



Monday 27 June 2022

Pyrmont Theatre				
AEST	Opening Ceremony Chairperson: Prof Sven Rogge			
11:45 - 12:00	Acknowledgement of Country KARI Singers			
12:00 - 12:10	NSW Minister Science Innovation and Technology Address Alister Henskens			
12:10 - 12:20	Australia's Chief Scientist Address Dr Cathy Foley			
	ICPS Symposium Chairperson: Prof Michelle Simmons			
12:25 - 13:00	1068: Quantum metrology: A revolution for a more stable future Dr Klaus Von Klitzing			
13:00 - 13:35	505: Topological materials science Prof Claudia Felser Remote Presentation			
13:35 - 13:50	Break			
13:50 - 14:25	627: From materials to quantum devices and back again Prof Giulia Galli			
14:25 - 15:00	1074: Twist-controlled van der Waals heterostructures Prof Kostya Novoselov			
15:00 - 15:45	Afternoon Tea			
Pyrmont Theatre	Meeting Room C2.1	Meeting Room C2.2	Meeting Room C2.3	
Low dimensional systems (Quantum Hall, transport theory, 1D, 2D) Chairperson: Prof Jodie Bradby	Quantum optics, nanophotonics Chairperson: A/Prof Jeffrey McCallum	Material growth, structural properties, characterization, phonons Chairperson: Prof Karen L Kavanagh	2D materials beyond graphene Chairperson: Prof Michael Fuhrer	
15:45 - 16:00	821: Optical interaction of the NV- centre in diamond with a plasmonic metal nanoparticle Dr Harini Hapuarachchi	196: Regaining a Lost Dimension – From 1D InAs Nanowires to 2D Nanofins by Templated Epitaxy Prof Adam Micolich	1057: Polarized Exciton Emission Reveals Local Spin Chains in a van der Waals antiferromagnet Xiaoqin (Elaine) Li	
16:00 - 16:15	1070: Probing the unique spin properties of semiconductor holes with one-dimensional quantum point contacts Alex Hamilton	572: Reducing the quantum noise of photoluminescence with a spectral filter and a weak Kerr nonlinearity Dr Lorenzo Scarpelli	795: (111) NiO epitaxial layers embedded with crystallographically oriented magnetic Ni-clusters Dr Santosh Kumar Yadav	
16:15 - 16:30	47: Terahertz-induced oscillations in encapsulated monolayer graphene. Prof Jesus Inarrea	969: Deterministic source of indistinguishable photons in a cluster state Dr Dan Cogan	29: New semiconductor/superconductor hybrids: increasing material choice, electrical stability, critical temperatures and critical fields. Dr Damon Carrad	270: Resonant Raman Spectroscopy Of Few Layer Molybdenum Telluride (mote2) Prof Adam Babinski
16:30 - 16:45	847: Gate tuning of fractional quantum Hall effects in InAs/AlGaSb quantum wells Dr Hiroshi Irie	1013: Hexagonal boron nitride for integrated quantum photonics Mr Sejeong Kim	500: Influence of local substrate temperature on Mn incorporation and magnetic properties in MBE growth of (Ga,Mn)N layers Dr Katarzyna Gas	981: Reaction mechanisms of molecules with point defects in TMD films Miss Daria Kleczka
16:45 - 17:00	255: Low-Noise GaAs Quantum Dots for Quantum Photonics Mr Giang N. Nguyen	335: Substrate effects on the growth modes of van der Waals/graphene heterostructures Mrs Negar Zebardastan	106: Single-defect-induced random telegraph signals in a molybdenum disulfide vertical transistor Prof Gil-Ho Kim	
17:00 - 17:15		977: Observation of Photonic Zitterbewegung Effect in a Hexagonal Lattice Microcavity Mr Seth Lovett	214: Analysis Of Thin Germanium-rich SiGe Layers On Si(111) substrates Ms Hannah Genath	128: Black phosphorus phase retarder based on anisotropic refractive index dispersion Mr Seong-Yeon Lee
17:15 - 17:30		96: High-resolution spectroscopy of a quantum dot driven bichromatically by two strong coherent fields Ms Katarina Boos	699: The first empirical formula for the bandgap of wurtzite AlGaAs Prof Nika Akopian	856: Rydberg series of excitons split by exchange interaction in highly anisotropic rhenium disulfide Dr Piotr Kapuscinski
17:30 - 19:00	Welcome Reception and Poster Session			



**35th International Conference on the Physics of Semiconductors 2022**  
27 - 30 June 2022  
ICC Sydney



**Tuesday 28 June 2022**

Pyrmont Theatre				
Plenary Address Chairperson: Prof Dane McCamey				
8:45 - 9:20	1064: Semiconductor quantum dots for optical quantum technologies <b>Prof Pascale Senellart</b>			
9:20 - 9:55	621: Magic-Angle Twisted Bilayer Graphene <b>Prof Allan Macdonald</b>			
9:55 - 10:30	608: Topological Physics in HgTe-based Quantum Devices <b>Prof Laurens Molenkamp</b>			
10:30 - 11:00	Morning Tea			
Pyrmont Theatre	Meeting Room C2.1	Meeting Room C2.2	Meeting Room C2.3	
Carbon/nanotubes/graphene Chairperson: Prof Gil-Ho Kim	Optical properties, optoelectronics, solar cells Chairperson: Prof Lan Fu	Electron devices and applications, MIR and Thz Devices Chairperson: Prof Dane McCamey	Material growth, structural properties, characterization, phonons Chairperson: Prof Paul Koenraad	
11:00 - 11:30	619: Super-moiré lattices <b>Prof Francois Peeters</b>	451: AlGaIn/GaN Heterostructures for THz Optopair <b>Dr Maciej Sakowicz</b>	763: High-Quality Large-Area Growth of MoS <sub>2</sub> Monolayers using Combinational Phase Precursor based Chemical Vapor Deposition <b>Mr Ary Wibowo</b>	
11:15 - 11:30		549: Nonlocality Driven Electroluminescence in Polar Nanosystems <b>Dr Christopher Gubbin</b>	888: Selective Area Grown PbTe Nanowire Networks <b>Mr Jason Jung</b>	
11:30 - 11:45	907: Carbon Quantum Dots under High Pressures <b>Dr Qingbo Sun</b>	731: Reconstructing hot-carrier dynamics in GaAs nanowires at the few-femtosecond timescale using high-throughput spectroscopy under ultra-low excitation conditions <b>Dr Patrick Parkinson</b>	909: Thermoradiative Power Conversion from HgCdTe Photodiodes <b>Dr Michael Nielsen</b>	1075: Unravelling the electronic transport properties of Narrow Bandgap InAs/InGaSb Superlattices <b>Dr Gilberto A. Umana-Membreno</b>
11:45 - 12:00	890: Suppressing remote optical phonon scattering in graphene below room temperature with touch-printed oxide <b>Mr Matt Gebert</b>	782: Voltage Imaging in Solution using Fluorescent p-n Junctions in Diamond <b>Dr Daniel McCloskey</b>	547: Semiconductor Nanomaterials For Terahertz Photonics: Towards Ultrafast Devices <b>Prof Hannah Joyce</b>	675: Possible Excitonic Insulating Phase in Quantum-Confined Sb Nanoflakes <b>Dr Zhi Li</b>
12:00 - 12:15		187: Laser Writing Of Quantum Dots By Photonic Nanojets <b>Prof Francesco Biccari</b>		
12:15 - 12:45	IUPAP Awardee Session Low-Power Electronics and Strong Light-Matter Coupling with 2D Semiconductors <b>Prof. Deep Jariwala</b>	Lunch		
12:45 - 13:15	IUPAP Awardee Session Prof. Dmitri Efetov Remote Presentation			
	Next Generation Science Chairperson: Prof Michelle Simmons 12:00 - 12:40			
Pyrmont Theatre	Meeting Room C2.1	Meeting Room C2.2	Meeting Room C2.3	
Low dimensional systems (Quantum Hall, transport theory, 1D, 2D) Chairperson: Prof Michael Fuhrer	Charge, valley and spin qubits Chairperson: Prof Susan Coppersmith	Wide-bandgap semiconductors (GaN, SiC, Ga <sub>2</sub> O <sub>3</sub> , BN) Chairperson: Dr Aurelien David	Topological states of matter, topological insulators and Weyl semimetals, Majorana fermions in solid state Chairperson: A/Prof Dimi Culcer	
13:15 - 13:30	962: Work fluctuations in an information engine based on a semiconductor quantum dot <b>Mr David Barker</b>	612: Telecom spin-photon interfaces in silicon <b>A/Prof Stephanie Simmons</b>	642: The role of metal vacancies in thermal degradation of InGaN <b>Dr Julita Smalc-Koziorowska</b>	1055: Majorana bound states in topological insulators without a vortex <b>Jelena Klinovaja</b>
13:30 - 13:45				
13:45 - 14:00	591: Measurement of a hierarchy of modes in an interacting 1D system beyond the linear Luttinger regime <b>Prof Christopher Ford</b>	271: 3-Dimensional Tuning of an Atomically Defined Silicon Tunnel Junction <b>Matthew Donnelly</b>	648: Enabling Diamond Nanoelectronics by Solid-State Surface Transfer Doping <b>A/Prof Dongchen Qi</b>	24: Resonant photovoltaic effect in doped magnetic semiconductors <b>Dr Pankaj Bhalla</b>
14:00 - 14:15		577: Readout and coherent control of precision atom qubits in isotopically pure silicon* <b>Dr Pascal Macha</b>	525: Magnetization Steps in Dilute Bulk GaN:Mn <b>Dr Katarzyna Gas</b>	928: Tunable 4π-periodic supercurrent in HgTe-based topological nanowires <b>Mr Wolfgang Himmler</b>
14:15 - 14:30	842: Hall potential profiles and current distributions in fractional quantum Hall regimes scanned by single-electron transistor microscope at 40 mK <b>Mr Lukas Freund</b>	828: Combining n-MOS Charge Sensing with p-MOS Silicon Hole Double Quantum Dots in a CMOS platform <b>Mr Ikkyeong Jin</b>	1050: Understanding and tailoring unique electronic and phononic hBN properties <b>Giorgia Fugallo</b>	853: Large magnetic gap in a designer ferromagnet-topological insulator-ferromagnet heterostructure <b>Mr Qile Li</b>
14:30 - 14:45	894: Universal hydrodynamic flow in a two dimensional electron fluid in a GaAs/AlGaAs heterostructure <b>Dr Aydin Keser</b>	501: Graphene quantum dots: spin and valley degrees of freedom <b>Ms Rebekka Garreis</b>		Tuning the Edge States of Topological Crystalline Insulators via Substrate Effects <b>A/Prof Nikhil Medhakar</b>
14:45 - 15:00		211: Engineering Long Spin Coherence Times Of Spin-orbit Systems <b>Dr Takashi Kobayashi</b>	778: Quantum microscopy with a van der Waals quantum sensor <b>Mr Sam Scholten</b>	
15:00 - 15:15		942: Electric field tunable transition dipole moments and selective optical charging of a single QD molecule <b>Mr Frederik Bopp</b>	630: Point defects in wide-band-gap semiconductors for quantum information applications <b>Dr Mark Turiansky</b>	
15:15 - 15:30		569: Coherent spin control of s-, p-, d- and f-electrons in a silicon quantum dot <b>Dr Andre Saraiva</b>		
15:30 - 16:00	Afternoon Tea			
Pyrmont Theatre	Meeting Room C2.1	Meeting Room C2.2	Meeting Room C2.3	
2D materials beyond graphene Chairperson: Prof Michael Fuhrer	Quantum optics, nanophotonics Chairperson: Dr Marianne Bathen	Charge, valley and spin qubits Chairperson: Prof Susan Coppersmith	Spintronics and spin phenomena Chairperson: Prof Jodie Bradby	
16:00 - 16:15	1060: 2D-materials-based mixed-dimensional structures and optoelectronic device applications <b>Suk-Ho Choi</b>	967: Nanoscale, tunnelling electroluminescence mapping of single photon emission on an engineered SiC surface <b>Dr Alistair Rowe</b>	461: Time-resolved photoionization detection of a single Er <sup>3+</sup> ion in silicon <b>Dr Gabriele de Boo</b>	553: Spin-orbit Torques Using Van Der Waals Materials <b>Dr Marcos Guimarães</b>
16:15 - 16:30		952: Chiral light-matter interaction using a quantum dot in a microcavity <b>Ms Nadia Olympia Antoniadis</b>	843: Magnetic fields for protecting silicon T centre nuclear spin qubits <b>Mr Joshua Kanaganayagam</b>	
16:30 - 16:45	184: Strongly Correlated States of Charged Interlayer Excitons in van der Waals Heterostructures <b>Prof Igor Bondarev</b>	940: A quantum dot in a microcavity as a bright source of coherent single photons <b>Dr Natasha Tomm</b>	574: Engineering hyperfine Stark shifts for high-speed gates in donor molecules in silicon <b>Mr Michael Jones</b>	861: New details of spin-dependent recombination in dilute nitrides <b>Ms Agatha Ullbarri</b>
16:45 - 17:00	259: The resonant Raman scattering in monolayer WS <sub>2</sub> - the effect of the excitonic charge state <b>Prof Adam Babinski</b>	840: Single photon emission from sulfur vacancies in monolayer MoS <sub>2</sub> : insight from high-field magnetospectroscopy <b>Dr Andreas Stier</b>	931: Spin-valley-based quantum gates and decoherence in a silicon quantum dot adjacent to micromagnets <b>Dr Xuedong Hu</b>	149: Carrier-induced Magnetism in a van der Waals Semiconductor <b>Dr Ivan Verzhbitskiy</b>
17:00 - 17:15	868: Phase modulation of self-gating in ionic liquid-functionalized InSe field-effect transistors <b>Dr Shao-Yu Chen</b>	865: Quantum Control of the Tin-Vacancy Spin Qubit in Diamond <b>Miss Cathryn Michaels</b>	905: Effect of ionization shock in multi-donor qubits <b>Mr Md Serajum Monir</b>	867: Magnetic ion relaxation time distribution within quantum well <b>Miss Aleksandra Lopion</b>
17:15 - 17:40	366: Fast Adiabatic Switching Of Floquet-bloch States In Monolayer WS <sub>2</sub> Reveals Coherent Dynamics <b>Dr Stuart Earl</b>	770: Metallic nano-rings for broadband extraction of quantum light <b>Dr Luca Sapienza</b>	1016: Spin lifetime in bilayer graphene quantum dots <b>Ms Rebekka Garreis</b>	336: Long-lived spin dynamics in light-induced confinement potential generated in GaAs quantum wells <b>Dr Haruki Sanada</b>
17:30 - 19:00	Poster Session			



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**Wednesday 29 June 2022**

Meeting Room C2.2				
AEST	Women in Science and Technology Breakfast Chairperson: Prof Jodie Bradby			
7:30 - 8:45	Women in Science and Technology Breakfast			
Pyrmont Theatre				
AEST	Plenary Address Chairperson: A/Prof Jeffrey McCallum			
8:45 - 9:20	Liquid-activated quantum emission from native hBN defects for nanofluidic sensing <b>Aleksandra Radenovic</b>			
9:20 - 9:55	646: Gallium Oxide: Traditional but Emerging Semiconductor <b>Dr Masataka Higashiwaki</b>			
9:55 - 10:30	127: Exciton Dynamics In Van Der Waals Layered Materials <b>Prof Young Hee Lee</b>			
10:30 - 11:00	Morning Tea			
Pyrmont Theatre	Meeting Room C2.1	Meeting Room C2.2	Meeting Room C2.3	
Equity, Diversity and Inclusion in Semiconductor Physics Chairperson: Misha Schubert	Quantum optics, nanophotonics Chairperson: Dr Alistair Rowe	Material growth, characterisation/2D Materials Chairperson: Prof Paul Koenraad	Charge, valley and spin qubits Chairperson: Dr Gabriele de Boo	
11:00 - 11:15	626: Quantum Wells in Nanowires: Materials and Devices <b>Prof Lan Fu</b>	961: Resonant tunneling between quantized subbands of few-layer WSe <sub>2</sub> in van der Waals double quantum well structures <b>Mr Kei Kinoshita</b>	Valley and Qubit States in a Si/SiGe Quantum Dot with a Spatially-Modulated Ge concentration <b>Prof Mark Eriksson</b>	
11:15 - 11:30		966: Ultrafast dynamics of Rydberg excitons in monolayer WSe <sub>2</sub> <b>Dr Armando Genco</b>		
11:30 - 11:45	963: Spectral broadening of a single Er Ion in a Si nano-transistor <b>Prof Chunming Yin</b>	1018: Robust spin coherence with fast optical access for the zinc-vacancy in ZnSe <b>Mr Erik Kirstein</b>	274: Electrical control of the g-tensor of the first hole in a silicon MOS quantum dot <b>Mr Scott Liles</b>	
11:45 - 12:00	760: Stimulated generation of indistinguishable single photons from a quantum ladder system <b>Prof Kai Müller</b>	232: Topological Thin Films By Molecular Beam Epitaxy <b>Mr Alex Lygo</b>	881: Quantum simulation of exciton transport in a Germanium 4x2 quantum dot array <b>Mr Pablo Cova Fariña</b>	
12:00 - 12:15	424: Optical properties of ripening-assisted grown InAs/InP quantum dots as triggered single-photon sources around telecom C-band <b>Mr Pawel Holewa</b>		163: Roughness of Si/SiO <sub>2</sub> interface. How it impacts CMOS spin qubits? <b>Mr Jesus David Cifuentes Pardo</b>	
12:15 - 12:45	IUPAP Awardee Session <b>Prof. Cheng Gong</b>	Lunch		
12:45 - 13:15	IUPAP Awardee Session <b>Dr. Michael Saliba</b>			
Pyrmont Theatre	Pyrmont Theatre	Meeting Room C2.2	Meeting Room C2.3	
2D materials beyond graphene Chairperson: Prof Michael Fuhrer	Optical properties, optoelectronics, solar cells Chairperson: Prof Lan Fu	Topological states of matter/electron devices Chairperson: Jelena Klinovaja	Electron devices and applications, MIR and THz Devices Chairperson: Prof Hannah Joyce	
13:15 - 13:30	841: Hybrid dark excitons in monolayer MoS <sub>2</sub> <b>Dr Dmitry Efimkin</b>	848: Micro-LED with transition metal dichalcogenide hybrid device as an ultrafast pseudo-electroluminescence single-photon emitter <b>Mr Kacper Oreszczuk</b>	669: Understanding Magnetic and Topological Coupling in Ultra-thin MnBi <sub>2</sub> Te <sub>4</sub> <b>Mr Qile Li</b>	721: Generalized Weisskopf-Wigner Model of Triboelectroluminescence <b>Prof Lok Lewyanvooon</b>
13:30 - 13:45		800: Analysis of the microwave dissipative parametric gain in biased GaAs/AlGaAs superlattice <b>Mr Vladislav Čizás</b>	1062: Topological transistors - overcoming Boltzmann's tyranny and mobility limitations <b>A/Prof Dimi Culcer</b>	367: Boundary induced auxiliary features in scattering-type nanoIR spectroscopy and high-Q phonon-polaritons in spatially confined freestanding biaxial alpha-MoO <sub>3</sub> <b>Dr Jiong Yang</b>
13:45 - 14:00	837: Ferroelectricity and scaling of domain wall network in twisted bilayers of transition metal dichalcogenides <b>Dr Vladimir Enaldiev</b>	269: Hexagonal Boron Nitride: An Emerging Platform For Nanophotonics <b>Dr Trong Toan Tran</b>	908: New signatures of spin-orbit and topological spin gap in 1D quantum wires <b>Dr Karina Hudson</b>	901: 2D Chalcogenides and 3D Nitrides for Low-Power Logic and Memory Devices <b>Prof Deep Jariwala</b>
14:00 - 14:15	943: Exciton-polaron interactions in monolayer WS <sub>2</sub> <b>Mr Jack Muir</b>		819: Majorana modes with side features in magnet-superconductor hybrid systems <b>Mr Dan Crawford</b>	851: Controlling the error mechanism in a tunable-barrier single-electron pump by dynamic gate compensation <b>Dr Hans W. Schumacher</b>
14:15 - 14:30	937: Magneto-modulated reflectance study of exciton Landé-g factor in 2H-MoS <sub>2</sub> <b>Mr Dibya Sankar Das</b>	260: Magnetic-field-induced second harmonic generation of excitons in cuprous oxide <b>Mr Andreas Farenbruch</b>	910: Engineering topological states in atom-based semiconductor quantum dots <b>Mr Mitchell Kiczynski</b>	668: Terahertz semiconductor devices <b>Prof Roger Lewis</b>
14:30 - 14:45	785: P-type Ohmic contact to monolayer WSe <sub>2</sub> field-effect transistors using high electron affinity amorphous MoO <sub>3</sub> <b>Mr Yi-Hsun Chen</b>	157: Intraband absorptivity in two-step photon up-conversion solar cells <b>Dr Yukihiko Harada</b>	155: Spectroscopic Visualization Of A Robust Electronic Response Of Semiconducting Nanowires To Deposition Of Superconducting Islands <b>Dr Jonathan Reiner</b>	
14:45 - 15:00	898: Strong Light-Matter Interactions in 2D Excitonic and Magnetic Semiconductors <b>Prof Deep Jariwala</b>	899: Measurement of Optical Dispersion Relations of Tungsten Disulfide Membranes <b>Mr Dong-Jin Shin</b>	972: Contactless characterization of SiO <sub>x</sub> /c-Si interface applied to pMOS devices for the development of fabrication processes <b>Dr Mickael Lozac'h</b>	783: Phase measurement in double quantum dot in parallel in Kondo regime <b>Prof Mikio Eto</b>
15:00 - 15:15	707: Interlayer coupling in artificially stacked MoS <sub>2</sub> bilayers <b>Miss Magdalena Grzeszczyk</b>	1061: Light-harvesting, self-powered and ultrasensitive physical sensing based on SiC/Si heterostructures <b>Dr Toan Dinh</b>	410: Effects of Hydrogen Radical Treatment on Piezoresistance Coefficients of Germanium <b>Prof Kazunori Matsuda</b>	839: Novel electron cooling effect in multiple quantum wells - Quantum Cascade Cooling <b>Dr Chloe Salhani</b>
15:15 - 15:30	862: Controlled coherent coupling and dynamics of excitons in a monolayer semiconductor <b>Mr Aleksander Rodek</b>	979: Tuning G-centres emission with strain <b>Mr Andrea Ristori</b>	Semiconductor Device Fabrication at the Australian National Fabrication Facility <b>Dr Nadia Court</b>	1058: Twenty years of terahertz quantum cascade lasers – the challenges and the opportunities <b>Edmund Linfield</b>
15:30 - 15:45	906: Direct measurement of biexcitons in monolayer WS <sub>2</sub> <b>Mr Mitchell Conway</b>	995: Spatially and time-resolved optical luminescence in core-shell InGaN/GaN nanowires excited with a X-ray nanobeam <b>Dr Valentina Bonino</b>	3D Silicon On Insulator (SOI) radiation detector technology and its application in particle therapy <b>Dr Linh Tran</b>	
15:45 - 16:15	Afternoon Tea			
Pyrmont Theatre	Meeting Room C2.1	Meeting Room C2.2	Meeting Room C2.3	
Wide-bandgap semiconductors (GaN, SiC, Ga <sub>2</sub> O <sub>3</sub> , BN) Chairperson: Dr Julita Smalc-Koziorowska	Carbon: nanotubes and graphene Chairperson: Prof Gil-Ho Kim	Perovskites/Organic Semiconductors Chairperson: Prof Dane McCamey	Spintronics and spin phenomena Chairperson: Dr Karina Hudson	
16:15 - 16:30	1059: The intricate physics of luminescence in GaN LEDs <b>Aurelien David</b>	199: Property Analysis And Nanoengineering Of Carbon Nanotubes And Graphenes Via In Situ Tem Techniques <b>Prof Dmitri Golberg</b>	502: Excitons and Polarons in Hybrid Perovskite <b>Dr Paulina Plochocka</b>	640: Quantum Magnonics in Molecular Materials <b>Seth Kurfman</b>
16:30 - 16:45				
16:45 - 17:00	809: Growth of scalable single-photon emitter array from hexagonal Boron Nitride <b>Dr Chi Li</b>	606: Mg-intercalated Graphene On Silicon Carbide: Highly Electron-doped Air-stable Bilayer Graphene At Extreme Electric Fields <b>Prof Michael Fuhrer</b>	39: Carrier Spin Dynamics in Perovskite Crystals <b>Mr Erik Kirstein</b>	922: Exchange-based magnetic field sensors at the atomic limit <b>Dr Ludwik Krantz</b>
17:00 - 17:15	774: GaN-based edge polariton laser <b>Prof Jesus Zuniga-Perez</b>	Graphene/SiC nanostructures for enhanced absorption in the MIR <b>Prof Francesca Iacopi</b>	1065: Address Stability of Metal Halide Perovskite Materials for Optoelectronic Devices through Doping Engineering <b>Ms Hongxia Wang</b>	182: Spin-orbit Enabled Quantum Transport Channels In A Two-hole Lateral Gaas Double Quantum Dot Revealed By The Absence Of Pauli Spin Blockade <b>Dr Marek Korkusinski</b>
17:15 - 17:30	305: Electron-Phonon Scattering and Hole Self-Localisation in β-Ga <sub>2</sub> O <sub>3</sub> <b>Prof Saulius Marcinkevicius</b>			959: Predicting Solid State Material Platforms for Quantum Technologies <b>Dr Marianne Bathen</b>
17:30 - 17:45	584: Negative Differential Conductance and Electron Interference Effects in GaN / AlN Resonant Tunneling Diodes with Metallic Collector <b>Mr Jimmy Encomendero</b>		225: Exciton-phonon coupling in 2D perovskites – role of organic spacer and quantum well thickness <b>Dr Michal Baranowski</b>	437: Spin injection with intrinsic ferromagnetic semiconductor rare-earth nitrides <b>Dr Simon Granville</b>
19:00 - 22:00	Conference Dinner - Luna Park			



Thursday 30 June 2022

Pyrmont Theatre				
Plenary Address Chairperson: Prof Michelle Simmons				
	Scalable semiconductor classical and quantum photonics <b>Jelena Vuckovic</b> <i>Remote Presentation</i>			
8:45 - 9:20				
9:20 - 9:55	1056: Majorana zero modes and topological quantum computation: What, why, how, when? <b>Sankar Das Sarma</b>			
9:55 - 10:30	632: Fault Tolerant Si Based Quantum Computing <b>Dr Seigo Tarucha</b>			
Morning Tea				
Pyrmont Theatre	Meeting Room C2.1	Meeting Room C2.2	Meeting Room C2.3	
Wide-bandgap semiconductors (GaN, SiC, Ga2O3, BN) Chairperson: Prof Michelle Simmons	Optical properties, optoelectronics, solar cells A/Prof Jeffrey McCallum	Complex oxide and chalcogenide semiconductors Chairperson: Prof Sven Rogge	Spintronics and spin phenomena Chairperson: Dr Ludwik Krantz	
11:00 - 11:15	194: Monoisotopic Hexagonal Boron Nitride Crystal Growth From Molten Metal Fluxes <b>James Edgar</b>	158: Semiconductor Nanowires For Optoelectronics Applications <b>Prof Chennupati Jagadish</b>	713: Origin and properties of the 2DEGs at complex oxide heterostructures <b>Prof Anderson Janotti</b>	Probing Quantum Materials with Quantum Coherent Spins <b>Prof Brian Zhou</b>
11:15 - 11:30				
11:30 - 11:45	976: Probing localization induced by intrinsic compositional disorder in InGaN/GaN quantum wells by scanning tunneling luminescence microscopy <b>Dr Alistair Rowe</b>	162: First-principles study of the band tail states and optical properties of gallium phosphide nitride alloys <b>Prof Hiroyuki Yaguchi</b>	534: Magnetic Properties of Phase-Separated Thermoelectric PbTe:Cr <b>Prof Maciej Sawicki</b>	392: Electron spin dynamics induced by spin-orbit effective magnetic field in GaAsBi <b>Dr Yoji Kunihashi</b>
11:45 - 12:00	588: Single Ion Implantation In Diamond For The Creation Of Colour Centres <b>Mr Nicholas Collins</b>	1076: Narrow Bandgap Semiconductors for IR Sensing & Imaging <b>Laurie Faraone</b>	494: Defects engineering of quaternary compound semiconductor photovoltaic materials & devices <b>A/Prof Xiaojing Hao</b>	436: Voltage Assisted Magnetization Switching In Ferromagnetic (Ga,Mn)N <b>Dr Dariusz Szentkiel</b>
12:00 - 12:15	657: Quantum emitters formed in silicon carbide <b>Dr Brett Johnson</b>			1084: A bound for a Rotating Wave Approximation <b>A/Prof Daniel Burgarth</b>
12:15 - 13:15	Lunch		Lunch	
Pyrmont Theatre				
Low dimensional systems (Quantum Hall, transport theory, 1D, 2D) Chairperson:				
Meeting Room C2.1				
Meeting Room C2.2				
Meeting Room C2.3				
13:15 - 13:30	143: Single polariton nonlinear Faraday rotation <b>Dr Paul Walker</b>	Perovskites/Organic Semiconductors Chairperson: Dr Paulina Plochocka		Charge, valley and spin qubits Chairperson: Prof Susan Coppersmith
13:30 - 13:45	527: Synthetic Hamiltonians and spin-orbit engineering in tunable birefringent microcavities <b>Prof Jacek Szczytko</b>	Jinsong Huang		834: In-situ single-photon detection of Er sites in Si with long spin lifetimes and low homogeneous broadening <b>Dr Alexey Lyasota</b>
13:45 - 14:00	97: Quantitative Measurements of Quantized Microwave Faraday Rotation <b>Mr Vishnurayanan Suresh</b>	653: Interplay between polarization and quantum correlations of confined polaritons <b>Dr Olivier Bleu</b>	343: Optimal large-scale production by flow chemistry of new materials for organic photovoltaics <b>Mrs Kamilla Sivunova</b>	504: Silicon quantum processor unit cell operation above one Kelvin <b>Dr Henry Yang</b>
14:00 - 14:15		704: Rare earth materials for microwave to optical frequency conversion <b>Dr Rose Ahlefeldt</b>	287: Ab-initio Study Of The Interface Between Crystalline Tetracene And Silicon For Photovoltaic Applications <b>Dr Mykhailo Klymenko</b>	380: Fast single-spin qubit operation and its coherence time enhanced by quantum feedback <b>Mr Yuta Matsumoto</b>
14:15 - 14:30	540: MIRO-like Oscillations Of Transmission <b>Dr Maxim Savchenko</b>		2D or not 2D - that is the perovskite question <b>Paul Burn</b>	537: A silicon quantum-dot-coupled nuclear spin qubit <b>A/Prof Arne Laucht</b>
14:30 - 14:45	824: Non-Magnetic Fractional Quantization in In0.75Ga0.25As Heterostructures <b>Miss Lei Liu</b>	934: Quantum Interference of Identical Photons from Remote GaAs Quantum Dots <b>Mr Giang Nam Nguyen</b>		
14:45 - 15:00	954: Observation of the 3/2 state in conventional triple-gated quantum point contact <b>Prof Yoshiro Hirayama</b>	818: Long-lived spins for silicon colour centre quantum networks <b>Dr Daniel Higginbottom</b>		
15:00 - 15:30	Afternoon Tea			
Pyrmont Theatre				
Plenary Presentation and Closing Ceremony Chairperson: Prof Sven Rogge				
15:30 - 16:05	The Expanding Flatlands - 2D Materials Beyond Graphene <b>Yuanbo Zhang</b> <i>Remote Presentation</i>			
16:05 - 16:30	Awards & Closing Address			