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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	<b>Registration and information desk open</b>
1700 - 1800	<b>Q&amp;A panel session - What makes a great leader</b> <ul style="list-style-type: none"> <li>▶ Prof Peter Høj, Vice-Chancellor and President, The University of Queensland</li> <li>▶ Prof Roland De Marco, Deputy Vice-Chancellor (Research and Innovation), University of the Sunshine Coast</li> <li>▶ Prof Margaret Shiel, Vice-Chancellor and President, Queensland University of Technology</li> </ul> <b>Chair:</b> Prof Joe Shapter, The University of Queensland Room ▶ <i>Great Hall 1&amp;2</i>
1800 - 1900	<b>Welcome reception</b> Room ▶ <i>Mezzanine level</i>

## Monday 10 February 2020

0700 - 1900	<b>Registration and information desk open</b>							
0830 - 0900	<b>Opening ceremony &amp; Welcome to Country</b> <b>Chair:</b> Prof Lianzhou Wang, The University of Queensland Room ▶ <i>Great Hall 1&amp;2</i>							
0900 - 0945	<b>Plenary speaker presentation: Photocatalytic water splitting for large scale solar hydrogen production - 100</b> <ul style="list-style-type: none"> <li>▶ Prof Kazunari Domen, The University of Tokyo, Japan</li> </ul> <b>Chair:</b> Prof Rose Amal, University of New South Wales Room ▶ <i>Great Hall 1&amp;2</i>							
0945 - 1030	<b>Plenary speaker presentation: Nanomaterials design for energy and environment - 101</b> <ul style="list-style-type: none"> <li>▶ Prof Yi Cui, Stanford University, United States</li> </ul> <b>Chair:</b> Prof Joe Shapter, The University of Queensland Room ▶ <i>Great Hall 1&amp;2</i>							
1030 - 1100	<b>Morning tea</b> Room ▶ <i>Mezzanine level</i>							
1100 - 1230	<b>Concurrent Session 1A</b>	<b>Concurrent Session 1B</b>	<b>Concurrent Session 1C</b>	<b>Concurrent Session 1D</b>	<b>Concurrent Session 1E</b>	<b>Concurrent Session 1F</b>	<b>Concurrent Session 1G</b>	<b>Concurrent Session 1H</b>
<b>Theme</b>	<b>BIONANO</b> Room ▶ <i>Great Hall 1&amp;2</i>	<b>BIONANO</b> Room ▶ <i>P1</i>	<b>NANO ENERGY &amp; ENVIRONMENT</b> Room ▶ <i>P2</i>	<b>NANO ENERGY &amp; ENVIRONMENT</b> Room ▶ <i>P3</i>	<b>NANO COMPUTATION</b> Room ▶ <i>P4</i>	<b>NANO POLYMERS</b> Room ▶ <i>P5</i>	<b>NANO CARBON</b> Room ▶ <i>M1</i>	<b>NANOMATERIALS</b> Room ▶ <i>M2</i>
<b>Chair/s</b>	<b>Prof Andrew Whittaker and Assoc Prof Chun-Xia Zhao</b>	<b>Dr Barbara Rolfe and Prof Xingyu Jiang</b>	<b>Dr Zongyou Yin</b>	<b>Dr Tianyi Ma</b>	<b>Assoc Prof Ekaterina Pas</b>	<b>Prof Michael Monteiro</b>	<b>Prof Yuan Chen</b>	<b>Prof Weida Hu</b>
			Sponsored by: <b>NEWARE NEWARE</b>					
1100 - 1115	<b>Multifunctional nanocomposites with sequential tumor acidity responsiveness for cancer photodynamic therapy and imaging - 102</b> <ul style="list-style-type: none"> <li>▶ Prof Doo Sung Lee, Sungkyunkwan University, South Korea</li> </ul> Sponsored by: 	<b>Collagen disorder domains in human anterior cruciate ligament caused by repetitive sub-maximal mechanical loading - 106</b> <ul style="list-style-type: none"> <li>▶ Prof Mark Banaszak Holl, Monash University, VIC</li> </ul> <b>Smart polymer-coated hybrid calcium phosphate nanoparticles for oral vaccine delivery - 107</b> <ul style="list-style-type: none"> <li>▶ Dr Li Li, The University of Queensland, QLD</li> </ul>	<b>Nature Nanotechnology, energy and the environment - 111</b> <ul style="list-style-type: none"> <li>▶ Dr Fabio Pulizzi, Nature Nanotechnology, United Kingdom</li> </ul>	<b>Bioinspired super-wettability system and beyond quantum-confined superfluid: energy conversion, chemical reaction and biological information transfer - 115</b> <ul style="list-style-type: none"> <li>▶ Prof Lei Jiang, Chinese Academy of Sciences, China</li> </ul>	<b>A computational screening of porous materials for biogas upgrading - 119</b> <ul style="list-style-type: none"> <li>▶ Prof Elena Besley, University of Nottingham, United Kingdom</li> </ul>	<b>Adaptive polymer nanoreactors with life-like features - 123</b> <ul style="list-style-type: none"> <li>▶ Prof Jan Van Hest, Eindhoven University of Technology, Netherlands</li> </ul>	<b>Oriented assembly of functional mesoporous materials with multi-level architectures - 126</b> <ul style="list-style-type: none"> <li>▶ Prof Dongyuan Zhao, Fudan University, China</li> </ul>	<b>1D nanowires of 2D layered materials: A new frontier in nanomaterials - 131</b> <ul style="list-style-type: none"> <li>▶ Prof Eli Sutter, University of Nebraska-Lincoln, United States</li> </ul>
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1130 - 1145	<p><b>The use of self-immolative polymers to tune nanoparticle/biological interactions - 103</b></p> <ul style="list-style-type: none"> <li>▶ Dr Georgina Such, The University of Melbourne, VIC</li> </ul>	<p><b>New strategy for blood-brain barrier crossing and brain disease therapy - 108</b></p> <ul style="list-style-type: none"> <li>▶ Dr Bingyang Shi, Macquarie-Henan Uni Joint Centre for Biomedical Innovation, NSW</li> </ul>	<p><b>Mesopores-abundant M-N/C based oxygen electro-catalysts - 112</b></p> <ul style="list-style-type: none"> <li>▶ Prof Yanglong Hou, Peking University, China</li> </ul>	<p><b>Nanoporous materials for energy and environmental applications - 116</b></p> <ul style="list-style-type: none"> <li>▶ Prof George Zhao, The University of Queensland, QLD</li> </ul>	<p><b>Understanding ion transport in cascading nanoslit systems embedded in graphene membranes - 120</b></p> <ul style="list-style-type: none"> <li>▶ Assoc Prof Zhe Liu, The University of Melbourne, VIC</li> </ul>	<p><b>Polymer processing under high shear fluid flow - 124</b></p> <ul style="list-style-type: none"> <li>▶ Prof Colin Raston, Flinders University, SA</li> </ul>	<p><b>The nature of the carbon nanotube – catalyst interface during chemical vapour deposition growth - 127</b></p> <ul style="list-style-type: none"> <li>▶ Assoc Prof Alister Page, The University of Newcastle, NSW</li> </ul>	<p><b>Robust and controllable monolayer pressurized hydrogen domes - 132</b></p> <ul style="list-style-type: none"> <li>▶ Assoc Prof Yuerui Lu, The Australian National University, ACT</li> </ul>
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1245 - 1325	<p><b>Lunch Q&amp;A panel session - How to get published</b></p> <ul style="list-style-type: none"> <li>▶ Prof Paul S. Weiss, University of California, Los Angeles, United States</li> <li>▶ Dr Fabio Pulizzi, Nature Publishing Group, United Kingdom</li> <li>▶ Dr Esther Levy, Wiley, VIC</li> <li>▶ Professor Dongyuan Zhao, Fudan University and Senior Editor for ACS Central Science, China</li> <li>▶ Professor Lei Jiang, Chinese Academy of Sciences, China</li> </ul> <p><b>Chair:</b> Dr Yang Bai, The University of Queensland Room ▶ <i>Great Hall 1&amp;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
<b>Theme</b>	<b>BIONANO</b> Room ► <i>Great Hall 1&amp;2</i>	<b>BIONANO</b> Room ► <i>P1</i>	<b>NANO ENERGY &amp; ENVIRONMENT</b> Room ► <i>P2</i>	<b>NANO ENERGY &amp; ENVIRONMENT</b> Room ► <i>P3</i>	<b>NANO COMPUTATION</b> Room ► <i>P4</i>	<b>NANO POLYMERS</b> Room ► <i>P5</i>	<b>NANO CARBON</b> Room ► <i>M1</i>	<b>NANOMATERIALS</b> Room ► <i>M2</i>
<b>Chair/s</b>	<b>Prof Yin Xiao and Dr Amiral Popat</b>	<b>Dr Barbara Rolfe and Dr Jan Lauko</b>	<b>Dr Yu Lin Zhong</b>	<b>Assoc Prof Ziqi Sun</b>	<b>Assoc Prof Alister Page</b>	<b>Prof Prashant Sonar</b>	<b>Prof Yong Sik Ok and Dr Nisa Salim</b>	<b>Prof Ying Chen</b>
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<b>Theme</b>	<b>BIONANO</b>	<b>BIONANO</b>	<b>NANO ENERGY &amp; ENVIRONMENT</b>	<b>NANO ENERGY &amp; ENVIRONMENT</b>	<b>NANO COMPUTATION</b>	<b>NANO POLYMERS</b>	<b>NANO CARBON</b>	<b>NANOMATERIALS</b>
<b>Chair/s</b>	<b>Prof Bo Liedberg and Dr Simon Corrie</b>	<b>Prof Millicent Sullivan and Dr Nicole Smith</b>	<b>Dr Bin Luo and Prof Yuxin Tang</b>	<b>Prof Hongxia Wang and Dr Munkhbayar Batmunkh</b>	<b>Dr Amanda Barnard and Dr Asaph Widmer-Cooper</b>	<b>Dr Valentin Bobrin</b>	<b>Prof Qiang Zhang and Dr Ludovic Dumege</b>	<b>Dr Ziyuan Li and Prof Warwick Bowen</b>
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1830 - 1845	<p><b>Electrospun diamond-silk membranes for biosensing applications - 194</b></p> <p>Dr Asma Khalid, RMIT University, VIC</p>	<p><b>The effect of aromatic residues on electrical conductivity and structure of <math>\alpha</math>-helical peptides - 201</b></p> <p>Mr Armin Solemanifar, The University of Queensland, QLD</p>	<p><b>Engineering silver nanowire networks: From transparent electrodes to multi-functional devices - 208</b></p> <p>► Assoc Prof Dewei Chu, University of New South Wales, NSW</p>	<p><b>Crystalline domains battery materials - 215</b></p> <p>► Prof Haijun Yu, Beijing University of Technology, China</p>	<p><b>High-performance Bi<sub>2</sub>Te<sub>3</sub> thermoelectric materials via modulation of carrier concentration guided by SPB model - 222</b></p> <p>► Mr Yuan Wang, University of Southern Queensland, QLD</p>	<p><b>Enhanced treatment of glioblastoma using EphA2-targeted bispecific antibodies an adjuvant for a doxorubicin-loaded hyperbranched polymer - 230</b></p> <p>► Mr Phillip Janowicz, The University of Queensland, QLD</p>	<p><b>Atomic layer deposition of metal oxide (SnO<sub>2</sub>) on carbon nanotubes membranes for photoelectro-catalytic applications - 239</b></p> <p>► Mr Ahmed Rashed, Deakin University, VIC</p>	<p><b>Hexagonal boron nitride nanosheets (BNNS): Fabrication and applications - 249</b></p> <p>► Dr Zhenguo Huang, University of Technology Sydney, NSW</p>
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0730 - 1900	<b>Registration and information desk open</b>							
0830 - 0915	<b>Plenary speaker presentation: Aggregation-induced emission: Materials and biomedical applications - 300</b> ▶ Prof Bin Liu, National University of Singapore, Singapore <b>Chair:</b> Prof Andrew Whittaker, The University of Queensland Room ▶ <i>Great Hall 1&amp;2</i>							
0915 - 1000	<b>Plenary speaker presentation: Adding the chemical dimension to lithography at all scales: Enabling cellular therapies &amp; other adventures in biology and medicine - 301</b> ▶ Prof Paul S Weiss, University of California, Los Angeles, United States <b>Chair:</b> Prof Paul Mulvaney, The University of Melbourne Room ▶ <i>Great Hall 1&amp;2</i>							
1000 - 1030	<b>Morning tea</b> Room ▶ <i>Mezzanine level</i>							
1030 - 1230	<b>Concurrent Session 4A</b>	<b>Concurrent Session 4B</b>	<b>Concurrent Session 4C</b>	<b>Concurrent Session 4D</b>	<b>Concurrent Session 4E</b>	<b>Concurrent Session 4F</b>	<b>Concurrent Session 4G</b>	<b>Concurrent Session 4H</b>
<b>Theme</b>	<b>BIONANO</b> Room ▶ <i>Great Hall 1&amp;2</i>	<b>BIONANO</b> Room ▶ <i>P1</i>	<b>NANO ENERGY &amp; ENVIRONMENT</b> Room ▶ <i>P2</i>	<b>NANO ENERGY &amp; ENVIRONMENT</b> Room ▶ <i>P3</i>	<b>NANO ELECTRONICS</b> Room ▶ <i>P4</i>	<b>NANOMATERIALS</b> Room ▶ <i>P5</i>	<b>NANO CARBON</b> Room ▶ <i>M1</i>	<b>NANO ENERGY &amp; ENVIRONMENT</b> Room ▶ <i>M2</i>
<b>Chair/s</b>	<b>Prof Mauri Kostianen and Dr Frank Sainsbury</b>	<b>Prof Nicolas Voelcker and Dr Run Zhang</b>	<b>Assoc Prof Jie Zhang</b>	<b>Dr Jing Tang</b>	<b>Assoc Prof Drew Evans</b>	<b>Dr Sejeong Kim</b>	<b>Prof Dan Li and Dr Rakesh Joshi</b>	<b>Dr Yi (Alex) Jia</b>
			Sponsored by: <b>NEWARE</b>	Sponsored by: <b>NEWARE</b>				Sponsored by: <b>NEWARE</b>
1030 - 1045	<b>Protein cages as building blocks for nanomaterials: Binary superlattices and DNA origami encapsulation - 302</b> ▶ Prof Mauri Kostianen, Aalto University, Finland	<b>Leveraging light and electrons for the design of nanostructured biosensors - 309</b> ▶ Prof Nicolas Voelcker, Monash University, VIC	<b>Designing earth-abundant nanostructured electrocatalysts for efficient and selective conversion of energy and chemicals - 315</b> ▶ Prof Song Jin, University of Wisconsin-Madison, United States	<b>SiC/Si core-shell structure to inhibit the chemical formation reaction of Li<sub>2</sub>SiF<sub>6</sub> for stable Si-based anode - 320</b> ▶ Prof Fei Wei, Tsinghua University, China	<b>Silicon-based quantum computing: The path from the laboratory to industrial manufacture - 325</b> ▶ Prof Andrew Dzurak, University of New South Wales, NSW	<b>Metal halide perovskites at the nanoscale: High quality optoelectronic materials with unique functionality and distinctions from thin film perovskites - 330</b> ▶ Dr Joseph Luther, National Renewable Energy Laboratory, United States	<b>Bulk nanostructured solids assembled from 2D soft carbon sheets - 337</b> ▶ Prof Jiaying Huang, Northwestern University, United States	<b>Green carbon-based nanomaterials for energy storage - 344</b> ▶ Prof Xinyong Tao, Zhejiang University of Technology, China
1045 - 1100								
1100 - 1115	<b>Natural nanotechnology: protein encapsidation and delivery within virus-derived protein cages - 303</b> ▶ Dr Frank Sainsbury, Griffith University, QLD	<b>Nanocrystalline particles for earlier detection of neurodegeneration - 310</b> ▶ Assoc Prof Olga Shimoni, University of Technology, Sydney, NSW	<b>Stretchable gold nanowire epidermal energy devices - 316</b> ▶ Prof Wenlong Cheng, Monash University, VIC	<b>Applications of plasma technology in electrochemical energy conversion and storage materials - 321</b> ▶ Prof Wenjun Zhang, City University of Hong Kong, Hong Kong	<b>Scaling down channel dimensions in thin-film transistors: Challenges and prospects - 326</b> ▶ Prof Ananth Dodabalapur, The University of Texas at Austin, United States	<b>Colloidal perovskite quantum dots for record-efficiency and phase stable solar cell - 331</b> ▶ Mr Mengmeng Hao, The University of Queensland, QLD	<b>Solvation-involved nanoionics: New opportunities from graphene-based membranes - 338</b> ▶ Prof Dan Li, The University of Melbourne, VIC	<b>Surface Li-depletion and the electronic band structure of olivine phosphates - 345</b> ▶ Prof Jose Alarco, Queensland University of Technology, QLD
1115 - 1130	<b>Lipid-based nanomaterials for delivery of biopharmaceuticals - 304</b> ▶ Dr Charlotte Conn, RMIT University, VIC	<b>A 10-minute universal cancer test based on interfacial biosensing - 311</b> ▶ Dr Abu Sina, The University of Queensland, QLD				<b>White graphene boron nitride nanosheets: New superb properties and exciting applications - 332</b> ▶ Prof Ying Chen, Deakin University, VIC	<b>Drying of graphene hydrogel fibers for capacitive energy storage - 339</b> ▶ Prof Yuan Chen, The University of Sydney, NSW	



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	Concurrent Session 5A	Concurrent Session 5B	Concurrent Session 5C	Concurrent Session 5D	Concurrent Session 5E	Concurrent Session 5F	Concurrent Session 5G	Concurrent Session 5H
1330 - 1530	<b>Concurrent Session 5A</b>	<b>Concurrent Session 5B</b>	<b>Concurrent Session 5C</b>	<b>Concurrent Session 5D</b>	<b>Concurrent Session 5E</b>	<b>Concurrent Session 5F</b>	<b>Concurrent Session 5G</b>	<b>Concurrent Session 5H</b>
<b>Theme</b>	<b>BIONANO</b> Room ► <i>Great Hall 1&amp;2</i>	<b>BIONANO</b> Room ► <i>P1</i>	<b>NANO ENERGY &amp; ENVIRONMENT</b> Room ► <i>P2</i>	<b>NANO ENERGY &amp; ENVIRONMENT</b> Room ► <i>P3</i>	<b>NANO ELECTRONICS</b> Room ► <i>P4</i>	<b>NANOMATERIALS</b> Room ► <i>P5</i>	<b>NANO CARBON</b> Room ► <i>M1</i>	<b>NANO ENERGY &amp; ENVIRONMENT</b> Room ► <i>M2</i>
<b>Chair/s</b>	<b>Prof Michael Monteiro and Prof Cyrille Boyer</b>	<b>Prof Fan Zhang and Dr Tushar Kumeria</b>	<b>Prof Antonio Tricoli</b>	<b>Dr Yijiao Jiang</b>	<b>Prof Madhu Bhaskaran</b>	<b>Dr Sumeet Walia</b>	<b>Prof Jun Ma and Dr Haifei Zhan</b>	<b>Dr Dawei Su</b>
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1515 - 1530			<b>Non-precious metal doped nanoporous carbon nanosheet for catalyzing oxygen reduction reaction - 366</b> ▶ Dr Jing Tang, The University of Queensland, QLD	<b>Near-infrared absorbing acceptor improves the nanophase segregation of ternary organic photovoltaic blend with a performance of 12% - 371</b> ▶ Prof Chih-Ping Chen, Ming Chi University of Technology, Taiwan	<b>Stretchable broadband photodetector based on layered Black Phosphorus - 377</b> ▶ Ms Mei Xian Low, RMIT University, VIC		<b>Thermo-mechanical properties of carbon nanothread and diamond nanothread reinforced-polymer composites - 392</b> ▶ Mr Chengkai Li, Queensland University of Technology, QLD	<b>Layered double hydroxide based photocatalysts for solar fuels and value-added chemicals - 399</b> ▶ Prof Tierui Zhang, Chinese Academy of Sciences, China								
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1600 - 1845	<b>Concurrent Session 6A</b>		<b>Concurrent Session 6B</b>		<b>Concurrent Session 6C</b>		<b>Concurrent Session 6D</b>		<b>Concurrent Session 6E</b>		<b>Concurrent Session 6F</b>		<b>Concurrent Session 6G</b>		<b>Concurrent Session 6H</b>	
<b>Theme</b>	<b>BIONANO</b> Room ▶ <i>Great Hall 1&amp;2</i>		<b>BIONANO</b> Room ▶ <i>P1</i>		<b>NANO ENERGY &amp; ENVIRONMENT</b> Room ▶ <i>P2</i>		<b>NANO ENERGY &amp; ENVIRONMENT</b> Room ▶ <i>P3</i>		<b>NANO ELECTRONICS</b> Room ▶ <i>P4</i>		<b>NANOMATERIALS</b> Room ▶ <i>P5</i>		<b>NANO CARBON</b> Room ▶ <i>M1</i>		<b>NANO COMPUTATION</b> Room ▶ <i>M2</i>	
<b>Chair/s</b>	<b>Prof Leslie Yeo and Dr Meihua Yu</b>		<b>Dr Rona Chandrawati and Dr Soojung Hur</b>		<b>Dr Zhongfan Jia and Prof Wenjie Mai</b>		<b>Dr Haolan Xu</b>		<b>Dr Bowen Zhu</b>		<b>Prof Thomas Nann and Prof Colin Raston</b>		<b>Prof Yanqing Wang and Dr Zengxia Pei</b>		<b>Prof Elena Besley and Dr Mingchao Wang</b>	
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1630 - 1645	<b>Development of highly immunogenic nanovaccines targeting human papillomavirus-associated cancers - 401</b> ▶ Dr Meihua Yu, The University of Queensland, QLD	<b>Polymer- and lipid-based nanosensors for food and health monitoring - 410</b> ▶ Dr Rona Chandrawati, University of New South Wales, NSW	<b>A fully recyclable battery cell design for sustainable environment - 417</b> ▶ Prof Shangqing Zhang, Griffith University, QLD	<b>Superior S cathodes for room-temperature sodium-sulfur batteries - 426</b> ▶ Dr Yunxiao Wang, University of Wollongong, NSW	<b>Polymer-assisted metal deposition for soft electronics - 434</b> ▶ Prof Zijian Zheng, The Hong Kong Polytechnic University, Hong Kong	<b>Nanostructured materials in biomimetic systems - 443</b> ▶ Dr Dorna Esrafilzadeh, University of New South Wales, NSW	<b>Carbon monoliths/fibers from molecular-level dispersion of CNTs into polyacrylonitrile (PAN) and the effects of carbonization process for supercapacitor - 452</b> ▶ Prof Yanqing Wang, Sichuan University, China	<b>Transport of partially delocalised charges and excitons - 461</b> ▶ Dr Ivan Kassal, The University of Sydney, NSW
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1700 - 1715	<b>Silk-nanodiamond-curcumin wound dressings for sensing infection - 403</b> ▶ Dr Amanda Abraham, RMIT University, VIC	<b>Raman biomedical diagnostics made possible with custom-made gold nanostructured assemblies - 411</b> ▶ Dr Priyanka Dey, University of Exeter, United Kingdom	<b>In-situ electrochemical reaction monitoring in batteries electrode - 419</b> ▶ Prof Yuxin Tang, University of Macau, China	<b>Improving interfacial solar steam generation by energy management - 428</b> ▶ Dr Haolan Xu, The University of South Australia, SA		<b>Nanofiber based dual functional enzymatic and thermo-responsive membranes for protein self-cleaning - 445</b> ▶ Dr Anbharasi Vanangamudi, Deakin University, VIC	<b>Edge-functionalised graphene formulations as moldable electrode materials - 454</b> ▶ Dr Shaikh Nayeem Faisal, University of Wollongong, NSW	<b>Graphene like carbon-nitride monolayer as the cathode of al-ion battery - 462</b> ▶ Mr Shaikat Debnath, The University of Queensland, QLD
1715 - 1730	<b>Short break</b>							
1730 - 1745	<b>Prediction of peptide-driven exfoliation and assembly on 2D nanosheet materials - 404</b> ▶ Prof Tiffany Walsh, Deakin University, QLD	<b>Microfluidic multimolecular delivery for personalized medicine - 412</b> ▶ Dr Soojung Hur, Johns Hopkins University, United States	<b>Hierarchically structured composites derived from metal-organic frameworks as advanced battery electrodes for hybrid supercapacitors - 420</b> ▶ Prof Han Hu, China University of Petroleum (East China), China	<b>ZnO nanostructures for gas sensing of formaldehyde: effect of surface oxygen - 429</b> ▶ Prof Michelle Spencer, RMIT University, VIC	<b>Emerging 2D materials for nanoelectronics - 436</b> ▶ Dr Shi Wun Tong, A*STAR's Institute of Materials Research and Engineering, Singapore	<b>Porous upconversion nanostructures as multimodal contrast agent for biomedical imaging - 446</b> ▶ Miss Ziqing Du, University of Technology Sydney, NSW	<b>Biomass-derived hard carbon materials for sodium-ion storage - 455</b> ▶ Prof George Zhao, The University of Queensland, QLD	<b>Expanding the molecular computing tool-kit: iteration, smart biosensing, small molecule detection, and in vivo therapeutics - 463</b> ▶ Assoc Prof Joanne Macdonald, University of the Sunshine Coast, QLD
1745 - 1800			<b>Nitroxide radical materials for organic energy storage - 421</b> ▶ Dr Zhongfan Jia, The University of Queensland, QLD		<b>Probing charge transfer across HIOS interface by nanowire conductance spectroscopy - 437</b> ▶ Dr Mykhailo Klymenko, RMIT University, VIC	<b>Homogeneous integration of carbon nanotubes in thermoplastics towards pressure-sensitive therapeutic insoles - 447</b> ▶ Ms Myra Ruth Poblete, University of New South Wales, ACT	<b>Plasma made nanocarbons for energy applications - 456</b> ▶ Prof Kostya (Ken) Ostrikov, Queensland University of Technology, QLD	<b>The interfacial properties of two-dimensional semiconductor based transistors - 464</b> ▶ Ms Yuanyuan Pan, China University of Petroleum (East China), China
1800 - 1815	<b>Nature-inspired protection of highly sensitive 2D materials against ambient oxidation - 405</b> ▶ Prof Vipul Bansal, RMIT University, VIC	<b>Development of high-throughput in vitro tumour models with microfabrication technologies - 413</b> ▶ Mr Guocheng Fang, University of Technology Sydney, NSW	<b>Battery intercalation strategy for material synthesis, energy application and mechanism study - 422</b> ▶ Asst Prof Zhiyuan Zeng, City University of Hong Kong, Hong Kong	<b>Enabling carbon nitride materials as lithium ion battery anode materials through fundamental understanding - 430</b> ▶ Dr Marlies Hankel, The University of Queensland, QLD	<b>Silicon quantum processor unit cell operation above one Kelvin - 438</b> ▶ Dr Henry Yang, University of New South Wales, NSW	<b>Functionalised dextran particles for overcoming antimicrobial resistance - 448</b> ▶ Dr Hien Duong, The University of Sydney, NSW	<b>Cost-effective construction of hierarchical carbon architecture for supercapacitive energy harvesting - 457</b> ▶ Dr Lu Guan, China University of Petroleum (East China), China	<b>Crystal phase effect on the catalytic activity of gold through intrinsic strain - 465</b> ▶ Mr Lixiang Zhong, Nanyang Technological University, Singapore

1815 - 1830	<p><b>The differentiation of osteocytes within a well-defined biomimetic synthetic polymer - 406</b></p> <p>► Ms Jung Un (Ally) Choi, The University of Queensland, QLD</p>	<p><b>Super-resolution in-depth imaging of single nanoparticles inside spheroids by near-infrared bessel-beam nanoscopy - 414</b></p> <p>► Mr Yongtao Liu, University of Technology Sydney, NSW</p>	<p><b>Nanoparticle-based hybrid electrode materials for sodium storage - 423</b></p> <p>► Dr Chao Wu, University of Wollongong, NSW</p>	<p><b>The K-ion storage performance with different materials, binders and electrolytes - 431</b></p> <p>► Prof Wenjie Mai, Jinan University, China</p>	<p><b>Coherent spin control of s-, p-, d- and f-electrons in a silicon quantum dot - 439</b></p> <p>► Ross Leon, University of New South Wales, NSW</p>	<p><b>Bioengineering and self-assembly of HBc virus-like nanoparticles: Functional materials for nanoscience and biomedicine - 449</b></p> <p>► Prof Lei Ren, Xiamen University, China</p>	<p><b>Spinifex nanocellulose as a potential carbon precursor for carbon fibre and anode material for rechargeable sodium-ion batteries - 458</b></p> <p>► Dr Pratheep Kumar Annamalai, The University of Queensland, QLD</p>	<p><b>Interlayer magnetic coupling mechanism in CrX<sub>n</sub>(X=I,S,Se; n=2,3) bilayers - 466</b></p> <p>► Dr Wei Ji, Renmin University of China, China</p>
1830 - 1845	<p><b>Orchestrating human neural stem cell differentiation and cellular processes using engineered vertically aligned silicon nanowire arrays - 407</b></p> <p>► Mrs Esther Lestrell, Monash University, VIC</p>	<p><b>Hydrogel platform with independently tailorable mechanical properties for directing stem cell fate - 415</b></p> <p>► Mr Diwei Ho, The University of Western Australia, WA</p>	<p><b>Introduction of trace La into lithium-rich cathode materials towards long-cycling stability - 424</b></p> <p>► Dr Xiaobo Zhu, The University of Queensland, QLD</p>	<p><b>Novel energy storage devices based on the multi-ion strategy - 432</b></p> <p>► Prof Yongbing Tang, Chinese Academy of Sciences, China</p>	<p><b>Gallium nitride transistors having an on-chip integrated light-emission drain to facilitate electron de-trapping from deep traps - 440</b></p> <p>► Dr Xi Tang, Shenzhen University, China</p>	<p><b>Emerging electrohydrodynamic approaches for versatile bioactive 3D interfaces - 450</b></p> <p>► Assoc Prof Menglin Chen, Aarhus University, Denmark</p>	<p><b>One-dimensional van der waals heterostructures - 459</b></p> <p>► Mr Yongjia Zheng, The University of Tokyo, Japan</p>	<p><b>Computational assisted design of high-performance Nd-doped TAGS-85 thermoelectric materials via band engineering - 467</b></p> <p>► Miss Wanyu Lyu, University of Southern Queensland, QLD</p>
1845 - 2000	<p><b>Poster session</b> Room ► <i>Mezzanine level</i></p>							

Wednesday 12 February 2020

0730 - 1900	<b>Registration and information desk open</b>							
0830 - 0915	<b>Plenary speaker presentation: Opportunity of 2D photocatalysts for promoting CO2 reduction - 500</b> ▶ Prof Yi Xie, University of Science and Technology of China, China <b>Chair:</b> Prof Huijun Zhao, Griffith University Room ▶ <i>Great Hall 1&amp;2</i>							
0915 - 1000	<b>Plenary speaker presentation: Beyond charge currents: Spin and ion currents for future data storage and computing technologies - 501</b> ▶ Prof Stuart Parkin, Max Planck Institute of Microstructure Physics, Germany <b>Chair:</b> Prof Lan Fu, The Australian National University Room ▶ <i>Great Hall 1&amp;2</i>							
1000 - 1030	<b>Morning tea</b> Room ▶ <i>Mezzanine level</i>							
1030 - 1230	<b>Concurrent Session 7A</b>	<b>Concurrent Session 7B</b>	<b>Concurrent Session 7C</b>	<b>Concurrent Session 7D</b>	<b>Concurrent Session 7E</b>	<b>Concurrent Session 7F</b>	<b>Concurrent Session 7G</b>	<b>Concurrent Session 7H</b>
<b>Theme</b>	<b>BIONANO</b> Room ▶ <i>Great Hall 1&amp;2</i>	<b>NANO CHARACTERISATION &amp; MANUFACTURING</b> Room ▶ <i>P1</i>	<b>NANO ENERGY &amp; ENVIRONMENT</b> Room ▶ <i>P2</i>	<b>NANO ENERGY &amp; ENVIRONMENT</b> Room ▶ <i>P3</i>	<b>NANO ELECTRONICS</b> Room ▶ <i>P4</i>	<b>NANOMATERIALS</b> Room ▶ <i>P5</i>	<b>NANO PHOTONICS</b> Room ▶ <i>M1</i>	<b>NANO CARBON</b> Room ▶ <i>M2</i>
<b>Chair/s</b>	<b>Prof Nam-Trung Nguyen and Prof Kirill Alexandrov</b>	<b>Prof Jin Zou</b>	<b>Dr Dongchen Qi</b>	<b>Dr Xunyu Lu</b>	<b>Prof Xiaoke Yi</b>	<b>Assoc Prof Caiyun Wang</b>	<b>Dr Baohua Jia</b>	<b>Prof Joe Shapter and Dr Xin Wang</b>
			Sponsored by: <b>NEWARE NEWARE</b>	Sponsored by: <b>NEWARE NEWARE</b>			Sponsored by: <small>Australian Research Council Centre of Excellence in</small> <b>exciton science</b>	
1030 - 1045	<b>Connecting biology and electronics with artificial protein switches - 502</b> ▶ Prof Kirill Alexandrov, Queensland University of Technology, QLD	<b>HAADF-STEM study of local lattice strain in gold nanoparticles - 508</b> ▶ Prof Syo Matsumura, Kyushu University, Japan	<b>Photocatalytic hydrogen oxide production for environmental applications - 515</b> ▶ Prof Xiwang Zhang, Monash University, VIC	<b>Metal-organic framework composite membranes for molecular and ionic separations - 521</b> ▶ Prof Huanting Wang, Monash University, VIC	<b>Topological transitions, chiral majorana fermion, and quantum computing - 527</b> ▶ Dr Kang Wang, University of California, Los Angeles, United States	<b>High aspect ratio <math>\beta</math>-Ga2O3 nanostructures: MacEtch, passivation, and devices - 534</b> ▶ Prof Xiuling Li, University of Illinois, United States	<b>Nanostructured metasurfaces for vortex generation, multiplexing and lasing - 541</b> ▶ Prof Cheng-Wei Qiu, National University of Singapore, Singapore	<b>Nanoscale design of carbons for electronic applications - 548</b> ▶ Prof Ravi Silva, University of Surrey, United Kingdom
1045 - 1100								
1100 - 1115	<b>A multimodal nanoprobe for pancreatic beta-cell detection and amyloidosis mitigation - 503</b> ▶ Dr Ruirui Qiao, The University of Queensland, QLD	<b>Graphene electrode of porous structure for supercapacitor and battery application - 509</b> ▶ Prof Jie Tang, National Institute For Materials Science, Japan	<b>Energy storage in thin film graphene-based supercapacitors as a function of the accessible surface area - 516</b> ▶ Prof Nunzio Motta, Queensland University of Technology, QLD	<b>Some case studies on bimetallic nanocatalysts for environment and energy applications - 522</b> ▶ Prof Fenglong Wang, Shandong University, China	<b>Implantable optoelectronic devices for advanced neural interfaces - 528</b> ▶ Assoc Prof Xing Sheng, Tsinghua University, China	<b>Conformal oxide electronics for sensing applications - 535</b> ▶ Prof Madhu Bhaskaran, RMIT University, VIC	<b>Anomalous power dependence of lanthanide-doped upconversion nanoparticles for super-resolution multiphoton microscopy - 542</b> ▶ Dr Yiqing Lu, Macquarie University, NSW	<b>Enhancing solar cells and catalysts using carbon nanomaterials - 549</b> ▶ Prof Joe Shapter, The University of Queensland, QLD
1115 - 1130	<b>Highly porous superparamagnetic nanoparticle-assisted nanomachineries for molecular biomarker detection - 504</b> ▶ Dr Muhammad Shiddiky, Griffith University, QLD	<b>3D TEM mapping of grains and dislocations in metals - 510</b> ▶ Prof Xiaoxu Huang, Chongqing University, China			<b>Interplay of aharonov-bohm interference and signatures of majorana fermions - 529</b> ▶ Mr Tommy Bartolo, RMIT University, VIC	<b>Experimental investigation of light-matter interaction of single vertical nanowire standing in an ordered nanowire array - 536</b> ▶ Dr Ziyuan Li, The Australian National University, ACT	<b>Nanoscale optical bio-sensing and imaging with diamond quantum probes - 543</b> ▶ Dr David Simpson, The University of Melbourne, VIC	<b>Immobilising carbon nanomaterials in fibrous system for wearable applications - 550</b> ▶ Dr Xin Wang, RMIT University, VIC

1130 - 1145	<p><b>Using thermoelectric heating-assisted electrohydrodynamic evaporation and centrifugation device to develop micro-concentrator to detect salmollena in food samples using raman tags - 505</b></p> <p>▶ Prof Shau-Chun (Paul) Wang, National Chung Cheng University, Taiwan</p>	<p><b>Direct observation and impact of co-segregated atoms in magnesium containing multiple alloying elements - 511</b></p> <p>▶ Prof Jian-Feng Nie, Monash University, VIC</p>	<p><b>Interface design in lithium-sulfur batteries - 517</b></p> <p>▶ Prof Jia-Qi Huang, Beijing Institute of Technology, China</p>	<p><b>Molecular driven membranes for clean energy separation - 523</b></p> <p>▶ Dr Colin Scholes, The University of Melbourne, VIC</p>	<p><b>Distinct modes of filament formation in Niobium Oxide - 530</b></p> <p>▶ Mr Shimul Kanti Nath, The Australian National University, ACT</p>	<p><b>Defect-free beta-Ga2O3 nanowires grown by the vapour-liquid-solid process - 537</b></p> <p>▶ Mr Curtis Irvine, University of Technology Sydney, NSW</p>	<p><b>Why upconversion quenching is observed in Au nanoparticles-doped glass? - 544</b></p> <p>▶ Dr Yunle Wei, University of Adelaide, SA</p>	<p><b>Laser reduced graphene fundamentals and sensor application - 551</b></p> <p>▶ Mr Zhengfen Wan, Griffith University, QLD</p>
1145 - 1200	<p><b>NIR fluorescence guided drug delivery - 506</b></p> <p>▶ Prof Xiaomin Li, Fudan University, China</p>	<p><b>Unravelling the microstructure of multi-cation mixed halide perovskites - 512</b></p> <p>▶ Assoc Prof Jennifer Wong-Leung, The Australian National University, ACT</p>	<p><b>Thermoelectric materials and devices for high-efficiency energy conversion - 518</b></p> <p>▶ Prof Zhi-gang Chen, University of Southern Queensland, QLD</p>	<p><b>Metallic glasses: A new type of environmental and low-cost catalysts - 524</b></p> <p>▶ Prof Laichang Zhang, Edith Cowan University, WA</p>	<p><b>Engineering InGaAs nanowire composition by selective area metal organic vapour phase epitaxy - 531</b></p> <p>▶ Ms Zahra Azimi, The Australian National University, ACT</p>	<p><b>ALD of transition metal di- and tri-chalcogenides with morphology and phase control - 538</b></p> <p>▶ Prof Ageeth Bol, Eindhoven University of Technology, Netherlands</p>	<p><b>Quantum sensing with a single erbium ion in silicon - 545</b></p> <p>▶ Dr Chunming Yin, University of New South Wales, NSW</p>	<p><b>Printing of recyclable, flexible and transparent piezoelectric generators through SWCNT templating - 552</b></p> <p>▶ Mr Nick Shepelin, The University of Melbourne, VIC</p>
1200 - 1215	<p><b>Liquid marbles and liquid core/shell beads: toward liquid bead based digital microfluidics - 507</b></p> <p>▶ Prof Nam-Trung Nguyen, Griffith University, QLD</p>	<p><b>A silver catalyst activated by stacking faults for the hydrogen evolution reaction - 513</b></p> <p>▶ Prof Xiwen Du, Tianjin University, China</p>	<p><b>Enhancement of electrocatalytic activity by surface dopant - 519</b></p> <p>▶ Dr Porun Liu, Griffith University, QLD</p>	<p><b>Nanoporous materials for energy and environmental related applications - 525</b></p> <p>▶ Dr Siddulu Naidu Talapaneni, The University of Newcastle, NSW</p>	<p><b>Nanowires, quantum phase slips and electromagnetic duality in quantum circuits - 532</b></p> <p>▶ Prof Jared Cole, RMIT University, VIC</p>	<p><b>Micro-solid bubble assembly for ultralight, strong, and superelastic materials - 539</b></p> <p>▶ Prof Pil Jin Yoo, Sungkyunkwan University, South Korea</p>	<p><b>Photon emission enhancement of praseodymium ions implanted with GaN nanopillars - 546</b></p> <p>▶ Dr Shin-ichiro Sat, National Institutes For Quantum And Radiological Science And Technology, Japan</p>	<p><b>Neuromorphic properties of amorphous carbon-based memristors - 553</b></p> <p>▶ Mr Thomas Raeber, RMIT University, VIC</p>
1215 - 1230		<p><b>Synthesis of novel carbon-based materials using extreme conditions - 514</b></p> <p>▶ Prof Dougal McCulloch, RMIT University, VIC</p>	<p><b>CO2 electrolysis in seawater - 520</b></p> <p>▶ Dr Chong-Yong Lee, University of Wollongong, NSW</p>	<p><b>Control of dynamic processes of active layers achieving high performance perovskite solar cell - 526</b></p> <p>▶ Prof Molang Cai, North China Electric Power University, China</p>	<p><b>Regaining a lost dimension – from InAs nanowires to InAs nanofin hall bars by templated epitaxy - 533</b></p> <p>▶ Mr Jakob Seidl, University of New South Wales, NSW</p>	<p><b>Seeded gold nanorod growth proceeds via formation of an autocatalytic surface - 540</b></p> <p>▶ Dr Susanne Seibt, RMIT University, VIC</p>	<p><b>2D freestanding janus gold plasmene nanosheets - 547</b></p> <p>▶ Dr Qianqian Shi, Monash University, VIC</p>	<p><b>Quantum resistive sensors made of graphene and metal organic frameworks for VOC biomarkers analysis - 554</b></p> <p>▶ Dr Tung Tran, The University of Adelaide, SA</p>
1230 - 1330	<p><b>Lunch</b> Room ▶ <i>Mezzanine level</i></p>							
1245 - 1325	<p><b>Lunch Q&amp;A panel session - Getting your first job</b></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><b>Chair:</b> Dr Munkhbayar Batmunkh</p> <p>Room ▶ <i>Great Hall 1&amp;2</i></p>							


	Concurrent Session 8A	Concurrent Session 8B	Concurrent Session 8C	Concurrent Session 8D	Concurrent Session 8E	Concurrent Session 8F	Concurrent Session 8G	Concurrent Session 8H
1330 - 1500	<b>Concurrent Session 8A</b>	<b>Concurrent Session 8B</b>	<b>Concurrent Session 8C</b>	<b>Concurrent Session 8D</b>	<b>Concurrent Session 8E</b>	<b>Concurrent Session 8F</b>	<b>Concurrent Session 8G</b>	<b>Concurrent Session 8H</b>
<b>Theme</b>	<b>BIONANO</b> Room ► <i>Great Hall 1&amp;2</i>	<b>NANO CHARACTERISATION &amp; MANUFACTURING</b> Room ► <i>P1</i>	<b>NANO ENERGY &amp; ENVIRONMENT</b> Room ► <i>P2</i>	<b>NANO ENERGY &amp; ENVIRONMENT</b> Room ► <i>P3</i>	<b>NANO ELECTRONICS</b> Room ► <i>P4</i>	<b>NANOMATERIALS</b> Room ► <i>P5</i>	<b>NANO PHOTONICS</b> Room ► <i>M1</i>	<b>NANO CARBON</b> Room ► <i>M2</i>
<b>Chair/s</b>	<b>Prof Andrea O'Connor and Dr Hang Ta</b>	<b>Assoc Prof Dzung Dao</b>	<b>Dr Chong-Yong Lee</b>	<b>Dr Porun Liu</b>	<b>Dr Qianqian Shi</b>	<b>Prof Madhu Bhaskaran</b>	<b>Dr Qianqian Shi</b>	<b>Assoc Prof Kate Fox and Dr Carlo Bradac</b>
1330 - 1345	<b>Organic-inorganic antimicrobial nanomaterials: synthesis, characterisation and applications in tissue engineering and medical devices - 555</b> ► Prof Andrea O'Connor, The University of Melbourne, VIC	<b>Nano-surface feneration in ultra-precision machining and applications - 560</b> ► Prof Chi Fai Cheung, The Hong Kong Polytechnic University, Hong Kong	<b>Hybrid materials and heterostructures for high-performance electronics - 565</b> ► Prof Tom Wu, University of New South Wales, NSW	<b>III-V nanowires for optoelectronic device and energy applications - 570</b> ► Prof Hoe Tan, The Australian National University, ACT	<b>Electronic transport properties of epitaxial graphene on silicon substrates - 575</b> ► Prof Francesca Iacopi, University of Technology Sydney, NSW	<b>Integration of nanocomposites and nanohybrids for catalytic applications - 581</b> ► Prof Hua Chun Zeng, National University of Singapore, Singapore	<b>Graphene metamaterials and functional devices- 586</b> ► Prof Baohua Jia, Swinburne University of Technology, VIC	<b>Hybrid nanodiamond materials: the present and future - 591</b> ► Prof Brant Gibson, RMIT University, VIC
1345 - 1400					<b>Skin-conformable and stretchable supercapacitors with Janus vertical gold nanowires - 576</b> ► Mr Tiance An, Monash University, VIC			<b>Group IV color centres in diamond for quantum photonics - 592</b> ► Prof Igor Aharonovich, University of Technology Sydney, NSW
1400 - 1415	<b>Leveraging molecular order of highly porous metal organic framework (MOF) nanoparticles for pulmonary drug delivery - 556</b> ► Asst Prof Catherine Fromen, University of Delaware, United States	<b>From nanoindentation to micro-slurry jet erosion for fracture-free lithium metasilicate glass-ceramic surfaces - 561</b> ► Dr Ling Yin, The University of Adelaide, SA	<b>Controllable growth of Cu<sub>2</sub>ZnSnSe<sub>4</sub> thin film by magnetron sputtering method and solar cell - 567</b> ► Prof Yi Zhang, Nankai University, China	<b>Rationally designed metal and carbon composites for efficient electrocatalysis - 571</b> ► Dr Xunyu Lu, University of New South Wales, NSW	<b>Defect induced optoelectronic applications of layered black phosphorus - 577</b> ► Dr Taimur Ahmed, RMIT University, VIC	<b>Vortex fluidic mediated synthesis polysulfone for membrane applications - 582</b> ► Mr Aghil Igder, Edith Cowan University, WA	<b>MEMS-based photonic coupler - 587</b> ► Mrs Shubhashree Swain, The University of Western Australia, WA	<b>Diamond as a medical material - 593</b> ► Assoc Prof Kate Fox, RMIT University, VIC
1415 - 1430	<b>Iron oxide based nanomaterials for diagnosis and treatment of cardiovascular disease - 557</b> ► Dr Hang Ta, The University of Queensland, QLD	<b>Research on the mechanism of low-temperature assisted nano-grinding of brittle materials - 562</b> ► Prof Yuanqiang Tan, Huaqiao University, Chia		<b>Surface and interface engineering of 2D material-based nanostructures toward electrocatalysis applications - 572</b> ► Dr Wenping Sun, University of Wollongong, NSW	<b>Fidelity benchmarks for two-qubit gates in silicon - 578</b> ► Dr Wister Wei Huang, University of New South Wales, NSW	<b>Modulating aptamer-NanoZyme (nanoparticles with enzyme-mimic catalytic activity) interactions for the development of colorimetric sensors - 583</b> ► Dr Rajesh Ramanathan, RMIT University, VIC	<b>Investigation of band alignment in plasmonically enhanced hot-electron devices - 588</b> ► Mr Shenyou Zhao, The Australian National University, ACT	<b>Anti-stokes excitation of solid-state quantum emitters for nanoscale sensing - 594</b> ► Dr Carlo Bradac, University of Technology Sydney, NSW
1430 - 1445	<b>Genetically encoded nanosilver resistance in priority pathogen - 558</b> ► Dr Cindy Gunawan, University of Technology Sydney, NSW	<b>Nano machining of CVD single crystal diamond (100) using a flexible polishing tool - 563</b> ► Prof Jing Lu, Huaqiao University, China	<b>Erasable and recreatable two-dimensional electron gas at the heterointerface of SrTiO<sub>3</sub> and a water-dissolvable overlayer - 568</b> ► Asst Prof Xiao Renshaw Wang, Nanyang Technological University, Singapore	<b>Alternative pathways for the conversion of carbon dioxide into fuels - 573</b> ► Dr Emma Lovell, University of New South Wales, NSW	<b>High quantum efficiency SWIR HgCdTe detectors - 579</b> ► Dr Nima Dehdashtikhavan, University of Western Australia, WA	<b>Cobalamins as reactive surface enhanced raman probes for the detection &amp; quantification of sulphite - 584</b> ► Mr Paul Denman, The University of Queensland, QLD	<b>Perovskite and plasmonic nanophotonics and optoelectronics - 589</b> ► Dr Dong Ha Kim, Ewha Womans University, South Korea	<b>Nanostructuring dynamics of deep-UV laser etched diamond surfaces - 595</b> ► Dr Amanuel Berhane, University of New South Wales, NSW
1445 - 1500	<b>Re-programming bacterial nanocompartments into photosensitizing nanoparticles - 559</b> ► Dr Andrew Care, Macquarie University, NSW	<b>Surface characteristics and deformation mechanisms of single-crystal sapphire lapped using Al<sub>2</sub>O<sub>3</sub>/GO nanostructure acidic suspensions - 564</b> ► Mr Shuiquan Huang, The University of Queensland, QLD	<b>Characterising interfaces with synchrotron-based soft x-ray spectroscopy - 569</b> ► Dr Dongchen Qi, Queensland University of Technology, QLD	<b>Electronic and optoelectronic properties of 2D germanene - 574</b> ► Assoc Prof Yi Du, University of Wollongong, NSW	<b>Synthesis of 2D GaN and InN using liquid metal solvents - 580</b> ► Dr Torben Daeneke, RMIT University, VIC			<b>Fluorescence properties of hydrogenated detonation nanodiamonds - 596</b> ► Mr Giannis Thalassinos, RMIT University, VIC



1500 - 1530	<b>Afternoon tea</b> Room ▶ <i>Mezzanine level</i>							
1530 - 1745	<b>Concurrent Session 9A</b>	<b>Concurrent Session 9B</b>	<b>Concurrent Session 9C</b>	<b>Concurrent Session 9D</b>	<b>Concurrent Session 9E</b>	<b>Concurrent Session 9F</b>	<b>Concurrent Session 9G</b>	<b>Concurrent Session 9H</b>
<b>Theme</b>	<b>BIONANO</b> Room ▶ <i>Great Hall 1&amp;2</i>	<b>NANO CHARACTERISATION &amp; MANUFACTURING</b> Room ▶ <i>P1</i>	<b>NANO ENERGY &amp; ENVIRONMENT</b> Room ▶ <i>P2</i>	<b>NANO ENERGY &amp; ENVIRONMENT</b> Room ▶ <i>P3</i>	<b>NANO ELECTRONICS</b> Room ▶ <i>P4</i>	<b>NANOMATERIALS</b> Room ▶ <i>P5</i>	<b>NANO PHOTONICS</b> Room ▶ <i>M1</i>	<b>NANO CHARACTERISATION &amp; MANUFACTURING</b> Room ▶ <i>M2</i>
<b>Chair/s</b>	<b>Prof Christopher Barner-Kowollik and Dr Alison White</b>	<b>Assoc Prof Marius Martyniuk</b>	<b>Dr Emma Lovell</b>	<b>Dr Wenping Sun</b>	<b>Prof Wenlong Cheng</b>	<b>Prof Gordon Xu</b>	<b>Dr Mohsen Rahmani</b>	<b>Prof Jian-Feng Nie</b>
1530 - 1545	<b>Nucleic acid nanogels for effective antimicrobial therapeutics - 597</b> ▶ Assoc Prof Rachel Pui Lai Ee, National University of Singapore, Singapore	<b>Toughening polymer composites at cryogenic temperatures using nanoparticles - 604</b> ▶ Prof Chun-Hui Wang, University of New South Wales, NSW	<b>Halide perovskite nanocrystals: From platelets to supercrystals - 611</b> ▶ Prof Jochen Feldmann, LMU Munich, Germany	<b>Molecular design for hybrid perovskites – from passive to active - 619</b> ▶ Prof Yeng Ming Lam, Nanyang Technological University, Singapore	<b>Plasmonics-enhanced terahertz devices and systems - 627</b> ▶ Prof Mona Jarrahi, University of California Los Angeles, United States	<b>Theoretical investigations on coordination structures for high-performance thermoelectric applications - 636</b> ▶ Dr Shuo-Wang Yang, Institute of High Performance Computing, Singapore	<b>Plasmon excitation and outcoupling in quantum mechanical tunnel junctions - 644</b> ▶ Prof Christian Nijhuis, National University of Singapore, Singapore	<b>Analysis of nanomaterial properties using in situ TEM techniques - 652</b> ▶ Prof Dmitri Golberg, Queensland University of Technology, QLD
1545 - 1600	<b>Exploring novel polymer coatings for antimicrobial applications - 598</b> ▶ Dr Hui Peng, The University of Queensland, QLD				<b>Vapour deposited PEDOT and its interaction with anions - 628</b> ▶ Assoc Prof Drew Evans, University of South Australia, SA	<b>Atomistic origin of the complex morphological evolution of aluminum nanoparticles during oxidation - 637</b> ▶ Prof Yanyan Jiang, Shandong University, China		
1600 - 1615	<b>Towards dual-purpose microcapsules with an impermeable shell - 599</b> ▶ Dr Alison White, The University of Queensland, QLD	<b>MEMS-based optical filters for spectrally adaptive remote sensing from visible, through infrared, to terahertz - 605</b> ▶ Assoc Prof Mariusz Martyniuk, The University of Western Australia, WA	<b>Transforming monolayer two-dimensional nanosheets into one-dimensional nanoscrolls for sensing applications - 612</b> ▶ Prof Hai Li, Nanjing Tech University, China	<b>Perovskite solar cell based-on carbon materials - 620</b> ▶ Prof Tingli Ma, Kyushu Institute of Technology, Japan	<b>Transition metal dichalcogenides for optoelectronic devices - 629</b> ▶ Prof Soo Young Kim, Korea University, South Korea	<b>Clay-based nanopatform for cancer therapeutic nanovaccine formulation - 638</b> ▶ Mr Lingxiao Zhang, The University of Queensland, QLD	<b>Towards plasmonic control of nitrogen-vacancy center fluorescence in nanodiamonds via metal nanoparticle self-assembly - 646</b> ▶ Dr Philipp Reineck, RMIT University, VIC	<b>In-situ TEM studies of the electro-chemo-mechanics of li-ion batteries - 653</b> ▶ Prof Jianyu Huang, Yanshan University, China
1615 - 1630	<b>A (super) bug's life: Antimicrobial particles as next generation antimicrobial strategies - 600</b> ▶ Dr James Chapman, RMIT University, VIC	<b>Enhanced stretchability of piezoelectric polymer by boron nitride nanosheets - 606</b> ▶ Dr Jin Zhang, University of New South Wales, NSW	<b>Doping effect on the electrochemical performance of transition metal dichalcogenide nanosheets - 613</b> ▶ Assoc Prof Jiabao Yi, The University of Newcastle, NSW	<b>Molecular engineering of hole transporting materials for low cost highly efficient and stable perovskite solar cells - 621</b> ▶ Prof Prashant Sonar, Queensland University of Technology, QLD	<b>Analysing the growth modes of vdW/graphene heterostructures as a function of the substrate - 630</b> ▶ Prof Nunzio Motta, Queensland University of Technology, QLD	<b>Synthesis of a biodegradable-pH sensitive self-assembled polymeric theranostics for hepatic fibrosis - 639</b> ▶ Mr Arunpandian Balaji, The University of Queensland, QLD	<b>Optical fingerprints of single nanoparticles for deep learning aided super-capacity optical multiplexing - 647</b> ▶ Miss Jiayan Liao, University of Technology Sydney, NSW	<b>Atomic-scale characterization of silicon heterojunction solar cell interface structure and its structural evolution under heating - 654</b> ▶ Prof Kun Zheng, Beijing University of Technology, China
1630 - 1645	<b>Approaches and perspectives of nanoclays in agriculture advancement - 601</b> ▶ Dr Peng Li, The University of Queensland, QLD	<b>Characterising interfacial adhesion using FIB-based micro/nano-mechanical testing methodologies - 607</b> ▶ Dr Mingyuan Lu, The University of Queensland, QLD	<b>Spintronics based on 2D ferromagnetic materials and van der waals heterostructures - 614</b> ▶ Assoc Prof Lan Wang, RMIT University, VIC	<b>Design of nano-layer for beyond 10% efficient green kesterite solar cells - 622</b> ▶ Dr Xiaojing Hao, University of New South Wales, NSW	<b>Models for electron transport in the two-dimensional allotropes of bismuth - 631</b> ▶ Dr Jackson Smith, RMIT University, VIC	<b>Porous poly(2-hydroxyethyl methacrylate) (PHEMA) hydrogels doped with silver nanoparticles – one-step synthesis, characterisation, antibacterial efficacy and biocompatibility - 640</b> ▶ Prof Murray Baker, The University of Western Australia, WA	<b>Novel ultra-sensitive semiconductor SERS substrates boosted by the coupled resonance effect - 648</b> ▶ Prof Yong Yang, Chinese Academy of Sciences, China	<b>In situ etching and functionalization of two-dimensional materials - 655</b> ▶ Assoc Prof Charlene Lobo, University of Technology Sydney, NSW

1645 - 1700	<p><b>Nanocellulose-derived materials - 602</b></p> <p>► Dr Nasim Amiralian, The University of Queensland, QLD</p>	<p><b>Bio-fluorometric gas sensing and imaging of human volatiles (Bio-sniffer &amp; Sniff-cam) - 608</b></p> <p>► Prof Kohji Mitsubayashi, Tokyo Medical and Dental University, Japan</p>	<p><b>Monolayer d1T MoTe<sub>2</sub>, a room temperature 2D ferroelectric - 615</b></p> <p>► Prof Xin Luo, Sun Yat-sen University, China</p>	<p><b>Solution-less Perovskite Photovoltaics: from the nanoscale to industry - 623</b></p> <p>► Dr Gregory Wilson, CSIRO Energy, NSW</p>	<p><b>Nanowire-based monolithic complementary proton-to-electron transducer using electron beam patterned nafion gates - 632</b></p> <p>► Prof Adam Micolich, University of New South Wales, NSW</p>	<p><b>Development of Probe-Mediated SERS Sensors for the Detection of Hydrogen Sulfide using Zinc Phthalocyanine-Functionalized Core-Satellite Nanoassemblies - 641</b></p> <p>► Mr Josua Markus, The University of Queensland, QLD</p>	<p><b>Non-contact Cryogenic Thermometry Based on Upconverting Nanoprobes - 649</b></p> <p>► Mr Yunfei Shang, University of Technology Sydney, NSW</p>	<p><b>Local electronic property of two-dimensional materials revealed by SPM - 656</b></p> <p>► Prof Mingdong Dong, Aarhus University, Denmark</p>
1700 - 1715	<p><b>Making light work of adaptive micro- and nanomaterial design - 603</b></p> <p>► Prof Christopher Barner-Kowollik, Queensland University of Technology, QLD</p>	<p><b>Ultrasensitive thermal sensing technology utilising SiC/Si nanoheterojunction - 609</b></p> <p>► Dr Toan Dinh, Griffith University, QLD</p>	<p><b>Shape matters: From one-dimensional nanorods to two dimensional nanosheets - 616</b></p> <p>► Dr Guohua Jia, Curtin University, WA</p>	<p><b>Stable and high efficiency colloidal CsPbI<sub>3</sub> quantum dots photovoltaics - 624</b></p> <p>► Prof Jianjun Tian, University of Science and Technology, China</p>	<p><b>Transport properties of a two-dimensional electron gas with spin-orbit coupling - 633</b></p> <p>► Mr Yik Kheng Lee, RMIT University, VIC</p>	<p><b>Label-free SERS nanosensor for the detection of Insulin in biological fluids - 642</b></p> <p>► Ms Saiqa Muneer, Queensland University of Technology, QLD</p>	<p><b>Making dark plasmonic modes visible with an electron beam - 650</b></p> <p>► Dr Saskia Fiedler, University of Southern Denmark, Denmark</p>	<p><b>Origin and evolution of damages for semiconductors at nanoscale induced by deformation - 657</b></p> <p>► Prof Zhenyu Zhang, Dalian University of Technology, China</p>
1715 - 1730		<p><b>Neutralised electrohydrodynamic for biomedical and micromechatronic application - 610</b></p> <p>► Dr Van Dau, Griffith University, QLD</p>	<p><b>Efficient water splitting cascade photoanodes based on BiVO<sub>4</sub> - 617</b></p> <p>► Prof Ho Won Jang, Seoul National University, South Korea</p>	<p><b>Large area InP nanopillars for solar energy conversion - 625</b></p> <p>► Prof Hoe Tan, The Australian National University, ACT</p>	<p><b>Self-powered chemical sensing with light-activated halides perovskites - 634</b></p> <p>► Dr Hongjun Chen, The Australian National University, ACT</p>	<p><b>NanoZymes as an alternative antibacterial to conventional antibiotics - 643</b></p> <p>► Mrs Pyria Rose Divina Mariathomas, RMIT University, VIC</p>	<p><b>Nanoscale effects of gigahertz light on genomic DNA - 651</b></p> <p>► Mr Nicholas Lawler, University of Western Australia, WA</p>	<p><b>Dislocation reduction in heteroepitaxy of CdTe on GaSb by using strained CdZnTe/CdTe superlattice layers - 658</b></p> <p>► Dr Wenwu Pan, The University of Western Australia, WA</p>
1730 - 1745					<p><b>Metal contacts on mesoporous silicon for MEMS based thermo-resistive sensors - 635</b></p> <p>► Mrs Pritam Sharma, University of Western Australia, WA</p>			<p><b>Graphene plasmon for surface-enhanced infrared spectroscopy - 659</b></p> <p>► Prof Qing Dai, National Centre of Nanoscience &amp; Technology, China</p>
1900 - 2300	<p><b>Conference dinner</b> Room ► <i>Great Hall 3&amp;4</i></p>							

# Thursday 13 February 2020

0730 - 1630	Registration and information desk open							
0800 - 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 ► Great Hall 1&2	NANO CHARACTERISATION & MANUFACTURING Room ► P1	NANO ENERGY & ENVIRONMENT Room ► P2	NANO ENERGY & ENVIRONMENT Room ► P3	NANOMATERIALS Room ► P4	NANOMATERIALS Room ► P5	NANO PHOTONICS Room ► M1	BIONANO Room ► M2
Chair/s	Prof Gregor Lang and Dr Jess Frith	Assoc Prof Ling Yin	Dr Cui Ying Toe	Dr Yang Bai	Prof Lan Fu	Assoc Prof Jennifer Macleod	Dr Alison Funston	Prof Rebecca Ford and Dr Ganganath Perera
			Sponsored by: <b>NEWARE NEWARE</b>				Sponsored by: <small>Australian Research Council Centre of Excellence in</small> 	
0800 - 0815		Fundamental investigations of diamond wire sawing of silicon wafers - 705 ► Prof Shreyes Melkote, Georgia Institute of Technology, United States						
0815 - 0830								
0830 - 0845	Hydrogel delivery of miRNAs to modulate mesenchymal stromal cell mechanotransduction and enhance bone formation - 700 ► Dr Jess Frith, Monash University, VIC	Silicon and silicon carbide MEMS sensors and actuators- 706 ► Assoc Prof Dzung Dao, Griffith University, QLD	Electrode design for rechargeable sodium-oxygen batteries - 712 ► Dr Bing Sun, University of Technology Sydney, NSW	Designing high-efficiency charge transport layer-free perovskite solar cells - 718 ► Dr Wuqiang Wu, The University of Queensland, QLD	Ab initio design of novel 2D electronic and magnetic materials - 724 ► Prof Jijun Zhao, Dalian University of Technology, China	Understanding wetting of 2D materials - 729 ► Prof Sushanta Mitra, Waterloo Institute for Nanotechnology, Canada	Full-color laser displays based on organic printed microlaser arrays - 734 ► Prof Yong Sheng Zhao, Chinese Academy of Sciences, China	Highly-sensitive conductometric sensors for biomarkers in human saliva and sweat - 739 ► Dr Ganganath Perera, RMIT University, VIC
0845 - 0900		Advanced micro tube forming technology - 707 ► Prof Ken-ichi Manabe, Tokyo Metropolitan University, Japan	New intercalation cathodes for aluminium-ion batteries - 713 ► Nicolo Canever, The University of Newcastle, NSW	Nano-structure for light and charge management in solar cell - 719 ► Assoc Prof Kong Liu, Chinese Academy of Sciences, China				Ratiometric two-photon nitrogen-doped carbon dot-based probe for intracellular pH sensing - 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	“Liquid Wood” parts obtained by injection molding and 3D printing - 708 ► Prof Dumitru Nedelcu, Technical University of Iasi, Romania	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 Miaojang 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	Bioinspired multiscale actuations for biomedical applications - 730 ► Prof Xuemin Du, Chinese Academy of Sciences, China	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	<b>Recombinant spider silk films and hydrogels with intrinsic bacteriostatic and fungistatic properties - 702</b> ▶ Prof Gregor Lang, University of Bayreuth, Germany	<b>Solvothermal synthesis and performance engineering of Cu<sub>2</sub>(Se,S)-based thermoelectric materials - 709</b> ▶ Mr Weidi Liu, The University of Queensland, QLD	<b>Next-generation energy system: low-cost aluminum-ion batteries and solar-rechargeable batteries - 715</b> ▶ Dr Yuxiang Hu, The University of Queensland, QLD	<b>Phenyl ester based homopolymers: promising photoactive substrates for spatial arrangement of block copolymer nanopatterns - 721</b> ▶ Dr Jiacheng Zhao, The University of Queensland, QLD	<b>Group IVA chalcogenide semiconductors: Novel layered heterostructures with unique nanoscale light-matter interactions - 726</b> ▶ Prof Peter Sutter, University of Nebraska-Lincoln, United States	<b>Compressive surface strained atomic-layer Cu<sub>2</sub>O on Cu@Ag nanoparticles - 731</b> ▶ Dr Hongpan Rong, Beijing Institute of Technology, China	<b>Direct-measurement of the quantum efficiency of single photon emitters in few-layer hexagonal boron nitride - 736</b> ▶ Mr Noah Mendelson, University of Technology Sydney, NSW	<b>Engineered biopolyester beads as a tool for specific detection of global DNA methylation - 742</b> ▶ Mr Narshone Soda, Griffith University, QLD
0930 - 0945	<b>Application of micro/nano scale substrates for skeletal muscle tissue regeneration - 703</b> ▶ Dr Sahar Salehi, University of Bayreuth, Germany	<b>Combined bottom-up and top-down approaches in 3D printing - 710</b> ▶ Dr Rouhollah Jalili, University of New South Wales, NSW	<b>Understanding the formation and dynamic nature of non-noble-metal oxide co-catalysts for photocatalytic water splitting reactions - 716</b> ▶ Dr Alexey Cherevan, Vienna University of Technology, Austria	<b>Co-sputtered nanofins for polarization and angular control - 722</b> ▶ Assoc Prof Matthew Arnold, University of Technology Sydney, NSW	<b>Multiplexed intermediate states saturation nanoscopy by Fourier spectral fusion - 727</b> ▶ Mr Chaohao Chen, University of Technology Sydney, NSW	<b>Improve the wetting of Gold-ABA filler on micromachined diamond by using nano-metallic layers via vacuum brazing technique - 732</b> ▶ Miss Khatereh Edalati, The University of Melbourne, VIC	<b>Super-transport of excitons in atomically thin organic semiconductors at the 2D quantum limit - 737</b> ▶ Dr Ankur Sharma, The Australian National University, ACT	<b>A novel Raman reporter for the nanosensing of proteins through their disulfide bond structure - 743</b> ▶ Mrs Mahnaz Davoudzadeh Gholami, Queensland University of Technology, QLD
0945 - 1000	<b>Employing recombinant venom proteins in combination with a synthetic hydrogel to control bleeding after major trauma - 704</b> ▶ Dr Amanda Kijas, The University of Queensland, QLD	<b>Nanomechanical characterizations of ceramic coatings deposited using laser cladding - 711</b> ▶ Mr Yitian Zhao, The University of Queensland, QLD	<b>Construction of Au NPs/P-C<sub>3</sub>N<sub>4</sub> heterojunction for high-performance photoelectrocatalytic monitoring and degradation of 4-chlorophenol - 717</b> ▶ Dr Lei Shi, Edith Cowan University, WA	<b>Scalable construction of functional separators to boost robust SEI membrane formation for high-stable lithium anode - 723</b> ▶ Prof Chao Lai, Jiangsu Normal University, China	<b>Defecting metal oxides with light to boost their oxidative capacity - 728</b> ▶ Assoc Prof Jason Scott, University of New South Wales, NSW	<b>Green synthesis of zeolitic imidazolate framework nanopowders and their water related applications - 733</b> ▶ Mr Mahdiar Taheri, The Australian National University, ACT	<b>Polarization dependent quantum correlation measurements of two single photon emitters - 738</b> ▶ Mr Davin Yue Ming Peng, RMIT University, VIC	<b>Specific and sensitive nanoparticle-based electrochemical detection of Botrytis cinerea, a damaging fungal plant pathogen - 744</b> ▶ Prof Rebecca Ford, Griffith University, QLD
1000 - 1030	<b>Morning tea</b> Room ▶ Mezzanine level							
1030 - 1200	<b>Concurrent Session 11A</b>	<b>Concurrent Session 11B</b>	<b>Concurrent Session 11C</b>	<b>Concurrent Session 11D</b>	<b>Concurrent Session 11E</b>	<b>Concurrent Session 11F</b>	<b>Concurrent Session 11G</b>	<b>Concurrent Session 11H</b>
<b>Theme</b>	<b>BIONANO</b> Room ▶ Great Hall 1&2	<b>NANO CHARACTERISATION &amp; MANUFACTURING</b> Room ▶ P1	<b>NANO ENERGY &amp; ENVIRONMENT</b> Room ▶ P2	<b>NANO ENERGY &amp; ENVIRONMENT</b> Room ▶ P3	<b>NANOMATERIALS</b> Room ▶ P4	<b>NANOMATERIALS</b> Room ▶ P5	<b>NANO PHOTONICS</b> Room ▶ M1	<b>BIONANO</b> Room ▶ M2
<b>Chair/s</b>	<b>Prof Kun Qian and Prof Stephen Kent</b>	<b>Dr Damon Kent</b>	<b>Dr Bing Sun</b>	<b>Dr Munkhbayar Batmunkh</b>	<b>Prof Baohua Jia</b>	<b>Prof Zhenxiang Cheng</b>	<b>Dr Fan Wang</b>	<b>Prof David Nisbet and Dr Melanie Stamp</b>
1030 - 1045	<b>Protein nanoparticle vaccines and interactions with immune cells - 745</b> ▶ Prof Stephen Kent, The University of Melbourne, VIC	<b>NMI's nanoparticle characterisation facility: supporting accurate and reproducible nanotechnology research and commercialisation - 748</b> ▶ Dr Åsa Jämting, National Measurement Institute, NSW	<b>Development of Efficient Photoanodes for Photoelectrochemical Water Splitting - 754</b> ▶ Prof Songcan Wang, Northwestern Polytechnical University, China	<b>Co-creation with citizens and stakeholders in the development of nanotechnologies in energy applications - 760</b> ▶ Assoc Prof Paul Wright, RMIT University, VIC	<b>Application of large-area hexagonal boron nitride for SERS - 766</b> ▶ Prof Hoe Tan, The Australian National University, ACT	<b>Quantum emitters in atomically thin materials - 771</b> ▶ Prof Igor Aharonovich, University of Technology Sydney, NSW	<b>High-throughput synthesis of silicon particles with optical magnetism - 776</b> ▶ Dr Glenna Drisko, Institute for Solid State Chemistry Bordeaux, France	<b>3D printing and nanomaterials - 782</b> ▶ Assoc Prof Kate Fox, RMIT University, VIC
1045 - 1100		<b>Environmental photoelectron yield spectroscopy - 749</b> ▶ Dr John Scott, University of Technology Sydney, NSW	<b>Photocatalytic performances of copper-based photocatalysts with well-defined morphologies - 755</b> ▶ Dr Cui Ying Toe, University of New South Wales, NSW	<b>Manipulation of internal chemistry of transition metals compounds for enhanced electrochemical processes - 761</b> ▶ Dr Nasir Mahmood, RMIT University, VIC	<b>In the curl: Interface-mediated formation of polymer/mineral composite micro scrolls - 767</b> ▶ Ms Viktoria Gruen, University of Bayreuth, Germany		<b>Energy transfer in single quantum dot assemblies - 777</b> ▶ Dr Alison Funston, Monash University, VIC	<b>Bioremediation of the future: Tissue-engineered pseudo-organism with toxin-induced enzyme scavenger activation by micro RNA switches - 783</b> ▶ Dr Nina Pollak, University of the Sunshine Coast, QLD

1100 - 1115	<p><b>Towards continuous detection of cell metabolites in lab on a chip devices - 746</b></p> <p>► Prof Yonggang Zhu, Harbin Institute of Technology, China</p>	<p><b>Nano-imaging of functional nanomaterials by spatially resolved X-ray diffraction - 750</b></p> <p>► Dr Tobias Schulli, The European Synchrotron, France</p>	<p><b>Fabrication of Pd-TiO<sub>2</sub> nanotube junctions with enhanced photocatalytic activity via atomic layer deposition for organic pollutants degradation - 756</b></p> <p>► Dr Andrea Merenda, Deakin University, VIC</p>	<p><b>3D MoS<sub>2</sub> foam For point-of-use water purification application - 762</b></p> <p>► Dr Vipul Agarwal, University of New South Wales, NSW</p>	<p><b>Reducing oxidative stress by enzyme-loaded nanoparticle dispersions - 768</b></p> <p>► Asst Prof Istvan Szilagyi, University of Szeged, Hungary</p>	<p><b>Tuning the band alignment of van der waals heterostructures with ferroelectric materials - 772</b></p> <p>► Mr Patrick Taylor, RMIT University, VIC</p>	<p><b>Machine learning-enabled stiffness detecting by low refractive nanoparticle - 778</b></p> <p>► Mr Xuchen Shan, University of Technology Sydney, NSW</p>	<p><b>A programmed anti-inflammatory nanoscaffold: Decoupling brain injury from inflammation - 784</b></p> <p>► Prof David Nisbet, The Australian National University, ACT</p>
1115 - 1130		<p><b>Diffraction unlimited imaging: multilateration localization of two single-photon fluorophores - 751</b></p> <p>► Mr Josef Worboys, RMIT University, VIC</p>	<p><b>ZnO nanocrystal facet-dependence of Au photodeposition and catalytic activity - 757</b></p> <p>► Assoc Prof Eric Waclawik, Queensland University of Technology, QLD</p>	<p><b>Conducting polymers for sensing in agriculture - 763</b></p> <p>► Dr Sam Rudd, University of South Australia, SA</p>	<p><b>Agricultural nanotechnology: Changing the future of crop protection - 769</b></p> <p>► Prof Neena Mitter, The University of Queensland, QLD</p>	<p><b>Optical properties of multilayered free-standing porous silicon microstructures for thermal imaging applications - 773</b></p> <p>► Ms Yaman Afandi, University of Western Australia, WA</p>	<p><b>Tailoring directional scattering of second-harmonic generation from (111)-GaAs nanoantennas - 779</b></p> <p>► Mr Mohsen Rahmani, The Australian National University, ACT</p>	
1130 - 1145	<p><b>Design of new metabolic platforms for in vitro diagnostics - 747</b></p> <p>► Prof Kun Qian, Shanghai Jiao Tong University, China</p>	<p><b>Influence of ionic surfactant adsorption on the response of GaN/AlGaIn/GaN pH sensors - 752</b></p> <p>► Mr Jianan Wang, The University of Western Australia, WA</p>	<p><b>Enhanced adsorption of Cr(VI) on BiOBr under alkaline conditions: Interlayer anion exchange - 758</b></p> <p>► Dr Tao Yu, Tianjin University, China</p>	<p><b>Mg based nanotechnologies to control clay swelling in coal seam gas wells - 764</b></p> <p>► Dr Tom Rufford, The University of Queensland, QLD</p>	<p><b>Vortex fluidic mediated synthesis of macroporous bovine serum albumin-based microspheres - 770</b></p> <p>► Dr Xuan Luo, Flinders University, SA</p>	<p><b>Efficient and layer-dependent exciton pumping in atomically thin organic-inorganic heterostructures - 774</b></p> <p>► Dr Linglong Zhang, The Australian National University, ACT</p>	<p><b>InAs-nanowire-based broadband ultrafast optical switch - 780</b></p> <p>► Mr Vladislav Khayrudinov, Aalto University, Finland</p>	<p><b>Structural studies of phase-separating human gene regulatory proteins and their role in the structure and formation of membraneless organelles - 785</b></p> <p>► Prof Charlie Bond, The University of Western Australia, WA</p>
1145 - 1200		<p><b>In situ small-angle x-ray scattering measurements of ion track etching in polymers - 753</b></p> <p>► Mr Alexander Kiy, The Australian National University, ACT</p>	<p><b>Defects engineered carbon nitride for artificial photosynthesis - 759</b></p> <p>► Mr Jinqiang Zhang, Edith Cowan University, WA</p>	<p><b>Solar vapour generation by photo-reduced graphene oxide membrane - 765</b></p> <p>► Mr Tieshan Yang, Swinburne University of Technology, VIC</p>		<p><b>Enhancing properties of MoS<sub>2</sub> for photo catalyst applications by using ferroelectric materials - 775</b></p> <p>► Mr Dimuthu Wijethunge, Queensland University of Technology, QLD</p>	<p><b>Spectroscopic study of upconversion nanoparticles - 781</b></p> <p>► Dr Jiajia Zhou, University of Technology Sydney, NSW</p>	<p><b>Acoustic neuromodulation in cortical neurons and retinal tissue - 786</b></p> <p>► Dr Melanie Stamp, The University of Melbourne, VIC</p>
1200 - 1300	<p><b>Lunch</b> Room ► <i>Mezzanine level</i></p>							
1215 - 1255	<p><b>Lunch Q&amp;A panel session - Fostering successful academic-industry partnerships in nanotechnology</b></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><b>Chair:</b> Dr Mohan Krishnamoorthy</p> <p>Room ► <i>Great Hall 1&amp;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
<b>Theme</b>	<b>BIONANO</b> Room ► <i>Great Hall 1&amp;2</i>	<b>NANO CHARACTERISATION &amp; MANUFACTURING</b> Room ► <i>P1</i>	<b>NANO ENERGY &amp; ENVIRONMENT</b> Room ► <i>P2</i>	<b>NANO ENERGY &amp; ENVIRONMENT</b> Room ► <i>P3</i>	<b>NANOMATERIALS</b> Room ► <i>P4</i>	<b>NANOMATERIALS</b> Room ► <i>P5</i>	<b>NANO PHOTONICS</b> Room ► <i>M1</i>	<b>NANO COMMERCIALISATION</b> Room ► <i>M2</i>
<b>Chair/s</b>	<b>Prof Kristofer Thurecht and Dr Changkui Fu</b>	<b>Prof Zhi-gang Chen</b>	<b>Prof Songcan Wang</b>	<b>Dr Yuxiang Hu</b>	<b>Prof Ebinazar Namdas</b>	<b>Dr Xiaoming Yuan</b>	<b>Dr Jiajia Zhou</b>	<b>Prof Darren Martin</b>
1300 - 1315	<b>Development of architectural polymers for biomedical imaging and therapy - 787</b> ► Assoc Prof Kristofer Thurecht, The University of Queensland, QLD	<b>Role of nanoscale metastable phases in strengthening advanced Ti alloys - 792</b> ► Dr Damon Kent, University of the Sunshine Coast, QLD	<b>Electronic structure of fast-ion conducting alkali metal vanadium phosphates - 798</b> ► Dr Tristram Jenkins, Queensland University of Technology, QLD	<b>High efficiency perovskite materials for solar applications - 804</b> ► Prof Kylie Catchpole, The Australian National University, ACT	<b>Engineered metal-doped mesoporous silica nanoreactors for chemodynamic therapy - 809</b> ► Assoc Prof Ranjith Kumar Kankala, Huaqiao University, China	<b>Tuning of electron configurations in transition metal oxides for higher OER - 815</b> ► Prof Zhenxiang Cheng, University of Wollongong, NSW	<b>Metaphotonics and metasurfaces governed by Mie-resonant nanoparticles - 821</b> ► Prof Yuri Kivshar, The Australian National University, ACT	<b>Commercialisation of novel materials and processes: Challenges and highlights - 826</b> ► Dr Murray Height, HeiQ Australia, QLD
1315 - 1330		<b>Understanding the role of surface oxides in HVOF thermal spray coatings - 793</b> ► Dr William Trompeter, GNS Science, New Zealand	<b>Plasmonic photocurrent transients reveal charge carrier dynamics in plasmon driven catalysis - 799</b> ► Dr Eser Metin Akinoglu, The University of Melbourne, VIC		<b>Multifunctional smart polyester fabric fabricated by electrodepositing ZnO - 810</b> ► Miss Mihiri Ekanayake, Queensland University of Technology, QLD	<b>Ultrasonic spray pyrolysis of doped tin oxide films for transparent electrode applications - 816</b> ► Mr Jaewon Kim, RMIT University, VIC		
1330 - 1345	<b>Single-molecule and super-resolution microscopy for intracellular membrane dynamics - 788</b> ► Dr Qian Su, Institute for Biomedical Materials & Devices, NSW	<b>High-yield synthesis of nanometer-thick S-doped MoTe<sub>2</sub> by a facile chemical vapour deposition method - 794</b> ► Miss Yuzhe Yang, The University of Queensland, QLD	<b>Insight into the effect of spatial distribution of MoS<sub>2</sub> on CdS Nanorods - 800</b> ► Miss Xinlin Lu, Particles and Catalysis Research Group, NSW	<b>Interfacial engineering of carbon electrodes for efficient and stable perovskite solar cells - 805</b> ► Dr Munkhbayar Batmunkh, Griffith University, QLD	<b>The effect of fluorescent nanodiamond particle size on cellular function- 811</b> ► Ms Emma Wilson, RMIT University, VIC	<b>High performance graphene-conductive polymer (PEDOT) nanocomposites for ultra-wide band microwave antennas - 817</b> ► Dr Tung Tran, The University of Adelaide, SA	<b>Optically reconfigurable metasurface for terahertz wave-front modulation - 822</b> ► Prof Yan Zhang, Capital Normal University, China	<b>Vortex fluidics assisted in-situ Small Angle Neutron Scattering for nano-encapsulation of fish oil formulation and its applications - 827</b> ► Assoc Prof Shan He, Guangzhou University, China
1345 - 1400	<b>Targeting glycans on diseased brain cells with fluorescent nanodiamonds- 789</b> ► Dr Lindsay Parker, Macquarie University, NSW	<b>Measurements of sub-nanometric shifts in lattice parameters due to residual stress in self-piercing riveting (SPR) joint - 795</b> ► Dr Rezwanaul Haque, University of the Sunshine Coast, QLD	<b>Computation of the performance of dye-sensitized solar cells by a mathematical model - 801</b> ► Mr Benjamin Maldon, The University of Newcastle, NSW	<b>Strategies toward stable and efficient perovskite photovoltaics - 806</b> ► Dr Yang Bai, The University of Queensland, QLD	<b>Existence of the navier slip condition for liquid flows around nanoparticles - 812</b> ► Dr Jesse Collis, The University of Melbourne, VIC	<b>One-step deposition of copper/cuprous copper oxide core-shell nanocrystals on highly conductive graphene sheet electrode - 818</b> ► Dr Xiaojing Zhou, The University of Newcastle, NSW		<b>Underpinning standards development for advanced materials: An introduction to VAMAS - 828</b> ► Dr Victoria Coleman, National Measurement Institute Australia, NSW
1400 - 1415	<b>Novel electrochemical assay for sensitive quantification of exosomal miRNA associated with preeclampsia - 790</b> ► Dr Muhammad Umer, Griffith University, QLD	<b>Local geometrical error corrections for a metrological scanning probe microscope - 796</b> ► Dr Bakir Babic, National Measurement Institute, NSW	<b>Developing high performance lead-free Cs<sub>2</sub>AgBiBr<sub>6</sub> double perovskite solar cells in a low cost planar structure - 802</b> ► Mrs Mehri Ghasemi, The University of Queensland, QLD	<b>Electrochemical nitrogen reduction reaction on two-dimensional antimonene nanosheets for ammonia synthesis - 807</b> ► Mrs Munkhjargal Bat-Erdene, The University of Queensland, QLD	<b>Auto-programmed heteroarchitecturing: Self-assembling ordered mesoporous materials with two-dimensional Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub> MXene layers - 813</b> ► Dr Jie Wang, National Institute of Materials Science, Japan	<b>Self-assembled hybrid nanocrystals as advanced optoelectronic materials - 819</b> ► Ms Anum Nisar, Monash University, VIC	<b>Multiple state thermally tunable metasurfaces - 824</b> ► Mr Mohsen Rahmani, The Australian National University, ACT	<b>Spinifex nanotechnology: A university – Indigenous community partnership for nanomaterials commercialisation - 829</b> ► Dr Celine Chaleat, The University of Queensland, QLD

1415 - 1430	<p><b>Synthesis and application of advanced fluoropolymers as 19F MRI contrast agents - 791</b></p> <p>► Dr Chagkui Fu, The University of Queensland, QLD</p>	<p><b>Effect of various urea concentrations on nitrogen slow release from PLLA nanofiber mat - 797</b></p> <p>► Mrs Leila Javazmi, The University of Southern Queensland, VIC</p>	<p><b>Electrocatalytic nanoparticles that mimic the three-dimensional geometric architecture of enzymes: The importance of nanoscale confinement on electrocatalytic performance - 803</b></p> <p>► Ms Johanna Wordsworth, University of New South Wales, NSW</p>	<p><b>Crystal growth mechanism of chromium-based metal organic frameworks and their superior adsorptive performance - 808</b></p> <p>► Assoc Prof Yunfei Xi, Queensland University of Technology, QLD</p>	<p><b>Fabrication of solid-state nano-pore graphene composite membranes - 814</b></p> <p>► Mr Shankar Dutt, The Australian National University, ACT</p>	<p><b>Highly transparent and conductive nanomesh films - 820</b></p> <p>► Dr Tengfei Qiu, The University of Queensland, QLD</p>	<p><b>Photonic devices in single crystal (111) diamond membrane - 825</b></p> <p>► Mr Blake Regan, University of Technology Sydney, NSW</p>	<p><b>Spinifex nanocellulose nanotechnology: The uniqueness and industrial applications - 830</b></p> <p>► Dr Pratheep Kumar Annamalai, The University of Queensland, QLD</p>
1430 - 1500	<p><b>Afternoon tea</b> Room ► <i>Mezzanine level</i></p>							
1500 - 1545	<p><b>Plenary speaker presentation: Organic nano-crystals in the eyes of aquatic organisms: Biogenic scatterers, mirrors, multilayer reflectors and photonic crystals - 831</b> Prof Lia Addadi, Weizmann Institute of Science, Israel <b>Chair:</b> Assoc Prof Chun-Xia Zhao, The University of Queensland Room ► <i>Great Hall 1&amp;2</i></p>							
1545 - 1630	<p><b>Plenary speaker presentation: Nanoscience and nanotechnology: The role of computation at the atomic level - 832</b> Prof Debra Bernhardt (Searles), The University of Queensland <b>Chair:</b> Prof John Bell, University of Southern Queensland Room ► <i>Great Hall 1&amp;2</i></p>							
1630 - 1645	<p><b>Closing ceremony</b></p>							