoliation - 181 Ms Hanh Duong, University of Technology Sydney, NSW
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1600 - 1845	Concurrent Session 3A	Concurrent Session 3B	Concurrent Session 3C	Concurrent Session 3D	Concurrent Session 3E	Concurrent Session 3F	Concurrent Session 3G	Concurrent Session 3H
Theme	BIONANO Room ► <i>Great Hall 1&2</i>	BIONANO Room ► <i>P1</i>	NANO ENERGY & ENVIRONMENT Room ► <i>P2</i>	NANO ENERGY & ENVIRONMENT Room ► <i>P3</i>	NANO COMPUTATION Room ► <i>P4</i>	NANO POLYMERS Room ► <i>P5</i>	NANO CARBON Room ► <i>M1</i>	NANOMATERIALS Room ► <i>M2</i>
Chair/s	Prof Bo Liedberg and Dr Simon Corrie	Prof Millicent Sullivan and Dr Nicole Smith	Dr Bin Luo	Prof Hongxia Wang and Dr Munkhbayar Batmunkh	Dr Amanda Barnard and Dr Asaph Widmer-Cooper	Dr Valentin Bobrin	Dr Asif Mahmood and Dr Ludovic Dumeé	Prof Warwick Bowen
1600 - 1615	Targeting refractory acute lymphoblastic leukaemia – Drug repurposing with combinatorial bispecific antibodies - 187 ► Prof Maria Kavallaris, Children's Cancer Institute, NSW	Modular design of peptide-based biomaterials - 195 ► Prof Mibel Aguilar, Monash University, VIC	Development of organic ionic plastic crystals as solid-state electrolytes - 202 ► Prof Jenny Pringle, Deakin University, VIC	Perovskite/ Si tandem solar cells - 209 ► Prof Anita Ho-Baillie, The University of Sydney, NSW	Towards all-organic radical batteries - 216 ► Assoc Prof Ekaterina Pas, Monash University, VIC	Synergistic dynamic chemistries to control soft matter function - 223 ► Prof Luke Connal, The Australian National University, ACT	Computational studies of graphene and nitrogen-doped graphene as functional two-dimensional materials - 231 ► Prof Debra Bernhardt (Searles), The University of Queensland, QLD	Direct band gap emission from hexagonal Ge and SiGe alloys - 240 ► Miss Elham Fadaly, Eindhoven University of Technology, Netherlands
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1630 - 1645	Bioconjugation chemistry at CSIRO: From antibody-polymer-drug conjugates to nanomachine biocatalysis - 188 ► Dr Charlotte Williams, CSIRO, VIC	Protein and peptide engineering for targeted, intracellular delivery - 196 ► Prof Millicent Sullivan, University of Delaware, United States	Perovskite – a wonder for photovoltaic & optoelectronic applications - 203 ► Prof Shengzhong (Frank) Liu, Dalian Institute of Chemical Physics, China	Solution-processed perovskite optoelectronics - 210 ► Prof Udo Bach, Monash University, VIC	Rational engineering of binary oxides and semiconductors for photocatalytic applications - 217 ► Dr Claudio Cazorla, University of New South Wales, NSW	Molecular imprinting by precipitation polymerisation - 224 ► Assoc Prof Clovia Holdsworth, The University of Newcastle, NSW	Engineered metal@ carbon nanohybrids for enhanced carbocatalysis in environmental remediation - 236 ► Dr Xiaoguang Duan, The University of Adelaide, SA	Selective control of surface spin current in topological materials - 242 ► Dr Yuefeng Yin, Monash University, VIC
1645 - 1700	Developing peptide receptor radionuclide therapies (PRRT) for personalised cancer therapy - 189 ► Dr Simon Puttick, CSIRO, QLD						Textured carbon for efficient energy conversion and storage - 233 ► Dr Asif Mahmood, The University of Sydney, NSW	Signatures of helical edge transport in millimetre-scale thin films of Na3Bi - 243 ► Mr Chang Liu, Monash University, VIC
1700 - 1715	Creating optical nanobiosensors from engineered antibodies for protein detection - 190 ► Dr Simon Corrie, Monash University, VIC	Peptide-driven binding, exfoliation, and stabilization of 2D nanosheet materials - 197 ► Prof Marc Knecht, University of Miami, United States	Translating novel battery and supercapacitor technologies through industry partnerships - 204 ► Prof Mainak Majumder, Monash University, VIC	Functionalized carbon materials for perovskite solar cells - 211 ► Prof Hongxia Wang, Queensland University of Technology, QLD	Electrochemical performance of layered-expanded metal dichalcogenides cathodes for Mg-ion batteries - 218 ► Dr Mingchao Wang, Monash University, VIC	Design and synthesis of semiconducting macromolecules for organic electronics - 225 ► Prof Prashant Sonar, Queensland University of Technology, QLD	Atomic layer deposition of metal oxide (SnO₂) on carbon nanotubes membranes for photoelectro-catalytic applications - 234 ► Mr Ahmed Rashed, Deakin University, VIC	Scalable nanomechanical computing - 244 ► Prof Warwick Bowen, The University of Queensland, QLD
1715 - 1730	Short break							

1730 - 1745	Biosensor technologies for field applications - 191 ▶ Prof Bo Liedberg, Nanyang Technological University, Singapore	Investigating the formation dynamics between non-canonical DNA structures at different cell cycle stages in breast cancer - 198 ▶ Dr Nicole Smith, University of Western Australia, WA	MXene derived 2D hybrid structures for energy storage applications - 205 ▶ Dr Bin Luo, The University of Queensland, QLD	Designing novel organic small molecular as electron transport layers for planar perovskite solar cells - 212 ▶ Prof Qichun Zhang, Nanyang Technological University, Singapore	Materials for energy applications: How theoretical modeling contributes to the experiment? - 219 ▶ Prof Aijun Du, Queensland University of Technology, QLD	Nanometric coating of single cells with polymers - 226 ▶ Prof Sung Ho Yang, Korea National University of Education, South Korea	Preparation methods for carbon materials possessing turbostratic graphite and graphene nanodomains via combustion of magnesium in carbon dioxide - 235 ▶ Dr Tak Kim, Griffith University, QLD	Interatomic force laws that evade dynamic measurement - 245 ▶ Prof John Sader, The University of Melbourne, VIC
1745 - 1800						Self-assembled nanostructures of multiple block polymers - 227 ▶ Ms Charmaine Hee, The University of Western Australia, WA		Spin relaxation and optically detected magnetic resonance of Cr³⁺ in Al₂O₃ (Ruby) - 246 ▶ Mr Vikas Sewani, University of New South Wales, NSW
1800 - 1815	Molecular imaging and theranostic approaches for cardiovascular diseases - 192 ▶ Dr Xiaowei Wang, Baker Heart and Diabetes Institute, VIC	Tumour microenvironment-enhanced layered double hydroxides for synergistic phototherapy and chemodynamic therapy under low power laser irradiation - 199 ▶ Miss Luyao Sun, The University of Queensland, QLD			Cation effect on the electrolyte structure with an applied potential: a molecular level investigation using a constant potential method - 220 ▶ Dr Baris Demir, The University of Queensland, QLD	Polysaccharide coated upconversion nanoparticles for imaging intracellular mechanisms - 228 ▶ Dr Lindsay Parker, Macquarie University, NSW		
1815 - 1830	Intrinsically fluorescent PAMAM dendrimer as drug carrier and nanoprobe: Bioimaging and neuron protection study - 193 Dr Guoying Wang, Macquarie University, NSW	Thermoresponsive fluorinated PEG-based polymers/hydrogels for monitoring drug release - 200 Mr Adil Usman, The University of Queensland, QLD			Selective CO₂ conversion on low-dimensional materials - 221 ▶ Dr Si Zhou, University of Wollongong, NSW	Swelling and aggregation dynamics in Au@PNIPAM colloid systems: A capacitor-based temperature jump study - 229 Mr Ben Tadjell, The University of Melbourne, VIC		
1830 - 1845	Electrospun diamond-silk membranes for biosensing applications - 194 Dr Asma Khalid, RMIT University, VIC	The effect of aromatic residues on electrical conductivity and structure of α-helical peptides - 201 Mr Armin Solemanifar, The University of Queensland, QLD			High-performance Bi₂Te₃ thermoelectric materials via modulation of carrier concentration guided by SPB model - 222 ▶ Mr Yuan Wang, University of Southern Queensland, QLD	Enhanced treatment of glioblastoma using EphA2-targeted bispecific antibodies an adjuvant for a doxorubicin-loaded hyperbranched polymer - 230 ▶ Mr Phillip Janowicz, The University of Queensland, QLD		
1845 - 2000	Poster session Room ▶ <i>Mezzanine level</i>							

Tuesday 11 February 2020

0730 - 1900	Registration and information desk open							
0830 - 0915	Plenary speaker presentation: Aggregation-induced emission: Materials and biomedical applications - 300 ▶ Prof Bin Liu, National University of Singapore, Singapore Chair: Prof Andrew Whittaker, The University of Queensland Room ▶ <i>Great Hall 1&2</i>							
0915 - 1000	Plenary speaker presentation: Adding the chemical dimension to lithography at all scales: Enabling cellular therapies & other adventures in biology and medicine - 301 ▶ Prof Paul S Weiss, University of California, Los Angeles, United States Chair: Prof Paul Mulvaney, The University of Melbourne Room ▶ <i>Great Hall 1&2</i>							
1000 - 1030	Morning tea Room ▶ <i>Mezzanine level</i>							
1030 - 1230	Concurrent Session 4A	Concurrent Session 4B	Concurrent Session 4C	Concurrent Session 4D	Concurrent Session 4E	Concurrent Session 4F	Concurrent Session 4G	Concurrent Session 4H
Theme	BIONANO Room ▶ <i>Great Hall 1&2</i>	BIONANO Room ▶ <i>P1</i>	NANO ENERGY & ENVIRONMENT Room ▶ <i>P2</i>	NANO ENERGY & ENVIRONMENT Room ▶ <i>P3</i>	NANO ELECTRONICS Room ▶ <i>P4</i>	NANOMATERIALS Room ▶ <i>P5</i>	NANO CARBON Room ▶ <i>M1</i>	NANO ENERGY & ENVIRONMENT Room ▶ <i>M2</i>
Chair/s	Prof Mauri Kostianen and Dr Frank Sainsbury	Prof Nicolas Voelcker and Dr Run Zhang	Assoc Prof Jie Zhang	Dr Jing Tang	Assoc Prof Drew Evans	Dr Sejeong Kim	Prof Dan Li and Dr Rakesh Joshi	Dr Yi (Alex) Jia
			Sponsored by: NEWARE	Sponsored by: NEWARE				Sponsored by: NEWARE
1030 - 1045	Protein cages as building blocks for nanomaterials: Binary superlattices and DNA origami encapsulation - 302 ▶ Prof Mauri Kostianen, Aalto University, Finland	Leveraging light and electrons for the design of nanostructured biosensors - 309 ▶ Prof Nicolas Voelcker, Monash University, VIC	Designing earth-abundant nanostructured electrocatalysts for efficient and selective conversion of energy and chemicals - 315 ▶ Prof Song Jin, University of Wisconsin-Madison, United States	Three-dimensional nanostructuring of metal organic frameworks for energy applications - 320 ▶ Prof Antonio Tricoli, The Australian National University, ACT	Silicon-based quantum computing: The path from the laboratory to industrial manufacture - 325 ▶ Prof Andrew Dzurak, University of New South Wales, NSW	Metal halide perovskites at the nanoscale: High quality optoelectronic materials with unique functionality and distinctions from thin film perovskites - 330 ▶ Dr Joseph Luther, National Renewable Energy Laboratory, United States	Bulk nanostructured solids assembled from 2D soft carbon sheets - 337 ▶ Prof Jiaying Huang, Northwestern University, United States	Novel electrode materials design for rechargeable batteries (Na-ion, K-ion and Li-S batteries) - 347 ▶ Dr Dawei Su, University of Technology Sydney, NSW
1045 - 1100								Toward the efficient electrochemical synthesis of H₂O₂ through the surface modification of carbon nanotubes embedded with atomic Co-N_x sites - 348 ▶ Mr Qingran Zhang, University of New South Wales, NSW
1100 - 1115	Natural nanotechnology: protein encapsidation and delivery within virus-derived protein cages - 303 ▶ Dr Frank Sainsbury, Griffith University, QLD	Nanocrystalline particles for earlier detection of neurodegeneration - 310 ▶ Assoc Prof Olga Shimoni, University of Technology, Sydney, NSW	Stretchable gold nanowire epidermal energy devices - 316 ▶ Prof Wenlong Cheng, Monash University, VIC	Porphyrin 2D and 3D graphene assemblies as electrocatalysts for CO₂ reduction - 322 ▶ Prof David Officer, University of Wollongong, NSW	Scaling down channel dimensions in thin-film transistors: Challenges and prospects - 326 ▶ Prof Ananth Dodabalapur, The University of Texas at Austin, United States	Colloidal perovskite quantum dots for record-efficiency and phase stable solar cell - 331 ▶ Mr Mengmeng Hao, The University of Queensland, QLD	Solvation-involved nanoionics: New opportunities from graphene-based membranes - 338 ▶ Prof Dan Li, The University of Melbourne, VIC	Surface Li-depletion and the electronic band structure of olivine phosphates - 345 ▶ Prof Jose Alarco, Queensland University of Technology, QLD
1115 - 1130	Lipid-based nanomaterials for delivery of biopharmaceuticals - 304 ▶ Dr Charlotte Conn, RMIT University, VIC	A 10-minute universal cancer test based on interfacial biosensing - 311 ▶ Dr Abu Sina, The University of Queensland, QLD				Improve the wetting of Gold-ABA filler on micromachined diamond by using nano-metallic layers via vacuum brazing technique - 332 ▶ Miss Khaterah Edalati, The University of Melbourne, VIC	Drying of graphene hydrogel fibers for capacitive energy storage - 339 ▶ Prof Yuan Chen, The University of Sydney, NSW	

1130 - 1145	Biomimetic NanoZymes as promising photo-activatable antimicrobial agents and pro-drug therapies - 305 ▶ Prof Vipul Bansal, RMIT University, VIC	Responsive nano-biosensor for highly reactive biomarkers monitoring - 312 ▶ Dr Run Zhang, The University of Queensland, QLD	Nickle diselenide nanoparticles/carbon fiber paper as bifunctional electrocatalysts for highly efficient and stable water splitting - 317 ▶ Prof Shu Ping Lau, The Hong Kong Polytechnic University, Hong Kong	Liquid metals for breaking down bonds at room temperature and templating them into planar structures - 327 ▶ Prof Kourosh Kalantar-Zadeh, University of New South Wales, NSW	Mesoporous heteropoly acid as an electrode for lithium anion battery application - 333 ▶ Dr Hamid Ilbeygi, University of South Australia, SA	Application of GO/rGO membranes for purification and separation - 340 ▶ Dr Rakesh Joshi, University of New South Wales, NSW	Fluorolytic sol-gel route and electrochemical properties of AFeF₃ (A=Na,K,NH₄) perovskite nanoparticles and polyanionic transition metal phosphate fluorides - 346 ▶ Prof Nicola Pinna, Humboldt University of Berlin, Germany
1145 - 1200	Polymeric lipid nanoparticles encapsulating a synthetic peptide as an efficient cancer nanovaccine system - 306 ▶ Assoc Prof Sheikh Mohamed Mohamed, Toyo University, Japan	From ultrasensitive to single molecule biosensors that operate in complex biological fluids - 313 ▶ Prof Justin Gooding, University of New South Wales, NSW	Solution-processed semiconductor nanostructures for plasmonics and optoelectronics - 318 ▶ Dr Enrico Della Gaspera, RMIT University, VIC	Strong electric control of a single hole g-factor - 329 ▶ Mr Scott Liles, University of New South Wales, NSW	Single oxide and bimetallic oxide membrane for photo-electrocatalytic degradation of persistent organic pollutants in wastewater - 334 ▶ Miss Priyanka Kumari, Deakin University, VIC	Graphene oxide at soft interfaces: foams, emulsions and capsules - 341 ▶ Assoc Prof Rico Tabor, Monash University, VIC	
1200 - 1215	Switchable protein interfaces for controlled assembly of biomaterials - 307 ▶ Dr Dominic Glover, University of New South Wales, NSW		Near-infrared light photocatalysis over upconverting carbon nitride nanotubes - 319 ▶ Dr Yijiao Jiang, Macquarie University, NSW		Self-assembled nanostructures in ionic liquids facilitate charge storage at electrified interfaces - 335 ▶ Prof Rob Atkin, The University of Western Australia, WA	Isocyanate functionalised graphene for the facile development of graphene composites - 342 ▶ Dr Greg Ryder, University of Wollongong, NSW	
1215 - 1230	Liposomes as fuel for micromotors - 308 ▶ Mr Frederico Mazur, University of New South Wales, NSW						
1230 - 1330	Lunch Room ▶ <i>Mezzanine level</i>						
1245 - 1325	Lunch Q&A panel session - Women in leadership ▶ Prof Rose Amal, University of New South Wales, NSW ▶ Prof Bin Liu, National University of Singapore, Singapore ▶ Prof Amanda Ellis, The University of Melbourne, VIC Chair: Dr Cindy Gunawan Room ▶ <i>Great Hall 1&2</i>						

	Concurrent Session 5A	Concurrent Session 5B	Concurrent Session 5C	Concurrent Session 5D	Concurrent Session 5E	Concurrent Session 5F	Concurrent Session 5G	Concurrent Session 5H
Theme	BIONANO Room ▶ <i>Great Hall 1&2</i>	BIONANO Room ▶ <i>P1</i>	NANO ENERGY & ENVIRONMENT Room ▶ <i>P2</i>	NANO ENERGY & ENVIRONMENT Room ▶ <i>P3</i>	NANO ELECTRONICS Room ▶ <i>P4</i>	NANOMATERIALS Room ▶ <i>P5</i>	NANO CARBON Room ▶ <i>M1</i>	NANO ENERGY & ENVIRONMENT Room ▶ <i>M2</i>
Chair/s	Prof Michael Monteiro and Prof Cyrille Boyer	Dr Tushar Kumeria	Prof Antonio Tricoli	Dr Yijiao Jiang	Prof Madhu Bhaskaran		Prof Jun Ma and Dr Haifei Zhan	Dr Dawei Su
1330 - 1345	Synergy between Synthetic Antimicrobial Polymer and Antibiotics/Nitric Oxide - 349 ▶ Prof Cyrille Boyer, University of New South Wales, NSW	Flexible silicon carbide electronics for long-lived bio-implantable recording and sensing applications - 355 ▶ Dr Hoang Phuong Phan, Griffith University, QLD	Spectroscopy of single nanocrystals - 361 ▶ Prof Paul Mulvaney, The University of Melbourne, VIC	Fiber-based wearable energy storage devices- 367 ▶ Prof Zijian Zheng, The Hong Kong Polytechnic University, Hong Kong	Large-scale integrated platform for digital mass culture of adherent cells - 372 ▶ Prof Dae-Hyeong Kim, Seoul National University, South Korea	Epitaxy of transition metal dichalcogenides: The route to wafer-scale single crystal films - 378 ▶ Prof Joan Redwing, Penn State University, United States	Carbon-based nanomaterials and interlayers for spontaneous, reagent-free surface immobilisation of functional macromolecules - 385 ▶ Prof Marcela Bilek, The University of Sydney, NSW	Design and application of defects in electrocatalysis - 393 ▶ Dr Yi (Alex) Jia, Griffith University, QLD
1345 - 1400		NIR nanoscopy for imaging through deep tissue - 356 ▶ Dr Fan Wang, University of Technology Sydney, NSW					Multifunctional quantum dots for nanotheranostics and tissue engineering - 386 ▶ Prof Vincent Gomes, The University of Sydney, NSW	Electrochemical engineering of 2D materials for smart devices - 394 ▶ Dr Yu Lin Zhong, Griffith University, QLD
1400 - 1415	Preparation and characterisation of hydrogel biointerfaces - 350 ▶ Dr Jenny Malmstrom, University of Auckland, New Zealand	Single molecule imaging of T cell receptor signalling - 357 ▶ Prof Katharina Gaus, University of New South Wales, NSW	Electrochemical reduction of carbon dioxide - 362 ▶ Assoc Prof Jie Zhang, Monash University, VIC	Soft electronic devices using flexible, stretchable and mendable polymeric materials - 368 ▶ Asst Prof Wei Lin Leong, Nanyang Technological University, Singapore	Novel plasmonic nanomaterials for near infrared light energy conversion - 373 ▶ Prof Toshiharu Teranishi, Kyoto University, Japan	Electrospun zein nanofibrous membranes decorated with metal organic frameworks for formaldehyde adsorption - 379 ▶ Dr Yen Truong, CSIRO Manufacturing, VIC	Characterization of nano carbon at material interfaces - 387 Prof Cheng Yan, Queensland University of Technology, QLD	Tuning electrical properties of hybrid polymer/ ionic liquid electrospun nanofibers by ions exchange for air filtration - 395 ▶ Dr Ana Claudia Canalli Bortolassi, Deakin University, VIC
1415 - 1430	Advanced self-assembled biomimetic protein platform - 351 ▶ Prof Namita Roy Choudhury, RMIT University, VIC		Non-precious metal doped nanoporous carbon nanosheet for catalyzing oxygen reduction reaction - 366 ▶ Dr Jing Tang, The University of Queensland, QLD	Near-infrared absorbing acceptor improves the nanophase segregation of ternary organic photovoltaic blend with a performance of 12% - 369 ▶ Prof Chih-Ping Chen, Ming Chi University of Technology, Taiwan		A 'mild' method to make high-quality InP quantum dots- 383 ▶ Prof Thomas Nann, The University of Newcastle, NSW	Solvent-free synthesis of epoxy/graphene nanocomposites - 388 ▶ Prof Jun Ma, University of South Australia, SA	Integrating energy storage and piezoelectric devices for flexible and planar energy harvesting - 396 ▶ Dr Peter Sherrell, The University of Melbourne, VIC
1430 - 1445	Evaluation of nano drug carriers in 2D and 3D in vitro models - 352 ▶ Dr Hongxu Lu, University of Technology Sydney, NSW	Biodegradable silicon nanoparticles for multimodal bioimaging - 358 ▶ Dr Tushar Kumeria, The University of Queensland, QLD	Hollow carbon fiber arrays for improved electro-chemical and bio-electro-chemical systems - 363 ▶ Profo Xuyuan Chen, University of South-Eastern Norway, Norway		A method of patterning vertically aligned gold nanowire arrays for stretchable electrodes - 374 ▶ Dr Bowen Zhu, Westlake University, China	Synthesis of 2D materials using liquid metal solvents - 381 ▶ Dr Torben Daeneke, RMIT University, VIC	Room temperature compression of glassy carbon - 389 ▶ Dr Sherman Wong, RMIT University, VIC	

1445 - 1500	Next generation of nanoparticles - 353 ▶ Prof Michael Monteiro, The University of Queensland, QLD		Metal-organic frameworks as heterogeneous catalysts - 364 ▶ Prof Christian Doonan, The University of Adelaide, SA		Electric field control of molecular charge state in a single-component 2D organic nanoarray - 375 ▶ Mr Dhaneesh Kumar Gopalakrishnan, Monash University, VIC	Molecule-by-molecule positioning using template-guided self-assembly- 382 ▶ Assoc Prof Jennifer Macleod, Queensland University of Technology, QLD	Thermal resistance between carbon nanotreads - 390 ▶ Dr Haifei Zhan, Queensland University of Technology, QLD	
1500 - 1515					Multi-band visible and IR light emission from highly efficient Tetracene/PCPDTBT:Fullerene photodetectors - 376 ▶ Ms Tasnuva Hamid, Queensland University of Technology, QLD	Visible-light driven water oxidation from Large Area 2D MoS₂/WS₂ Heterojunctions - 380 ▶ Dr Peter Sherrell, The University of Melbourne, VIC	Control of structure-property relationships in polymer/graphene oxide nanocomposite films - 391 ▶ Dr Vipul Agarwal, University of New South Wales, NSW	
1515 - 1530					Stretchable broadband photodetector based on layered Black Phosphorus - 377 ▶ Ms Mei Xian Low, RMIT University, VIC		Thermo-mechanical properties of carbon nanotread and diamond nanotread reinforced-polymer composites - 392 ▶ Mr Chengkai Li, Queensland University of Technology, QLD	
1530 - 1600	Afternoon tea Room ▶ <i>Mezzanine level</i>							
1600 - 1845	Concurrent Session 6A	Concurrent Session 6B	Concurrent Session 6C	Concurrent Session 6D	Concurrent Session 6E	Concurrent Session 6F	Concurrent Session 6G	Concurrent Session 6H
Theme	BIONANO Room ▶ <i>Great Hall 1&2</i>	BIONANO Room ▶ <i>P1</i>	NANO ENERGY & ENVIRONMENT Room ▶ <i>P2</i>	NANO ENERGY & ENVIRONMENT Room ▶ <i>P3</i>	NANO ELECTRONICS Room ▶ <i>P4</i>	NANOMATERIALS Room ▶ <i>P5</i>	NANO CARBON Room ▶ <i>M1</i>	NANO COMPUTATION Room ▶ <i>M2</i>
Chair/s	Prof Leslie Yeo and Dr Meihua Yu	Dr Rona Chandrawati and Dr Soojung Hur	Dr Zhongfan Jia and Prof Wenjie Mai	Dr Haolan Xu	Dr Bowen Zhu	Prof Thomas Nann and Prof Colin Raston		Prof Elena Besley and Dr Mingchao Wang
1600 - 1615	Acoustic enhancement of intracellular delivery for ex vivo therapeutics - 400 ▶ Prof Leslie Yeo, RMIT University, VIC	Two-dimensional nanomaterials for sensing - 408 ▶ Dr Marlies Hankel, The University of Queensland, QLD	Nanostructured electrode materials for electrochemical energy storage and conversion - 416 ▶ Prof Guoxiu Wang, University of Technology Sydney, NSW	Graphitic carbon nitride-based composites for photocatalytic and photoelectrochemical water splitting - 425 ▶ Prof Shaobin Wang, The University of Adelaide, SA	Electroactive nanomaterials and their composites for smart responsive soft electronics - 433 ▶ Prof Pooi See Lee, Nanyang Technological University, Singapore	Emerging electrohydrodynamic approaches for versatile bioactive 3D interfaces - 441 ▶ Assoc Prof Menglin Chen, Aarhus University, Denmark	Carbon-based electrode materials for metal-ion batteries - 451 ▶ Prof Zaiping Guo, University of Wollongong, NSW	Computational design of organic semiconductors for light emitting diodes and solar cells - 460 ▶ Dr Denis Andrienko, Max Planck Institute for Polymer Research, Germany
1615 - 1630		Fluorescent nanodiamonds for correlative nanoscale cellular imaging - 409 ▶ Dr Philipp Reineck, RMIT University, VIC				Photoactive surfaces for infection control - 442 ▶ Miss Sheeana Gangadoo, RMIT University, VIC		

1630 - 1645	Development of highly immunogenic nanovaccines targeting human papillomavirus-associated cancers - 401 ▶ Dr Meihua Yu, The University of Queensland, QLD	Polymer- and lipid-based nanosensors for food and health monitoring - 410 ▶ Dr Rona Chandrawati, University of New South Wales, NSW	A fully recyclable battery cell design for sustainable environment - 417 ▶ Prof Shanjing Zhang, Griffith University, QLD	ZnO nanostructures for gas sensing of formaldehyde: effect of surface oxygen - 426 ▶ Prof Michelle Spencer, RMIT University, VIC	Polymer-assisted metal deposition for soft electronics - 434 ▶ Prof Zijian Zheng, The Hong Kong Polytechnic University, Hong Kong	Nanostructured materials in biomimetic systems - 443 ▶ Dr Dorna Esrafilzadeh, University of New South Wales, NSW	Spinifex nanocellulose as a potential carbon precursor for carbon fibre and anode material for rechargeable sodium-ion batteries - 452 ▶ Dr Pratheep Kumar Annamalai, The University of Queensland, QLD	Transport of partially delocalised charges and excitons - 461 ▶ Dr Ivan Kassal, The University of Sydney, NSW
1645 - 1700	Orchestrating human neural stem cell differentiation and cellular processes using engineered vertically aligned silicon nanowire arrays - 402 ▶ Mrs Esther Lestrell, Monash University, VIC					A surface study of self-assembled monolayer (SAM)-based solid contact (SC) polymeric ion sensors - 444 ▶ Prof Roland De Marco, University of the Sunshine Coast, QLD	One-dimensional van der waals heterostructures - 453 ▶ Mr Yongjia Zheng, The University of Tokyo, Japan	
1700 - 1715	Silk-nanodiamond-curcumin wound dressings for sensing infection - 403 ▶ Dr Amanda Abraham, RMIT University, VIC	Raman biomedical diagnostics made possible with custom-made gold nanostructured assemblies - 411 ▶ Dr Priyanka Dey, University of Exeter, United Kingdom	Nitroxide radical materials for organic energy storage - 419 ▶ Dr Zhongfan Jia, The University of Queensland, QLD	Improving interfacial solar steam generation by energy management - 428 ▶ Dr Haolan Xu, The University of South Australia, SA	Coherent spin control of s-, p-, d- and f-electrons in a silicon quantum dot - 436 ▶ Ross Leon, University of New South Wales, NSW	Nanofiber based dual functional enzymatic and thermo-responsive membranes for protein self-cleaning - 445 ▶ Dr Anbharasi Vanangamudi, Deakin University, VIC	Edge-functionalised graphene formulations as moldable electrode materials - 454 ▶ Dr Shaikh Nayeem Faisal, University of Wollongong, NSW	Graphene like carbon-nitride monolayer as the cathode of al-ion battery - 462 ▶ Mr Shaikat Debnath, The University of Queensland, QLD
1715 - 1730	Short break							
1730 - 1745	Prediction of peptide-driven exfoliation and assembly on 2D nanosheet materials - 404 ▶ Prof Tiffany Walsh, Deakin University, QLD	Microfluidic multimolecular delivery for personalized medicine - 412 ▶ Dr Soojung Hur, Johns Hopkins University, United States	Introduction of trace La into lithium-rich cathode materials towards long-cycling stability - 420 ▶ Dr Xiaobo Zhu, The University of Queensland, QLD	Enabling carbon nitride materials as lithium ion battery anode materials through fundamental understanding - 427 ▶ Dr Marlies Hankel, The University of Queensland, QLD	Stimuli-responsive nanoparticles for health, energy, and biosensing - 435 ▶ Prof T Randall Lee, University of Houston, United States	Porous upconversion nanostructures as multimodal contrast agent for biomedical imaging - 446 ▶ Miss Ziqing Du, University of Technology Sydney, NSW	Biomass-derived hard carbon materials for sodium-ion storage - 455 ▶ Prof George Zhao, The University of Queensland, QLD	Expanding the molecular computing tool-kit: iteration, smart biosensing, small molecule detection, and in vivo therapeutics - 463 ▶ Assoc Prof Joanne Macdonald, University of the Sunshine Coast, QLD
1745 - 1800						Homogeneous integration of carbon nanotubes in thermoplastics towards pressure-sensitive therapeutic insoles - 447 ▶ Ms Myra Ruth Poblete, University of New South Wales, ACT	Plasma made nanocarbons for energy applications - 456 ▶ Prof Kostya (Ken) Ostrikov, Queensland University of Technology, QLD	Crystal phase effect on the catalytic activity of gold through intrinsic strain - 464 ▶ Mr Lixiang Zhong, Nanyang Technological University, Singapore
1800 - 1815	Nature-inspired protection of highly sensitive 2D materials against ambient oxidation - 405 ▶ Prof Vipul Bansal, RMIT University, VIC	Development of high-throughput in vitro tumour models with microfabrication technologies - 413 ▶ Mr Guocheng Fang, University of Technology Sydney, NSW			Probing charge transfer across HIOS interface by nanowire conductance spectroscopy - 437 ▶ Dr Mykhailo Klymenko, RMIT University, VIC			

1815 - 1830	<p>The differentiation of osteocytes within a well-defined biomimetic synthetic polymer - 406</p> <p>▶ Ms Jung Un (Ally) Choi, The University of Queensland, QLD</p>	<p>Super-resolution in-depth imaging of single nanoparticles inside spheroids by near-infrared bessel-beam nanoscopy - 414</p> <p>▶ Mr Yongtao Liu, University of Technology Sydney, NSW</p>			<p>Silicon quantum processor unit cell operation above one Kelvin - 438</p> <p>▶ Dr Henry Yang, University of New South Wales, NSW</p>			
1830 - 1845		<p>Hydrogel platform with independently tailorable mechanical properties for directing stem cell fate - 415</p> <p>▶ Mr Diwei Ho, The University of Western Australia, WA</p>						
1845 - 2000	<p>Poster session Room ▶ <i>Mezzanine level</i></p>							

Wednesday 12 February 2020

0730 - 1900	Registration and information desk open							
0830 - 0915	Plenary speaker presentation: Harnessing solar energy through nano-catalysts for power to X - 500 ▶ Prof Rose Amal, University of New South Wales, NSW Chair: Prof Huijun Zhao, Griffith University Room ▶ <i>Great Hall 1&2</i>							
0915 - 1000	Plenary speaker presentation: Beyond charge currents: Spin and ion currents for future data storage and computing technologies - 501 ▶ Prof Stuart Parkin, Max Planck Institute of Microstructure Physics, Germany Chair: Room ▶ <i>Great Hall 1&2</i>							
1000 - 1030	Morning tea Room ▶ <i>Mezzanine level</i>							
1030 - 1230	Concurrent Session 7A	Concurrent Session 7B	Concurrent Session 7C	Concurrent Session 7D	Concurrent Session 7E	Concurrent Session 7F	Concurrent Session 7G	Concurrent Session 7H
Theme	BIONANO Room ▶ <i>Great Hall 1&2</i>	NANO CHARACTERISATION & MANUFACTURING Room ▶ <i>P1</i>	NANO ENERGY & ENVIRONMENT Room ▶ <i>P2</i>	NANO ENERGY & ENVIRONMENT Room ▶ <i>P3</i>	NANO ELECTRONICS Room ▶ <i>P4</i>	NANOMATERIALS Room ▶ <i>P5</i>	NANO PHOTONICS Room ▶ <i>M1</i>	NANO CARBON Room ▶ <i>M2</i>
Chair/s	Prof Nam-Trung Nguyen and Prof Kirill Alexandrov	Prof Jin Zou	Dr Dongchen Qi	Dr Xunyu Lu	Prof Xiaoke Yi		Dr Baohua Jia	Prof Joe Shapter and Dr Xin Wang
			Sponsored by: NEWARE NEWARE	Sponsored by: NEWARE NEWARE			Sponsored by: <small>Australian Research Council Centre of Excellence in</small> exciton science	
1030 - 1045	Connecting biology and electronics with artificial protein switches - 502 ▶ Prof Kirill Alexandrov, Queensland University of Technology, QLD	HAADF-STEM study of local lattice strain in gold nanoparticles - 508 ▶ Prof Syo Matsumura, Kyushu University, Japan	Energy storage in thin film graphene-based supercapacitors as a function of the accessible surface area - 515 ▶ Prof Nunzio Motta, Queensland University of Technology, QLD	Metal-organic framework composite membranes for molecular and ionic separations - 521 ▶ Prof Huanting Wang, Monash University, VIC	Topological transitions, chiral majorana fermion, and quantum computing - 527 ▶ Dr Kang Wang, University of California, Los Angeles, United States	High aspect ratio β-Ga2O3 nanostructures: MacEtch, passivation, and devices - 534 ▶ Prof Xiuling Li, University of Illinois, United States	Nanostructured metasurfaces for vortex generation, multiplexing and lasing - 541 ▶ Prof Cheng-Wei Qiu, National University of Singapore, Singapore	Nanoscale design of carbons for electronic applications - 548 ▶ Prof Ravi Silva, University of Surrey, United Kingdom
1045 - 1100								
1100 - 1115	Highly porous superparamagnetic nanoparticle-assisted nanomachineries for molecular biomarker detection - 503 ▶ Dr Muhammad Shiddiky, Griffith University, QLD	Graphene electrode of porous structure for supercapacitor and battery application - 509 ▶ Prof Jie Tang, National Institute For Materials Science, Japan	Thermoelectric materials and devices for high-efficiency energy conversion - 516 ▶ Prof Zhi-gang Chen, University of Southern Queensland, QLD	Metallic glasses: A new type of environmental and low-cost catalysts - 524 ▶ Prof Laichang Zhang, Edith Cowan University, WA	Regaining a lost dimension – from InAs nanowires to InAs nanofin hall bars by templated epitaxy - 528 ▶ Mr Jakob Seidl, University of New South Wales, NSW	Conformal oxide electronics for sensing applications - 535 ▶ Prof Madhu Bhaskaran, RMIT University, VIC	Anomalous power dependence of lanthanide-doped upconversion nanoparticles for super-resolution multiphoton microscopy - 542 ▶ Dr Yiqing Lu, Macquarie University, NSW	Enhancing solar cells and catalysts using carbon nanomaterials - 549 ▶ Prof Joe Shapter, The University of Queensland, QLD
1115 - 1130	Using thermoelectric heating-assisted electrohydrodynamic evaporation and centrifugation device to develop micro-concentrator to detect salmollena in food samples using raman tags - 504 ▶ Prof Shau-Chun (Paul) Wang, National Chung Cheng University, Taiwan	Synthesis of novel carbon-based materials using extreme conditions - 510 ▶ Prof Dougal McCulloch, RMIT University, VIC	Enhancement of electrocatalytic activity by surface dopant - 517 ▶ Dr Porun Liu, Griffith University, QLD	Nanoporous materials for energy and environmental related applications - 525 ▶ Dr Siddulu Naidu Talapaneni, The University of Newcastle, NSW	Interplay of aharonov-bohm interference and signatures of majorana fermions - 529 ▶ Mr Tommy Bartolo, RMIT University, VIC	Seeded gold nanorod growth proceeds via formation of an autocatalytic surface - 536 ▶ Dr Susanne Seibt, RMIT University, VIC	Nanoscale optical bio-sensing and imaging with diamond quantum probes - 543 ▶ Dr David Simpson, The University of Melbourne, VIC	Immobilising carbon nanomaterials in fibrous system for wearable applications - 550 ▶ Dr Xin Wang, RMIT University, VIC

1130 - 1145	<p>Liquid marbles and liquid core/shell beads: toward liquid bead based digital microfluidics - 505</p> <p>► Prof Nam-Trung Nguyen, Griffith University, QLD</p>	<p>Direct observation and impact of co-segregated atoms in magnesium containing multiple alloying elements - 511</p> <p>► Prof Jian-Feng Nie, Monash University, VIC</p>	<p>CO2 electrolysis in seawater - 518</p> <p>► Dr Chong-Yong Lee, University of Wollongong, NSW</p>	<p>Molecular driven membranes for clean energy separation - 523</p> <p>► Dr Colin Scholes, The University of Melbourne, VIC</p>	<p>Distinct modes of filament formation in Niobium Oxide - 530</p> <p>► Mr Shimul Kanti Nath, The Australian National University, ACT</p>	<p>Defect-free beta-Ga2O3 nanowires grown by the vapour-liquid-solid process - 537</p> <p>► Mr Curtis Irvine, University of Technology Sydney, NSW</p>	<p>Why upconversion quenching is observed in Au nanoparticles-doped glass? - 544</p> <p>► Dr Yunle Wei, University of Adelaide, SA</p>	<p>Laser reduced graphene fundamentals and sensor application - 551</p> <p>► Mr Zhengfen Wan, Griffith University, QLD</p>
1145 - 1200		<p>Unravelling the microstructure of multi-cation mixed halide perovskites - 512</p> <p>► Assoc Prof Jennifer Wong-Leung, The Australian National University, ACT</p>			<p>Engineering InGaAs nanowire composition by selective area metal organic vapour phase epitaxy - 531</p> <p>► Ms Zahra Azimi, The Australian National University, ACT</p>	<p>ALD of transition metal di- and tri-chalcogenides with morphology and phase control - 538</p> <p>► Prof Ageeth Bol, Eindhoven University of Technology, Netherlands</p>	<p>Quantum sensing with a single erbium ion in silicon - 545</p> <p>► Dr Chunming Yin, University of New South Wales, NSW</p>	<p>Printing of recyclable, flexible and transparent piezoelectric generators through SWCNT templating - 552</p> <p>► Mr Nick Shepelin, The University of Melbourne, VIC</p>
1200 - 1215					<p>Nanowires, quantum phase slips and electromagnetic duality in quantum circuits - 532</p> <p>► Prof Jared Cole, RMIT University, VIC</p>	<p>Micro-solid bubble assembly for ultralight, strong, and superelastic materials - 539</p> <p>► Prof Pil Jin Yoo, Sungkyunkwan University, South Korea</p>	<p>Photon emission enhancement of praseodymium ions implanted with GaN nanopillars - 546</p> <p>► Dr Shin-ichiro Sato, National Institutes For Quantum And Radiological Science And Technology, Japan</p>	<p>Neuromorphic properties of amorphous carbon-based memristors - 553</p> <p>► Mr Thomas Raeber, RMIT University, VIC</p>
1215 - 1230							<p>2D freestanding janus gold plasmene nanosheets - 547</p> <p>► Dr Qianqian Shi, Monash University, VIC</p>	<p>Quantum resistive sensors made of graphene and metal organic frameworks for VOC biomarkers analysis - 554</p> <p>► Dr Tung Tran, The University of Adelaide, SA</p>
1230 - 1330	<p>Lunch Room ► <i>Mezzanine level</i></p>							
1245 - 1325	<p>Lunch Q&A panel session - Getting your first job</p> <p>► Prof Alan Rowan, The University of Queensland, QLD</p> <p>► Prof Joe Shapter, The University of Queensland, QLD</p> <p>► Prof Chennupati Jagadish, Australian Nanotechnology Network, The Australian National University, ACT</p> <p>Chair: Dr Munkhbayar Batmunkh</p> <p>Room ► <i>Great Hall 1&2</i></p>							

1330 - 1500	Concurrent Session 8A		Concurrent Session 8C	Concurrent Session 8D	Concurrent Session 8E	Concurrent Session 8F	Concurrent Session 8G	Concurrent Session 8H
Theme	BIONANO Room ► <i>Great Hall 1&2</i>		NANO ENERGY & ENVIRONMENT Room ► <i>P2</i>	NANO ENERGY & ENVIRONMENT Room ► <i>P3</i>	NANO ELECTRONICS Room ► <i>P4</i>	NANOMATERIALS Room ► <i>P5</i>	NANO PHOTONICS Room ► <i>M1</i>	NANO CARBON Room ► <i>M2</i>
Chair/s	Prof Andrea O'Connor and Dr Hang Ta		Dr Chong-Yong Lee	Dr Porun Liu	Dr Qianqian Shi	Prof Madhu Bhaskaran	Dr Qianqian Shi	Assoc Prof Kate Fox and Dr Carlo Bradac
1330 - 1345	Organic-inorganic antimicrobial nanomaterials: synthesis, characterisation and applications in tissue engineering and medical devices - 555 ► Prof Andrea O'Connor, The University of Melbourne, VIC		Hybrid materials and heterostructures for high-performance electronics - 565 ► Prof Tom Wu, University of New South Wales, NSW	III-V nanowires for optoelectronic device and energy applications - 570 ► Prof Hoe Tan, The Australian National University, ACT	Electronic transport properties of epitaxial graphene on silicon substrates - 575 ► Prof Francesca Iacopi, University of Technology Sydney, NSW	Integration of nanocomposites and nanohybrids for catalytic applications - 581 ► Prof Hua Chun Zeng, National University of Singapore, Singapore	Graphene metamaterials and functional devices- 586 ► Prof Baohua Jia, Swinburne University of Technology, VIC	Hybrid nanodiamond materials: the present and future - 591 ► Prof Brant Gibson, RMIT University, VIC
1345 - 1400					Skin-conformable and stretchable supercapacitors with Janus vertical gold nanowires - 576 ► Mr Tiance An, Monash University, VIC			Group IV color centres in diamond for quantum photonics - 592 ► Prof Igor Aharonovich, University of Technology Sydney, NSW
1400 - 1415	Leveraging molecular order of highly porous metal organic framework (MOF) nanoparticles for pulmonary drug delivery - 556 ► Asst Prof Catherine Fromen, University of Delaware, United States		Controllable growth of Cu₂ZnSnSe₄ thin film by magnetron sputtering method and solar cell - 567 ► Prof Yi Zhang, Nankai University, China	Rationally designed metal and carbon composites for efficient electrocatalysis - 571 ► Dr Xunyu Lu, University of New South Wales, NSW	Defect induced optoelectronic applications of layered black phosphorus - 577 ► Dr Taimur Ahmed, RMIT University, VIC	Vortex fluidic mediated synthesis polysulfone for membrane applications - 582 ► Mr Aghil Igder, Edith Cowan University, WA	MEMS-based photonic coupler - 587 ► Mrs Shubhashree Swain, The University of Western Australia, WA	Diamond as a medical material - 593 ► Assoc Prof Kate Fox, RMIT University, VIC
1415 - 1430	Iron oxide based nanomaterials for diagnosis and treatment of cardiovascular disease - 557 ► Dr Hang Ta, The University of Queensland, QLD			Surface and interface engineering of 2D material-based nanostructures toward electrocatalysis applications - 572 ► Dr Wenping Sun, University of Wollongong, NSW	Fidelity benchmarks for two-qubit gates in silicon - 578 ► Dr Wister Wei Huang, University of New South Wales, NSW	Modulating aptamer-NanoZyme (nanoparticles with enzyme-mimic catalytic activity) interactions for the development of colorimetric sensors - 583 ► Dr Rajesh Ramanathan, RMIT University, VIC	Investigation of band alignment in plasmonically enhanced hot-electron devices - 588 ► Mr Shenyou Zhao, The Australian National University, ACT	Anti-stokes excitation of solid-state quantum emitters for nanoscale sensing - 594 ► Dr Carlo Bradac, University of Technology Sydney, NSW
1430 - 1445	Genetically encoded nanosilver resistance in priority pathogen - 558 ► Dr Cindy Gunawan, University of Technology Sydney, NSW		Erasable and recreatable two-dimensional electron gas at the heterointerface of SrTiO₃ and a water-dissolvable overlayer - 568 ► Asst Prof Xiao Renshaw Wang, Nanyang Technological University, Singapore	Alternative pathways for the conversion of carbon dioxide into fuels - 573 ► Dr Emma Lovell, University of New South Wales, NSW	High quantum efficiency SWIR HgCdTe detectors - 579 ► Dr Nima Dehdashtiakhavan, University of Western Australia, WA	Cobalamins as reactive surface enhanced raman probes for the detection & quantification of sulphite - 584 ► Mr Paul Denman, The University of Queensland, QLD	Perovskite and plasmonic nanophotonics and optoelectronics - 589 ► Dr Dong Ha Kim, Ewha Womans University, South Korea	Nanostructuring dynamics of deep-UV laser etched diamond surfaces - 595 ► Dr Amanuel Berhane, University of New South Wales, NSW
1445 - 1500	Re-programming bacterial nanocompartments into photosensitizing nanoparticles - 559 ► Dr Andrew Care, Macquarie University, NSW		Characterising interfaces with synchrotron-based soft x-ray spectroscopy - 569 ► Dr Dongchen Qi, Queensland University of Technology, QLD	Electronic and optoelectronic properties of 2D germanene - 574 ► Assoc Prof Yi Du, University of Wollongong, NSW	Synthesis of 2D GaN and InN using liquid metal solvents - 580 ► Dr Torben Daeneke, RMIT University, VIC			Fluorescence properties of hydrogenated detonation nanodiamonds - 596 ► Mr Giannis Thalassinou, RMIT University, VIC
1500 - 1530	Afternoon tea Room ► <i>Mezzanine level</i>							

1530 - 1745	Concurrent Session 9A	Concurrent Session 9B	Concurrent Session 9C	Concurrent Session 9D	Concurrent Session 9E	Concurrent Session 9F	Concurrent Session 9G	Concurrent Session 9H
Theme	BIONANO Room ► <i>Great Hall 1&2</i>	NANO CHARACTERISATION & MANUFACTURING Room ► <i>P1</i>	NANO ENERGY & ENVIRONMENT Room ► <i>P2</i>	NANO ENERGY & ENVIRONMENT Room ► <i>P3</i>	NANO ELECTRONICS Room ► <i>P4</i>	NANOMATERIALS Room ► <i>P5</i>	NANO PHOTONICS Room ► <i>M1</i>	NANO CHARACTERISATION & MANUFACTURING Room ► <i>M2</i>
Chair/s	Prof Christopher Barner-Kowollik and Dr Alison White	Assoc Prof Dzung Dao	Dr Emma Lovell	Dr Wenping Sun	Prof Wenlong Cheng	Prof Gordon Xu	Dr Mohsen Rahmani	Prof Jian-Feng Nie
1530 - 1545	Nanocellulose-derived materials - 597 ► Dr Nasim Amiralian, The University of Queensland, QLD	Toughening polymer composites at cryogenic temperatures using nanoparticles - 604 ► Prof Chun-Hui Wang, University of New South Wales, NSW	Halide perovskite nanocrystals: From platelets to supercrystals - 611 ► Prof Jochen Feldmann, LMU Munich, Germany	Molecular design for hybrid perovskites – from passive to active - 619 ► Prof Yeng Ming Lam, Nanyang Technological University, Singapore	Plasmonics-enhanced terahertz devices and systems - 627 ► Prof Mona Jarrahi, University of California Los Angeles, United States	Theoretical investigations on coordination structures for high-performance thermoelectric applications - 636 ► Dr Shuo-Wang Yang, Institute of High Performance Computing, Singapore	Plasmon excitation and outcoupling in quantum mechanical tunnel junctions - 644 ► Prof Christian Nijhuis, National University of Singapore, Singapore	Analysis of nanomaterial properties using in situ TEM techniques - 652 ► Prof Dmitri Golberg, Queensland University of Technology, QLD
1545 - 1600	Design and fabrication of multifunctional nanomaterials and their application in nanomedicine - 598 ► Dr Sang Eun Hong, Hannam University, South Korea				Vapour deposited PEDOT and its interaction with anions - 628 ► Assoc Prof Drew Evans, University of South Australia, SA	Label-free SERS nanosensor for the detection of Insulin in biological fluids - 637 ► Ms Saiqa Muneer, Queensland University of Technology, QLD		
1600 - 1615	Towards dual-purpose microcapsules with an impermeable shell - 599 ► Dr Alison White, The University of Queensland, QLD	MEMS-based optical filters for spectrally adaptive remote sensing from visible, through infrared, to terahertz - 605 ► Assoc Prof Mariusz Martyniuk, The University of Western Australia, WA	Efficient water splitting cascade photoanodes based on BiVO₄ - 612 ► Prof Ho Won Jang, Seoul National University, South Korea	Large area InP nanopillars for solar energy conversion - 620 ► Prof Hoe Tan, The Australian National University, ACT	Transition metal dichalcogenides for optoelectronic devices - 629 ► Prof Soo Young Kim, Korea University, South Korea	NanoZymes as an alternative antibacterial to conventional antibiotics - 638 ► Mrs Pyria Rose Divina Mariathomas, RMIT University, VIC	Towards plasmonic control of nitrogen-vacancy center fluorescence in nanodiamonds via metal nanoparticle self-assembly - 646 ► Dr Philipp Reineck, RMIT University, VIC	Graphene plasmon for surface-enhanced infrared spectroscopy - 653 ► Prof Qing Dai, National Centre of Nanoscience & Technology, China
1615 - 1630	A (super) bug's life: Antimicrobial particles as next generation antimicrobial strategies - 600 ► Dr James Chapman, RMIT University, VIC	Enhanced stretchability of piezoelectric polymer by boron nitride nanosheets - 606 ► Dr Jin Zhang, University of New South Wales, NSW		Molecular engineering of hole transporting materials for low cost highly efficient and stable perovskite solar cells - 621 ► Prof Prashant Sonar, Queensland University of Technology, QLD	Analysing the growth modes of vdW/graphene heterostructures as a function of the substrate - 630 ► Prof Nunzio Motta, Queensland University of Technology, QLD	Synthesis of a biodegradable-pH sensitive self-assembled polymeric theranostics for hepatic fibrosis - 639 ► Mr Arunpandian Balaji, The University of Queensland, QLD	Optical fingerprints of single nanoparticles for deep learning aided super-capacity optical multiplexing - 647 ► Miss Jiayan Liao, University of Technology Sydney, NSW	Local electronic property of two-dimensional materials revealed by SPM - 654 ► Prof Mingdong Dong, Aarhus University, Denmark
1630 - 1645	Approaches and perspectives of nanoclays in agriculture advancement - 601 ► Dr Peng Li, The University of Queensland, QLD	Characterising interfacial adhesion using FIB-based micro/nano-mechanical testing methodologies - 607 ► Dr Mingyuan Lu, The University of Queensland, QLD	Spintronics based on 2D ferromagnetic materials and van der waals heterostructures - 614 ► Assoc Prof Lan Wang, RMIT University, VIC	Design of nano-layer for beyond 10% efficient green kesterite solar cells - 622 ► Dr Xiaojing Hao, University of New South Wales, NSW	Models for electron transport in the two-dimensional allotropes of bismuth - 631 ► Dr Jackson Smith, RMIT University, VIC	Porous poly(2-hydroxyethyl methacrylate) (PHEMA) hydrogels doped with silver nanoparticles – one-step synthesis, characterisation, antibacterial efficacy and biocompatibility - 640 ► Prof Murray Baker, The University of Western Australia, WA	Making dark plasmonic modes visible with an electron beam - 648 ► Dr Saskia Fiedler, University of Southern Denmark, Denmark	In situ etching and functionalization of two-dimensional materials - 655 ► Assoc Prof Charlene Lobo, University of Technology Sydney, NSW

1645 - 1700	<p>Making light work of adaptive micro- and nanomaterial design - 602</p> <p>► Prof Christopher Barner-Kowollik, Queensland University of Technology, QLD</p>	<p>Bio-fluorometric gas sensing and imaging of human volatiles (Bio-sniffer & Sniff-cam) - 608</p> <p>► Prof Kohji Mitsubayashi, Tokyo Medical and Dental University, Japan</p>	<p>Shape matters: From one-dimensional nanorods to two dimensional nanosheets - 615</p> <p>► Dr Guohua Jia, Curtin University, WA</p>	<p>Solution-less Perovskite Photovoltaics: from the nanoscale to industry - 623</p> <p>► Dr Gregory Wilson, CSIRO Energy, NSW</p>	<p>Nanowire-based monolithic complementary proton-to-electron transducer using electron beam patterned nafion gates - 632</p> <p>► Prof Adam Micolich, University of New South Wales, NSW</p>	<p>Development of Probe-Mediated SERS Sensors for the Detection of Hydrogen Sulfide using Zinc Phthalocyanine-Functionalized Core-Satellite Nanoassemblies - 641</p> <p>► Mr Josua Markus, The University of Queensland, QLD</p>	<p>Nanoscale effects of gigahertz light on genomic DNA - 649</p> <p>► Mr Nicholas Lawler, University of Western Australia, WA</p>		
1700 - 1715		<p>Ultrasensitive thermal sensing technology utilising SiC/Si nanoheterojunction - 609</p> <p>► Dr Toan Dinh, Griffith University, QLD</p>			<p>Transport properties of a two-dimensional electron gas with spin-orbit coupling - 633</p> <p>► Mr Yik Kheng Lee, RMIT University, VIC</p>				
1715 - 1730		<p>Neutralised electrohydrodynamic for biomedical and micromechatronic application - 610</p> <p>► Dr Van Dau, Griffith University, QLD</p>			<p>Self-powered chemical sensing with light-activated halides perovskites - 634</p> <p>► Dr Hongjun Chen, The Australian National University, ACT</p>				
1730 - 1745		<p>Fast Atomic Sequential Technology (F.A.S.T.®): Bridging ALD and PECVD for higher deposition rates and conformality - 660</p> <p>► Mr Marco Notarianni, Plasma-therm, United States</p>			<p>Metal contacts on mesoporous silicon for MEMS based thermo-resistive sensors - 635</p> <p>► Mrs Pritam Sharma, University of Western Australia, WA</p>				
1900 - 2300	<p>Conference dinner Room ► <i>Great Hall 3&4</i></p>								

Thursday 13 February 2020

0730 - 1630	Registration and information desk open							
0815 - 1000	Concurrent Session 10A	Concurrent Session 10B	Concurrent Session 10C	Concurrent Session 10D	Concurrent Session 10E	Concurrent Session 10F	Concurrent Session 10G	Concurrent Session 10H
Theme	BIONANO Room ▶ <i>Great Hall 1&2</i>	NANO CHARACTERISATION & MANUFACTURING Room ▶ <i>P1</i>	NANO ENERGY & ENVIRONMENT Room ▶ <i>P2</i>	NANO ENERGY & ENVIRONMENT Room ▶ <i>P3</i>	NANOMATERIALS Room ▶ <i>P4</i>	NANOMATERIALS Room ▶ <i>P5</i>	NANO PHOTONICS Room ▶ <i>M1</i>	BIONANO Room ▶ <i>M2</i>
Chair/s	Prof Gregor Lang and Dr Jess Frith	Assoc Prof Ling Yin	Dr Cui Ying Toe	Dr Yang Bai		Assoc Prof Jennifer Macleod	Dr Alison Funston	Prof Rebecca Ford
			Sponsored by: NEWARE NEWARE				Sponsored by: <small>Australian Research Council Centre of Excellence in</small> exciton science	
0815 - 0830		Fundamental investigations of diamond wire sawing of silicon wafers - 705 ▶ Prof Shreyes Melkote, Georgia Institute of Technology, United States						
0830 - 0845	Hydrogel delivery of miRNAs to modulate mesenchymal stromal cell mechanotransduction and enhance bone formation - 700 ▶ Dr Jess Frith, Monash University, VIC		Electrode design for rechargeable sodium-oxygen batteries - 712 ▶ Dr Bing Sun, University of Technology Sydney, NSW	Phenyl ester based homopolymers: promising photoactive substrates for spatial arrangement of block copolymer nanopatterns - 718 ▶ Dr Jiacheng Zhao, The University of Queensland, QLD	Multiplexed intermediate states saturation nanoscopy by Fourier spectral fusion - 727 ▶ Mr Chaohao Chen, University of Technology Sydney, NSW	Understanding wetting of 2D materials - 729 ▶ Prof Sushanta Mitra, Waterloo Institute for Nanotechnology, Canada	Super-transport of excitons in atomically thin organic semiconductors at the 2D quantum limit - 737 ▶ Dr Ankur Sharma, The Australian National University, ACT	Specific and sensitive nanoparticle-based electrochemical detection of Botrytis cinerea, a damaging fungal plant pathogen - 739 ▶ Prof Rebecca Ford, Griffith University, QLD
0845 - 0900		Silicon and silicon carbide MEMS sensors and actuators - 706 ▶ Assoc Prof Dzung Dao, Griffith University, QLD	New intercalation cathodes for aluminium-ion batteries - 713 ▶ Mr Nicolo Canever, The University of Newcastle, NSW	Co-sputtered nanofins for polarization and angular control - 719 ▶ Assoc Prof Matthew Arnold, University of Technology Sydney, NSW	Defecting metal oxides with light to boost their oxidative capacity - 728 ▶ Assoc Prof Jason Scott, University of New South Wales, NSW		Polarization dependent quantum correlation measurements of two single photon emitters - 738 ▶ Mr Davin Yue Ming Peng, RMIT University, VIC	Novel carbon-based fluorescent nanomaterials for biosensing and bioimaging application - 740 ▶ Mr Pooria Lesani, The University of Sydney, NSW
0900 - 0915	Colloidal mesoporous silica nanoparticles as strong adhesives for hydrogels and biological tissues - 701 ▶ Assoc Prof Gi-ra Yi, Sungkyunkwan University, South Korea	Advanced micro tube forming technology - 707 ▶ Prof Ken-ichi Manabe, Tokyo Metropolitan University, Japan	Rechargeable aluminum-selenium batteries - 714 ▶ Dr Xiaodan Huang, The University of Queensland, QLD	Lead-free halide perovskites and variants for low-cost optoelectronic and electronic device applications - 720 ▶ Dr Miaoqiang Lyu, The University of Queensland, QLD	Photopatterning of graphene oxide and other two-dimensional materials for highly integrated multifunctional devices - 725 ▶ Prof Baohua Jia, Swinburne University of Technology, VIC	Green synthesis of zeolitic imidazolate framework nanopowders and their water related applications - 730 ▶ Mr Mahdiar Taheri, The Australian National University, ACT	Suppression of spectral diffusion by anti-stokes excitation of quantum emitters in hexagonal boron nitride - 735 ▶ Dr Trong Toan Tran, University of Technology Sydney, NSW	A novel lateral flow immunoassay for celiac disease detection - 741 ▶ Miss Huan Wu, University of Technology Sydney, NSW
0915 - 0930	Recombinant spider silk films and hydrogels with intrinsic bacteriostatic and fungistatic properties - 702 ▶ Prof Gregor Lang, University of Bayreuth, Germany	Solvothermal synthesis and performance engineering of Cu₂(Se,S)-based thermoelectric materials - 709 ▶ Mr Weidi Liu, The University of Queensland, QLD	Next-generation energy system: low-cost aluminum-ion batteries and solar-rechargeable batteries - 715 ▶ Dr Yuxiang Hu, The University of Queensland, QLD				Direct-measurement of the quantum efficiency of single photon emitters in few-layer hexagonal boron nitride - 736 ▶ Mr Noah Mendelson, University of Technology Sydney, NSW	Engineered biopolyester beads as a tool for specific detection of global DNA methylation - 742 ▶ Mr Narshone Soda, Griffith University, QLD

0930 - 0945	<p>Application of micro/nano scale substrates for skeletal muscle tissue regeneration - 703</p> <p>► Dr Sahar Salehi, University of Bayreuth, Germany</p>	<p>Combined bottom-up and top-down approaches in 3D printing - 710</p> <p>► Dr Rouhollah Jalili, University of New South Wales, NSW</p>	<p>Understanding the formation and dynamic nature of non-noble-metal oxide co-catalysts for photocatalytic water splitting reactions - 716</p> <p>► Dr Alexey Cherevan, Vienna University of Technology, Austria</p>					<p>A novel Raman reporter for the nanosensing of proteins through their disulfide bond structure - 743</p> <p>► Mrs Mahnaz Davoudzadeh Gholami, Queensland University of Technology, QLD</p>
0945 - 1000	<p>Employing recombinant venom proteins in combination with a synthetic hydrogel to control bleeding after major trauma - 704</p> <p>► Dr Amanda Kijas, The University of Queensland, QLD</p>	<p>Nanomechanical characterizations of ceramic coatings deposited using laser cladding - 711</p> <p>► Mr Yitian Zhao, The University of Queensland, QLD</p>	<p>Construction of Au NPs/P-C3N4 heterojunction for high-performance photoelectrocatalytic monitoring and degradation of 4-chlorophenol - 717</p> <p>► Dr Lei Shi, Edith Cowan University, WA</p>					
1000 - 1030	<p>Morning tea Room ► <i>Mezzanine level</i></p>							
1030 - 1200	Concurrent Session 11A	Concurrent Session 11B	Concurrent Session 11C	Concurrent Session 11D	Concurrent Session 11E	Concurrent Session 11F	Concurrent Session 11G	Concurrent Session 11H
Theme	BIONANO Room ► <i>Great Hall 1&2</i>	NANO CHARACTERISATION & MANUFACTURING Room ► <i>P1</i>	NANO ENERGY & ENVIRONMENT Room ► <i>P2</i>	NANO ENERGY & ENVIRONMENT Room ► <i>P3</i>	NANOMATERIALS Room ► <i>P4</i>	NANOMATERIALS Room ► <i>P5</i>	NANO PHOTONICS Room ► <i>M1</i>	BIONANO Room ► <i>M2</i>
Chair/s	Prof Stephen Kent	Dr Damon Kent	Dr Bing Sun	Dr Munkhbayar Batmunkh	Prof Baohua Jia	Prof Zhenxiang Cheng	Dr Fan Wang	Prof David Nisbet and Dr Melanie Stamp
1030 - 1045	<p>Protein nanoparticle vaccines and interactions with immune cells - 745</p> <p>► Prof Stephen Kent, The University of Melbourne, VIC</p>	<p>NMI's nanoparticle characterisation facility: supporting accurate and reproducible nanotechnology research and commercialisation - 748</p> <p>► Dr Åsa Jämting, National Measurement Institute, NSW</p>	<p>ZnO nanocrystal facet-dependence of Au photodeposition and catalytic activity - 754</p> <p>► Assoc Prof Eric Waclawik, Queensland University of Technology, QLD</p>	<p>Co-creation with citizens and stakeholders in the development of nanotechnologies in energy applications - 760</p> <p>► Assoc Prof Paul Wright, RMIT University, VIC</p>	<p>Application of large-area hexagonal boron nitride for SERS - 766</p> <p>► Prof Hoe Tan, The Australian National University, ACT</p>	<p>Quantum emitters in atomically thin materials - 771</p> <p>► Prof Igor Aharonovich, University of Technology Sydney, NSW</p>	<p>High-throughput synthesis of silicon particles with optical magnetism - 776</p> <p>► Dr Glenna Drisko, Institute for Solid State Chemistry Bordeaux, France</p>	<p>3D printing and nanomaterials - 782</p> <p>► Assoc Prof Kate Fox, RMIT University, VIC</p>
1045 - 1100		<p>Environmental photoelectron yield spectroscopy - 749</p> <p>► Dr John Scott, University of Technology Sydney, NSW</p>	<p>Photocatalytic performances of copper-based photocatalysts with well-defined morphologies - 755</p> <p>► Dr Cui Ying Toe, University of New South Wales, NSW</p>	<p>Manipulation of internal chemistry of transition metals compounds for enhanced electrochemical processes - 761</p> <p>► Dr Nasir Mahmood, RMIT University, VIC</p>	<p>In the curl: Interface-mediated formation of polymer/mineral composite micro scrolls - 767</p> <p>► Ms Viktoria Gruen, University of Bayreuth, Germany</p>		<p>Energy transfer in single quantum dot assemblies - 777</p> <p>► Dr Alison Funston, Monash University, VIC</p>	<p>Bioremediation of the future: Tissue-engineered pseudo-organism with toxin-induced enzyme scavenger activation by micro RNA switches - 783</p> <p>► Dr Nina Pollak, University of the Sunshine Coast, QLD</p>

1100 - 1115	<p>Towards continuous detection of cell metabolites in lab on a chip devices - 746</p> <p>► Prof Yonggang Zhu, Harbin Institute of Technology, China</p>	<p>Nano-imaging of functional nanomaterials by spatially resolved X-ray diffraction - 750</p> <p>► Dr Tobias Schulli, The European Synchrotron, France</p>	<p>Fabrication of Pd-TiO₂ nanotube junctions with enhanced photocatalytic activity via atomic layer deposition for organic pollutants degradation - 756</p> <p>► Dr Andrea Merenda, Deakin University, VIC</p>	<p>3D MoS₂ foam for point-of-use water purification application - 762</p> <p>► Dr Vipul Agarwal, University of New South Wales, NSW</p>	<p>Reducing oxidative stress by enzyme-loaded nanoparticle dispersions - 768</p> <p>► Asst Prof Istvan Szilagyi, University of Szeged, Hungary</p>	<p>Tuning the band alignment of van der waals heterostructures with ferroelectric materials - 772</p> <p>► Mr Patrick Taylor, RMIT University, VIC</p>	<p>Machine learning-enabled stiffness detecting by low refractive nanoparticle - 778</p> <p>► Mr Xuchen Shan, University of Technology Sydney, NSW</p>	<p>A programmed anti-inflammatory nanoscaffold: Decoupling brain injury from inflammation - 784</p> <p>► Prof David Nisbet, The Australian National University, ACT</p>
1115 - 1130		<p>Diffraction unlimited imaging: multilateration localization of two single-photon fluorophores - 751</p> <p>► Mr Josef Worboys, RMIT University, VIC</p>		<p>Conducting polymers for sensing in agriculture - 763</p> <p>► Dr Sam Rudd, University of South Australia, SA</p>	<p>Agricultural nanotechnology: Changing the future of crop protection - 769</p> <p>► Prof Neena Mitter, The University of Queensland, QLD</p>	<p>Optical properties of multilayered free-standing porous silicon microstructures for thermal imaging applications - 773</p> <p>► Ms Yaman Afandi, University of Western Australia, WA</p>	<p>Tailoring directional scattering of second-harmonic generation from (111)-GaAs nanoantennas - 779</p> <p>► Mr Mohsen Rahmani, The Australian National University, ACT</p>	
1130 - 1145	<p>Cryogenic electron microscopy studies of giant pore forming immune effectors - 747</p> <p>► Prof James Whisstock, Monash University, VIC</p>	<p>Influence of ionic surfactant adsorption on the response of GaN/AlGaIn/GaN pH sensors - 752</p> <p>► Mr Jianan Wang, The University of Western Australia, WA</p>		<p>Mg based nanotechnologies to control clay swelling in coal seam gas wells - 764</p> <p>► Dr Tom Rufford, The University of Queensland, QLD</p>	<p>Vortex fluidic mediated synthesis of macroporous bovine serum albumin-based microspheres - 770</p> <p>► Dr Xuan Luo, Flinders University, SA</p>	<p>Enhancing properties of MoS₂ for photo catalyst applications by using ferroelectric materials - 774</p> <p>► Mr Dimuthu Wijethunge, Queensland University of Technology, QLD</p>	<p>InAs-nanowire-based broadband ultrafast optical switch - 780</p> <p>► Mr Vladislav Khayrudinov, Aalto University, Finland</p>	<p>Structural studies of phase-separating human gene regulatory proteins and their role in the structure and formation of membraneless organelles - 785</p> <p>► Prof Charlie Bond, The University of Western Australia, WA</p>
1145 - 1200		<p>In situ small-angle x-ray scattering measurements of ion track etching in polymers - 753</p> <p>► Mr Alexander Kiy, The Australian National University, ACT</p>		<p>Solar vapour generation by photo-reduced graphene oxide membrane - 765</p> <p>► Mr Tieshan Yang, Swinburne University of Technology, VIC</p>	<p>Effect of various surface conditions on van der waals epitaxy of MoS₂ - 833</p> <p>► Mrs Negar Zebardastan, Queensland University of Technology, QLD</p>		<p>Spectroscopic study of upconversion nanoparticles - 781</p> <p>► Dr Jiajia Zhou, University of Technology Sydney, NSW</p>	<p>Acoustic neuromodulation in cortical neurons and retinal tissue - 786</p> <p>► Dr Melanie Stamp, The University of Melbourne, VIC</p>
1200 - 1300	<p>Lunch Room ► <i>Mezzanine level</i></p>							
1215 - 1255	<p>Lunch Q&A panel session - Fostering successful academic-industry partnerships in nanotechnology</p> <p>► Dr Murray Height, HeiQ Australia, VIC</p> <p>► Prof Darren Martin, The University of Queensland, QLD</p> <p>► Mr Craig Nicol, Graphene Manufacturing Group</p> <p>► Dr Paul Sernia, Tritium</p> <p>► Dr Ian Griffiths, Australian National Fabrication Facility (ANFF)</p> <p>► Dr Warren McKenzie, Entrepreneur</p> <p>Chair: Dr Mohan Krishnamoorthy</p> <p>Room ► <i>Great Hall 1&2</i></p>							

1300 - 1430	Concurrent Session 12A	Concurrent Session 12B	Concurrent Session 12C	Concurrent Session 12D	Concurrent Session 12E	Concurrent Session 12F	Concurrent Session 12G	Concurrent Session 12H
Theme	BIONANO Room ► <i>Great Hall 1&2</i>	NANO CHARACTERISATION & MANUFACTURING Room ► <i>P1</i>	NANO ENERGY & ENVIRONMENT Room ► <i>P2</i>	NANO ENERGY & ENVIRONMENT Room ► <i>P3</i>	NANOMATERIALS Room ► <i>P4</i>	NANOMATERIALS Room ► <i>P5</i>	NANO PHOTONICS Room ► <i>M1</i>	NANO COMMERCIALISATION Room ► <i>M2</i>
Chair/s	Prof Kristofer Thurecht and Dr Changkui Fu	Prof Zhi-gang Chen		Dr Yuxiang Hu	Prof Ebinazar Namdas		Dr Jiajia Zhou	Prof Darren Martin
1300 - 1315	Development of architectural polymers for biomedical imaging and therapy - 787 ► Assoc Prof Kristofer Thurecht, The University of Queensland, QLD	Role of nanoscale metastable phases in strengthening advanced Ti alloys - 792 ► Dr Damon Kent, University of the Sunshine Coast, QLD	Electronic structure of fast-ion conducting alkali metal vanadium phosphates - 798 ► Dr Tristram Jenkins, Queensland University of Technology, QLD	High efficiency perovskite materials for solar applications - 804 ► Prof Kylie Catchpole, The Australian National University, ACT	Fabrication of solid-state nano-pore graphene composite membranes - 809 ► Mr Shankar Dutt, The Australian National University, ACT	Tuning of electron configurations in transition metal oxides for higher OER - 815 ► Prof Zhenxiang Cheng, University of Wollongong, NSW	Metaphotonics and metasurfaces governed by Mie-resonant nanoparticles - 821 ► Prof Yuri Kivshar, The Australian National University, ACT	Commercialisation of novel materials and processes: Challenges and highlights - 826 ► Dr Murray Height, HeiQ Australia, QLD
1315 - 1330		Understanding the role of surface oxides in HVAF thermal spray coatings - 793 ► Dr William Trompeter, GNS Science, New Zealand	Plasmonic photocurrent transients reveal charge carrier dynamics in plasmon driven catalysis - 799 ► Dr Eser Metin Akinoglu, The University of Melbourne, VIC		Multifunctional smart polyester fabric fabricated by electrodepositing ZnO - 810 ► Miss Mihiri Ekanayake, Queensland University of Technology, QLD	Ultrasonic spray pyrolysis of doped tin oxide films for transparent electrode applications - 816 ► Mr Jaewon Kim, RMIT University, VIC		
1330 - 1345	Targeting glycans on diseased brain cells with fluorescent nanodiamonds- 789 ► Dr Lindsay Parker, Macquarie University, NSW	High-yield synthesis of nanometer-thick S-doped MoTe2 by a facile chemical vapour deposition method - 794 ► Miss Yuzhe Yang, The University of Queensland, QLD	Insight into the effect of spatial distribution of MoS2 on CdS Nanorods - 800 ► Miss Xinlin Lu, Particles and Catalysis Research Group, NSW	Interfacial engineering of carbon electrodes for efficient and stable perovskite solar cells - 805 ► Dr Munkhbayar Batmunkh, Griffith University, QLD	The effect of fluorescent nanodiamond particle size on cellular function - 811 ► Ms Emma Wilson, RMIT University, VIC	Highly transparent and conductive nanomesh films - 817 ► Dr Tengfei Qiu, The University of Queensland, QLD	Photonic devices in single crystal (111) diamond membrane - 822 ► Mr Blake Regan, University of Technology Sydney, NSW	Vortex fluidics assisted in-situ Small Angle Neutron Scattering for nano-encapsulation of fish oil formulation and its applications - 827 ► Assoc Prof Shan He, Guangzhou University, China
1345 - 1400	Novel electrochemical assay for sensitive quantification of exosomal miRNA associated with preeclampsia - 790 ► Dr Muhammad Umer, Griffith University, QLD	Measurements of sub-nanometric shifts in lattice parameters due to residual stress in self-piercing riveting (SPR) joint - 795 ► Dr Rezwanul Haque, University of the Sunshine Coast, QLD	Computation of the performance of dye-sensitized solar cells by a mathematical model - 801 ► Mr Benjamin Maldon, The University of Newcastle, NSW	Strategies toward stable and efficient perovskite photovoltaics - 806 ► Dr Yang Bai, The University of Queensland, QLD	Existence of the navier slip condition for liquid flows around nanoparticles - 812 ► Dr Jesse Collis, The University of Melbourne, VIC	One-step deposition of copper/cuprous copper oxide core-shell nanocrystals on highly conductive graphene sheet electrode - 818 ► Dr Xiaojing Zhou, The University of Newcastle, NSW	Multiple state thermally tunable metasurfaces - 823 ► Mr Mohsen Rahmani, The Australian National University, ACT	Underpinning standards development for advanced materials: An introduction to VAMAS - 828 ► Dr Victoria Coleman, National Measurement Institute Australia, NSW
1400 - 1415	Synthesis and application of advanced fluoropolymers as 19F MRI contrast agents - 791 ► Dr Changkui Fu, The University of Queensland, QLD	Local geometrical error corrections for a metrological scanning probe microscope - 796 ► Dr Bakir Babic, National Measurement Institute, NSW	Developing high performance lead-free Cs2AgBiBr6 double perovskite solar cells in a low cost planar structure - 802 ► Mrs Mehri Ghasemi, The University of Queensland, QLD	Electrochemical nitrogen reduction reaction on two-dimensional antimonene nanosheets for ammonia synthesis - 807 ► Mrs Munkhjargal Bat-Erdene, The University of Queensland, QLD		Self-assembled hybrid nanocrystals as advanced optoelectronic materials - 819 ► Ms Anum Nisar, Monash University, VIC		Spinifex nanotechnology: A university – Indigenous community partnership for nanomaterials commercialisation - 829 ► Dr Celine Chaleat, The University of Queensland, QLD

1415 - 1430		<p>Effect of various urea concentrations on nitrogen slow release from PLLA nanofiber mat - 797</p> <p>► Mrs Leila Javazmi, The University of Southern Queensland, VIC</p>	<p>Electrocatalytic nanoparticles that mimic the three-dimensional geometric architecture of enzymes: The importance of nanoscale confinement on electrocatalytic performance - 803</p> <p>► Ms Johanna Wordsworth, University of New South Wales, NSW</p>				<p>Spinifex nanocellulose nanotechnology: The uniqueness and industrial applications - 830</p> <p>► Dr Pratheep Kumar Annamalai, The University of Queensland, QLD</p>
1430 - 1500	<p>Afternoon tea Room ► <i>Mezzanine level</i></p>						
1500 - 1545	<p>Plenary speaker presentation: Organic nano-crystals in the eyes of aquatic organisms: Biogenic scatterers, mirrors, multilayer reflectors and photonic crystals - 831 Prof Lia Addadi, Weizmann Institute of Science, Israel Chair: Assoc Prof Chun-Xia Zhao, The University of Queensland Room ► <i>Great Hall 1&2</i></p>						
1545 - 1630	<p>Plenary speaker presentation: Nanoscience and nanotechnology: The role of computation at the atomic level - 832 Prof Debra Bernhardt (Searles), The University of Queensland Chair: Prof John Bell, University of Southern Queensland Room ► <i>Great Hall 1&2</i></p>						
1630 - 1645	<p>Closing ceremony</p>						