

8:00 AM	Monday, 06 December		Tuesday, 07 December							Wednesday, 08 December							Thursday, 09 December						
8:30 AM			Conference Open							Plenary							Plenary						
9:00 AM			Plenary							Plenary							Plenary						
9:30 AM			Coffee							Coffee							Coffee						
10:00 AM			Session I.1 CMP 1	Session I.2 QST 1	Session I.3 AMO 1	Session I.4 NP 1	Session I.5 Education 1	Session I.6 Astro 1		Session IV.1 CMP 4	Session IV.2 QST 4	Session IV.3 AMO 4	Session IV.4 NP 3	Session IV.5 TP 1	Session IV.6 Astro 3	Education Workshop I	Session VII.1 CMP 7	Session VII.2 QST 8	Session VII.3 AMO 7	Session VII.4 NP 5	Session VII.5 TP 3	Session VII.6 Biophysics 1	
10:30 AM			Lunch							Lunch							Lunch						
11:00 AM			Session II.1 CMP 2	Session II.2 QST 2	Session II.3 AMO 2	Session II.4 (FS) Dark Matter Particle Physics	Session II.5 (FS) Topological States of Matter	Session II.6 (FS) Quantum Biotechnology	Quantum Technology Workshop 2021	Session V.1 CMP 5	Session V.2 QST 5	Session V.3 AMO 5	Session V.4 (FS) Precision Particle Physics and Anomalies	Session V.5 (FS) Scanning Probe Microscopy of Condensed Matter Systems	Session V.6 (FS) Electronic and Magnetic Properties of MOF	ECA Pitch Session	Session VIII.1 CMP 8	Session VIII.2 QST 9	Session VIII.3 (FS) Nanophotonics and Quantum Meta-Optics	Session VIII.4 Medical	Session VIII.5 (FS) Molecular Switches	Session VIII.6 Biophysics 2	Quantum Next Generation Pitchfest 2021
11:30 AM			Coffee							Coffee							Coffee						
12:00 PM			Session III.1 CMP 3	Session III.2 QST 3	Session III.3 AMO 3	Session III.4 NP 2	Session III.5 Education 2	Session III.6 Astro 2		Session VI.1 CMP 6	Session VI.2 QST 6	Session VI.3 AMO 6	Session VI.4 NP 4	Session VI.5 TP 2	Session VI.6 Astro 4	Education Workshop II		Session IX.2 QST 10	Session IX.3 AMO 8	Session IX.4 Bragg and TH Laby Medal Session		Session IX.6 Biophysics 3	
12:30 PM			Lunch							Lunch							Lunch						
1:00 PM	Registration GP-P506		Poster Session (Virtual)							Poster Session (In-Person)							Poster Session (In-Person)						
1:30 PM	Pitchmasters! The Foundry, B Block Level 2		Poster Session (Virtual)							Poster Session (In-Person)							Poster Session (In-Person)						
2:00 PM			Poster Session (Virtual)							Poster Session (In-Person)							Poster Session (In-Person)						
2:30 PM			Poster Session (Virtual)							Poster Session (In-Person)							Poster Session (In-Person)						
3:00 PM			Poster Session (Virtual)							Poster Session (In-Person)							Poster Session (In-Person)						
3:30 PM			Poster Session (Virtual)							Poster Session (In-Person)							Poster Session (In-Person)						
4:00 PM			Poster Session (Virtual)							Poster Session (In-Person)							Poster Session (In-Person)						
4:30 PM			Poster Session (Virtual)							Poster Session (In-Person)							Poster Session (In-Person)						
5:00 PM			Poster Session (Virtual)							Poster Session (In-Person)							Poster Session (In-Person)						
5:30 PM			Poster Session (Virtual)							Poster Session (In-Person)							Poster Session (In-Person)						
6:00 PM			Poster Session (Virtual)							Poster Session (In-Person)							Poster Session (In-Person)						

Tuesday, 07 December																			
8:30 AM	9:00 AM	Opening Address																	
9:00 AM	10:00 AM	Plenary Lecture <i>The Physics of Respiratory Particle Generation, Fate in the Air, and Inhalation</i> Distinguished Professor Lidia Morawska, Queensland University of Technology																	
10:00 AM	10:30 AM	Coffee Break																	
		Room: Session I.1: Condensed Matter & Materials Physics (I) Chair:			Room: Session I.2: Quantum Science & Technology (I) Chair:			Room: Session I.3: Atomic, Molecular, Optical Physics (I) Chair:			Room: Session I.4: Nuclear Physics (I) Chair:			Room: Session I.5: Education (I) Chair:			Room: Session I.6: Astrophysics and Space Physics (I) Chair:		
10:30 AM	11:15 AM	(Keynote) Growth modes of 2D graphene heterostructures: substrate effects vs applications Nunzio Motta, Queensland University of Technology	10:30 AM	10:45 AM	Implications of Local Friendliness violation for quantum causality Eric Cavalcanti, Griffith University	10:30 AM	11:00 AM	(Invited) Towards Undersea Operations of an Atomic Magnetometer for Magnetic Anomaly Detection Ben Sparkes, University of Adelaide	10:30 AM	11:00 AM	(Invited) The Capture of Dark Matter in Stars Nicole Bell, University of Melbourne	10:30 AM	10:45 AM	The amazing secrets of band six (and what you should know) Simon Crook, University of Sydney	10:30 AM	11:15 AM	(Keynote) A New Window on the Radio Sky Tessa Verström, CSIRO		
			10:45 AM	11:00 AM	Uncovering the quantum nature of time: the search for a physical signature Joan Vaccaro, Griffith University				11:00 AM	11:15 AM	Improved Treatment of Dark Matter Capture in Neutron Stars Michael Virgato, University of Melbourne			11:00 AM	11:15 AM	Switching to online delivery: The affordances and constraints involved in the approaches adopted by three universities Srividya Durga Kota, University of Sydney			
			11:00 AM	11:15 AM	A No-Go Theorem for Superpositions of Causal Orders Fabio Costa, University of Queensland				11:15 AM	11:30 AM	Cosmological Primordial Black Holes as Dark Matter Zachary Picker, University of Sydney			11:15 AM	11:30 AM	Physics anywhere, anytime and quickly: Setup and Use of a Mini-Film-Studio for laboratory live-streaming, Physics outreach and rapid content creation Thomas Dixon, University of New South Wales			
11:15 AM	11:30 AM	Topological analysis of disordered 3D graphenes Jacob William Martin, Curtin University	11:15 AM	11:30 AM	Witnessing quantum memory in non-Markovian processes Christina Giarmatzl, University of Technology Sydney	11:15 AM	11:30 AM	Zeeman Sub-level Raman Sideband Cooling 171Yb+ Jordan Scarabel, Griffith University	11:15 AM	11:30 AM	Dark Matter, Black Holes and Phase Transitions Michael Baker, University of Melbourne			11:15 AM	11:30 AM	The Australian-led Keck Wide-Field Imager: The most powerful camera in the world and what it can do for you Jeff Cooke, Swinburne			
11:30 AM	11:45 AM	Desktop ultra-high temperature furnace Jason Fogg, Curtin University	11:30 AM	11:37 AM	Demonstrating Multiparty Steering from Stochastically Shared Entanglement Alex Pepper, Griffith University	11:30 AM	11:45 AM	Time resolved atomic ionization and tests of the fundamental threshold laws Julian Berengut, University of New South Wales	11:30 AM	11:45 AM	Dark Matter, Black Holes and Phase Transitions Michael Baker, University of Melbourne			11:30 AM	11:45 AM	Physical black holes and their properties Daniel Terno, Macquarie University			
			11:37 AM	11:45 AM	Wigner and his Friend's Recursive Experiment Arnab Utreras-Alarcon, Griffith University				11:45 AM	12:00 PM	Radiation pattern in the Quark Nugget model of Dark Matter Igor Samsonov, University of New South Wales			11:45 AM	12:00 PM	Search for a variation of the fine-structure constant around the supermassive Black Hole in our Galactic Centre Benjamin Roberts, University of Queensland			
11:45 AM	12:00 PM	Go2O3 as a large area, passivation and protection layer on CVD Graphene Matthew Gebert, Monash University	11:45 AM	11:52 AM	Classical causal models cannot faithfully explain Bell nonlocality or Kochen-Specker contextuality in arbitrary scenarios Jason Pearl, Griffith University	11:45 AM	12:00 PM	Power-law intensity distributions in emission spectra of complex atoms and nuclei Julian Berengut, University of New South Wales	11:45 AM	12:00 PM									
			11:52 AM	12:00 PM	"Why" the quantum: towards a semantics of counterfactuals in quantum causal models Ardra Kooderi Suresh, Griffith University														
12:00 PM	1:00 PM	Lunch																	
		Session II.1: Condensed Matter & Materials Physics (II) Chair:			Session II.2: Quantum Science & Technology (II) Chair:			Session II.3: Atomic, Molecular, Optical Physics (II) Chair:			Session II.4 (Focused): Dark Matter Particle Physics Chair: Cedric Simenel			Session II.5 (Focused): Topological States of Matter Chair: Semonti Bhattacharyya			Session II.6 (Focused): Quantum Biotechnology Chair: Liam Hall	Quantum Technology Workshop 2021 Chair: Marcus Doherty	
1:00 PM	1:30 PM	(Invited) Surface-Assisted Molecule-Molecule Hybridization: From Lifts of Energy Degeneracy to 2D Molecular Bands Jack Hellerstedt, Monash University	1:00 PM	1:45 PM	(Keynote) Rise of the Machines: Making better photons by getting rid of experimentalists Andrew White, University of Queensland	1:00 PM	1:45 PM	(Keynote) Nanoscale structural colour Ann Roberts, University of Melbourne	1:00 PM	1:20 PM	A southern Hemisphere Perspective on Dark Matter Elisabetta Barberio, University of Melbourne	1:00 PM	1:22 PM	Topology in Disordered Materials Julie Karel, Monash University	1:00 PM	1:22 PM	Beyond Phosphine on Venus: How do we know if we've found aliens Laura McKemmish, University of New South Wales		
									1:20 PM	1:40 PM	Simulation and astrophysical insights into dark matter Alan Duffy, Swinburne University of Technology	1:24 PM	1:48 PM	Crossover from 2D ferromagnetic insulator to wide bandgap quantum anomalous Hall insulator in ultra-thin MnBi2Te4 Chi Xuan Trang, Monash University	1:24 PM	1:48 PM	Deep-tissue sensing: Ultrafast photochemistry makes near-infrared nanothermometers brighter Blanca del Rosal, RMIT University		
1:30 PM	1:45 PM	Interaction-induced magnetism in 2D Kagome metal-organic frameworks on substrates Bernard Field, Monash University							1:40 PM	2:00 PM	The ORGAN Experiment: Current Status, Future Plans, and Other Dark Matter Experiments at UWA Ben McAllister, University of Western Australia	1:48 PM	2:12 PM	Majorana zero modes in one- and two-dimensional magnet-superconductor hybrid systems Stephan Rachel, University of Melbourne	1:48 PM	2:12 PM	Fluorescent nanodiamonds: creating reliable nanosensors for biology Philipp Reineck, RMIT University	1:00 PM	3:00 PM
1:45 PM	2:00 PM	Stable crosslinked gate electrodes for OTFT sensors Joshua Arthur, Queensland University of Technology	1:45 PM	2:00 PM	The Heisenberg limit for laser coherence Travis Baker, Griffith University	1:45 PM	2:00 PM	Machine learning for distributed optical fibre temperature sensing Darcy Smith, University of Adelaide	2:00 PM	2:20 PM	Radioimpurity Measurements for Dark Matter Detection Zuzana Slavkova, Australian National University	2:12 PM	2:36 PM	Understanding and improving robustness of topological phases in nanodevices S. N. Coppersmith, University of New South Wales	2:12 PM	2:36 PM	Quantum Measurements of Ferritin-Bound-Iron: Magnetic Behaviour Correlates with Change in Core Morphology Erin Grant, University of Melbourne		
2:00 PM	2:15 PM	Towards High-Temperature Light-Induced Spin State Trapping: Insights From the Crystal Field Theory and Molecular Dynamics Muhammad Nadeem, University of Queensland	2:00 PM	2:15 PM	Superabsorption in an organic microcavity: towards a quantum battery James Quach, University of Adelaide	2:00 PM	2:15 PM	Crosslinked Interfacial Layer for Ink-Jet Printed TADF Polymer OLEDs Cameron Cole, Queensland University of Technology	2:20 PM	2:40 PM	Recent GAMBIT results on dark matter Martin White, University of Adelaide	2:36 PM	3:00 PM	Topological Spin Textures Beyond Skyrmions O.A. Tretakov, University of New South Wales	2:36 PM	3:00 PM	Improving the performance of quantum sensors using robust control Viktor Perunick, Q-Ctrl		
2:15 PM	2:30 PM	Computing energy band alignment at the hybrid organic-inorganic semiconductor interfaces Mykhailo Klymenko, RMIT University	2:15 PM	2:30 PM	Limits of Quantum Key Distribution Protocols Sebastian Kish, Australian National University	2:15 PM	2:30 PM	Coupling a fiber to a chip waveguide via a graded index fiber Yongsop Hwang, University of South Australia	2:20 PM	2:40 PM									
2:30 PM	2:45 PM	Synthesis of Freestanding Covalent Organic Framework Membranes via Solvothermal Annealing using a Ternary Solvent System Nikka Turangan, Queensland University of Technology	2:30 PM	2:37 PM	Overcoming the repeaterless bound in continuous-variable quantum communication without quantum memories Matthew Scott Winnell, University of Queensland	2:30 PM	2:45 PM	Smart bed multimode optical fiber specklegram sensor array Stephen Warren-Smith, University of South Australia	2:40 PM	3:00 PM	Probing Dark Sectors with Evaporating Black Holes Michael Baker, University of Melbourne								
			2:37 PM	2:45 PM	The Mount Stromboli Optical Communication Ground Station Marcus Birch, Australian National University														
2:45 PM	3:00 PM	On-surface flattening of C60 molecules utilizing atomic H Steven Best, Queensland University of Technology	2:45 PM	2:52 PM	Artificial Neural Network Decoding for the Surface Code Spiro Gicev, University of Melbourne	2:45 PM	3:00 PM	Aberration correction for printed microstructures Declan Armstrong, University of Queensland	2:45 PM	3:00 PM									
			2:52 PM	3:00 PM	A New Metric for Benchmarking Quantum Annealing Hardware Sophie Stearn, Australian National University														
3:00 PM	3:30 PM	Coffee Break																	
		Session III.1: Condensed Matter & Materials Physics (III) Chair:			Session III.2: Quantum Science & Technology (III) Chair:			Session III.3: Atomic, Molecular, Optical Physics (III) Chair:			Session III.4: Nuclear Physics (II) Chair:			Session III.5: Education (II) Chair:			Session III.6: Astrophysics and Space Physics (II) Chair:		
3:30 PM	4:15 PM	(Keynote) Resonant and valley contrasting photovoltaic effects Dimitrie Culcer, UNSW	3:30 PM	4:00 PM	(Invited) Unifying theory of quantum state estimation using past and future information Howard Wiseman, Griffith University	3:30 PM	4:00 PM	(Invited) Widefield magnetic field and nanoscale electric field imaging using NV centres in diamond Michael Barson, Monash University	3:30 PM	4:00 PM	(Invited) Axion-like Particles at Colliders Andrea Thamm, University of Melbourne	3:30 PM	4:15 PM	(Keynote) Increasing Engagement in Physics Elizabeth Angstrom, University of New South Wales	3:30 AM	4:15 PM	(Keynote) Modelling the Global Sun to Understand its Impacts on the Earth David Pontin, University of Newcastle		
			4:00 PM	4:15 PM	Non-Markovian Quantum Process Tomography Gregory White, University of Melbourne	4:00 PM	4:15 PM	Towards a compact ytterbium magneto optical trap for use in precision timekeeping applications Ben White, University of Adelaide	4:00 PM	4:15 PM	Nuclear Structure Modelling for Dark Matter Direct Detection Navneet Krishnan, Australian National University								
4:15 PM	4:30 PM	Carrier and spin dynamics in emerging photovoltaics Lara Gillan, UNSW	4:15 PM	4:30 PM	Broadening the gravitational wave detector sensitivity with quantum amplifier Carl Blair, University of Western Australia	4:15 PM	4:30 PM	Single Fission Spin Dynamics Measured by 2D Nutation ESR Spectroscopy Thomas MacDonald, University of New South Wales	4:15 PM	4:30 PM	ATLAS inner tracker strip module construction James Webb, University of Melbourne	4:15 PM	4:30 PM	Exploring students' engagement in first year physics labs during COVID-19 Srividya Durga Kota, University of Sydney	4:15 PM	4:30 PM	Characteristic length scales of magnetic fields in the fluctuation dynamo Neco Kriel, Australian National University		
4:30 PM	4:45 PM	Geometric Control of Universal Hydrodynamic Flow in a Two-Dimensional Electron Fluid Aydin Cem Keser, FLEET@UNSW	4:30 PM	4:45 PM	Optimal mitigation of random-telegraph-noise dephasing by spectator-qubit sensing and control Behnam Tonekaboni, Griffith University	4:30 PM	4:45 PM	Many-body Performance Enhancement in a Quantum Heat Engine Built from Interacting Spins Lewis Williamson, University of Queensland	4:30 PM	4:45 PM	Cosmogenic backgrounds in NaI(Tl) crystal for the SABRE dark matter detector Yi Yi Zhong, Australian National University	4:30 PM	4:45 PM	Exploring the factors affecting undergraduate students' emotional engagement using Achievement Emotion Questionnaire-Physics Aesha Bhansali, University of Sydney	4:30 PM	4:45 PM	A novel approach to cosmic ray transport through supersonic magnetised turbulence Matt Sampson, Australian National University		
4:45 PM	5:00 PM	Phononic solitons Timothy Hirs, University of Queensland	4:45 PM	4:52 PM	What Temperature is Schrödinger's Cat? Carolyn Wood, University of Queensland	4:45 PM	5:00 PM	Microscopic calculation of polariton scattering in semiconductor microcavities Jesper Levisen, Monash University	4:45 PM	5:00 PM	Simulations and design of a compact injector linac based on high gradient X-band accelerating technology based at the University of Melbourne X-lab Scott Williams, University of Melbourne	4:45 PM	5:00 PM	Ubiquitous magnetic field fluctuations in supersonic turbulence with applications for interstellar medium dynamics James Beattie, Australian National University	4:45 PM	5:00 PM			
5:00 PM	5:30 PM	Poster Session (Virtual) Gather																	
5:30 PM	6:00 PM											Poster Session (In-Person) P Block, The Cube							
6:00 PM	6:30 PM																		

Wednesday, 08 December																				
9:00 AM	10:00 AM	<p align="center">Plenary Lecture Topological Materials for Low-energy Electronics Professor Michael Fuhrer, Monash University</p>																		
10:00 AM	10:30 AM	<p align="center">Coffee Break</p>																		
		<p>Room: Session IV.1: Condensed Matter & Materials Physics (IV) Chair:</p>			<p>Room: Session IV.2: Quantum Science & Technology (IV) Chair:</p>			<p>Room: Session IV.3: Atomic, Molecular, Optical Physics (IV) Chair:</p>			<p>Room: Session IV.4: Nuclear Physics (III) Chair:</p>			<p>Room: Session IV.5: Theoretical Physics (I) Chair:</p>			<p>Room: Session IV.6: Astrophysics and Space Physics (III) Chair:</p>			<p>Room: GP-2302 Chair: Elizabeth Angstrom</p>
10:30 AM	11:15 AM	<p>(Keynote) A brief history of low dimensional magnetism – how far we have come and what makes them so fascinating Kirly Rule, ANSTO</p>	10:30 AM	10:45 AM	<p>Bounding neutrino induced T-violation from a nuclear reactor Erik Streed, Griffith University</p>	10:30 AM	11:00 AM	<p>(Invited) Ensemble density functional theory: generalising electronic structure theory to excitations and degenerate ground states Tim Gould, Griffith University</p>	10:30 AM	10:45 AM	<p>Shell effects in fission and quasispin Cedric Simenel, Australian National University</p>	10:30 AM	11:15 AM	<p>(Keynote) Relativistic quantum clocks – from testing quantum features of time and causality to nascent quantum sensors Magdalena Zych, University of Queensland</p>	10:30 AM	11:15 AM	<p>(Keynote) Galactic seismology – waves that cross the Milky Way Jonathan Bland-Hawthorn, University of Sydney</p>	10:30 AM	12:00 PM	<p>Workshop: Online Assessments in Physics facilitated by Elizabeth Angstrom, University of New South Wales</p>
11:15 AM	11:30 AM	<p>Comparing inelastic neutron scattering with theory to understand the complex magnetic interactions in a low-dimensional frustrated magnet Jackson Allen, University of Wollongong</p>	11:15 AM	11:30 AM	<p>Determining the Advantage of Quantum Lidar Ben Sparkes, DSTG</p>	11:15 AM	11:30 AM	<p>Calculation of differential cross sections in proton collisions with atomic hydrogen Corey Ploewman, Curtin University</p>	11:15 AM	11:30 AM	<p>Characterisation of Photomultiplier Tubes for the SABRE South Experiment William Melbourne, University of Melbourne</p>	11:15 AM	11:30 AM	<p>Relativistically invariant Bohmian trajectories of photons Joshua Foo, University of Queensland</p>	11:15 AM	11:30 AM	<p>Understanding star formation through an N-PDF analysis of the VMC-C Shannon Melrose, University of New South Wales</p>			
11:30 AM	11:45 AM	<p>Neutron polarization capabilities at the Australian Centre for Neutron Scattering Andrew Manning, ANSTO</p>	11:30 AM	11:37 AM	<p>Developing a Space-Based Quantum-Secure Time Transfer System Sabrina Slieman, University of Adelaide</p>	11:30 AM	11:45 AM	<p>Positron Bound States and Scattering Resonances James Sullivan, Australian National University</p>	11:30 AM	11:45 AM	<p>Mass-equilibration and Fluctuations in the Angular Momentum-Dependent Dynamics of Heavy Element Synthesis Reactions Takaki Tanaka, Australian National University</p>	11:30 AM	11:45 AM	<p>Unpredictable extensive thermodynamics of correlated systems at equilibrium Fatema Tanja, Griffith University</p>	11:30 AM	11:45 AM	<p>The Mystery of Orphan H II Regions: Where are the Ionising Star Clusters? Jia Wei The, Australian National University</p>			
11:45 AM	12:00 PM	<p>Influence of device geometry and imperfections on the interpretation of transverse magnetic focusing experiments Yixiang Lee, RMIT University</p>	11:45 AM	11:52 AM	<p>Trapping Sound With Light Raymond Harrison, University of Queensland</p>	11:45 AM	12:00 PM	<p>A Fully Relativistic Approach to Photon Scattering and Photoionisation for the Alkali Atoms Adam Singer, Curtin University</p>	11:45 AM	12:00 PM	<p>Simulating directional detection using a gaseous time projection chamber: for the Cygnus experiment Ferdos Dasgiri, Australian National University</p>	11:45 AM	12:00 PM	<p>Relaxation of Multitime Statistics in Quantum Systems Neil Dowling, Monash University</p>	11:45 AM	12:00 PM	<p>Variational Molecular Spectroscopy for Sensitivity to a Variation in the Proton to Electron Mass Ratio Anna-Maree Syme, University of New South Wales</p>			
12:00 PM	1:00 PM	<p align="center">Lunch</p>																		
		<p>Chair: Session V.1: Condensed Matter & Materials Physics (V)</p>			<p>Chair: Session V.2: Quantum Science & Technology (V)</p>			<p>Chair: Session V.3: Atomic, Molecular, Optical Physics (V)</p>			<p>Chair: Session V.4 (Focused): Precision Particle Physics and Anomalies Chair: James Zanotti</p>			<p>Chair: Session V.5 (Focused): Scanning Probe Microscopy of Condensed Matter Systems Chair: James Zanotti</p>			<p>Chair: Session V.6 (Focused): Electronic and Magnetic Properties of Metal-organic Frameworks Chair: Stephan Rachel</p>			<p>Chair: Joel Alroe</p>
1:00 PM	1:30 PM	<p>(Invited) Hygroscopic Insulator Field Effect Transistors for Sensing Sonjya Yambem, Queensland University of Technology</p>	1:00 PM	1:45 PM	<p>(Keynote) Sub-megahertz homogeneous linewidth for Er in Si via in situ single photon detection Sven Rogge, University of New South Wales</p>	1:00 PM	1:45 PM	<p>(Keynote) The rise of Me-tronics Yuri Kivshar, Australian National University</p>	1:00 PM	1:30 PM	<p>Flavour anomalies at LHCb Ulrik Egede, Monash University</p>	1:00 PM	1:22 PM	<p>Exploring Atomic Force Microscopy for Nanoscale Mechanical Experiments Peggy Schoenher, University of New South Wales</p>	1:00 PM	1:22 PM	<p>Harnessing Electroactivity in Metal-Organic Frameworks Deanna D'Alessandro, University of Sydney</p>			
1:30 PM	2:00 PM	<p>(Invited) A Closed-Form Quantum Description of Disordered Spin Baths Over Arbitrary Timescales Liam Hall, University of Melbourne</p>	1:45 PM	2:00 PM	<p>Testing a New Strong No-Go Theorem for the Wigner's Friend Scenario Geoff Pryde, Griffith University</p>	1:45 PM	2:00 PM	<p>Magnetic Field Effects in Photochemical Upconversion Roslyn Forecast, RMIT</p>	1:30 PM	2:00 PM	<p>Flavour anomalies at Belle II Chia-Ling Hsu, University of Sydney</p>	1:24 PM	1:48 PM	<p>Atomic-Scale Evidence of Surface-Catalyzed Gold-Carbon Covalent Bonding Ben Lowe, Monash University</p>	1:24 PM	1:48 PM	<p>Single-Crystal Electrical Measurements of the Mixed-Valence Semiconducting Metal-Organic Framework [Cu(BTDA)](MeOH) Adam Micolich, University of New South Wales</p>			
2:00 PM	2:15 PM	<p>Accurate first principles simulation of liquid water using deep learning Timothy Duggan, University of Queensland</p>	2:00 PM	2:15 PM	<p>Experimental quantum channel correction via heralded amplification Slussarenko Sergej, Griffith University</p>	2:00 PM	2:15 PM	<p>High viscosity injector effects on the phase behaviour of lipid cubic phase Daniel Wells, La Trobe University</p>	2:00 PM	2:30 PM	<p>Time-reversal-violating electric dipole moments: overview and outlook Jacinda Ginges, University of Queensland</p>	1:48 PM	2:12 PM	<p>Deterministic Switching of Ferroelectric Bubble Nanodomains Peggy Zhang, University of New South Wales</p>	1:48 PM	2:12 PM	<p>Strongly Correlated Electrons in 2D Kagome Metal-Organic Frameworks Agustin Schiffrin, Monash University</p>	1:00 PM	3:00 PM	<p>ECA Pitch Session</p>
2:15 PM	2:30 PM	<p>Competition of first-order and second-order topology on the honeycomb lattice Matthew Bunn, University of Melbourne</p>	2:15 PM	2:22 PM	<p>Fast coherent control of an NV-spin ensemble using a KTaO3 dielectric resonator at cryogenic temperatures Hyma Vallabhapuram, University of New South Wales</p>	2:15 PM	2:30 PM	<p>Analytical modelling of closed aperture Z-Scan measurements of two photon absorption Esa Jantunen, Queensland University of Technology</p>	2:12 PM	2:36 PM	<p>Near-Field Terahertz Nanoscopy of Coplanar Microwave Resonators Peter Jacobson, University of Queensland</p>	2:12 PM	2:36 PM	<p>Mechanomagnetism in elastic crystals: insights from [Cu(acac)]₂ Elise Kenny, Queensland University of Technology</p>						
2:30 PM	2:45 PM	<p>Versatile, Rapid, and Plasma-Assisted Synthesis of Cuprous Halide Composites at Room Temperature and Pressure Hugo Hartl, Queensland University of Technology</p>	2:30 PM	2:37 PM	<p>Ultrafast coherent excitation of an Ytterbium ion with single laser pulses Kenji Shimizu, Griffith University</p>	2:30 PM	2:45 PM	<p>Fourier Transform Holography with Extended Reference: a step toward the use of photons of higher energy Mihir Hong Dao, La Trobe University</p>	2:30 PM	3:00 PM	<p>Lattice QCD in searches for physics beyond the standard model Ross Young, University of Adelaide</p>	2:36 PM	3:00 PM	<p>Importance of interactions for the band structure of the topological Dirac semimetal Na3Bi Iolanda Di Bernardo, Monash University</p>	2:36 PM	3:00 PM	<p>Strongly correlated phenomena in the Hubbard model on a decorated lattice Henry Nourse, University of Queensland</p>			
2:45 PM	3:00 PM	<p>Experimental Evidence of Reduced Symmetries of Superconductors and their Implications for Interpretation of Mechanisms and Design of New Materials Jose Alarco, Queensland University of Technology</p>	2:45 PM	2:52 PM	<p>Beating the Thermal limit of qubit initialization with a Bayesian Maxwell's demon Mark Johnson, University of New South Wales</p>															
3:00 PM	3:30 PM	<p align="center">Coffee Break</p>																		
		<p>Chair: Session VI.1: Condensed Matter & Materials Physics (VI)</p>			<p>Chair: Session VI.2: Quantum Science & Technology (VI)</p>			<p>Chair: Session VI.3: Atomic, Molecular, Optical Physics (VI)</p>			<p>Chair: Session VI.4: Nuclear Physics (IV)</p>			<p>Chair: Session VI.5: Theoretical Physics (II)</p>			<p>Chair: Session VI.6: Astrophysics and Space Physics (IV)</p>			<p>Chair: Kate Jackson</p>
3:30 PM	3:45 PM	<p>Excited-state dynamics of emerging optoelectronic materials Christopher Bailey, University of New South Wales</p>	3:30 PM	4:00 PM	<p>(Invited) Quantum dissipative models for current biased Josephson junction based single photon counters Michael Tobias, University of Western Australia</p>	3:30 PM	4:00 PM	<p>(Invited) King Plot Non-linearity and the Search for New Light Bosons Amy Geddes, University of New South Wales</p>	3:30 PM	3:45 PM	<p>Pulse shape discrimination of low energy nuclear and electron recoils in NaI(Tl) for dark matter detection Nathan Spinks, Australian National University</p>	3:30 PM	4:00 PM	<p>(Invited) Discrete Time Crystals in Ultracold Quantum Gases Bryan Dalton, Swinburne University of Technology</p>	3:30 PM	3:45 PM	<p>The origin of the diffuse, isotropic γ-ray background and associated correlations Roth Matt, Australian National University</p>			
3:45 PM	4:00 PM	<p>Fast Adiabatic Switching of Floquet-Bloch States in Monolayer WS₂ Reveals Coherent Dynamics Stuart Earl, Swinburne University of Technology</p>	4:00 PM	4:15 PM	<p>Josephson junctions: modelling their fabrication and electrical response at the atomic scale Jared Cole, RMIT University</p>	4:00 PM	4:15 PM	<p>Fitting structural features of the complex atomic fine structure spectra across the copper K-edge Paul Di Pasquale, La Trobe University</p>	4:00 PM	4:15 PM	<p>The SABRE South Liquid Scintillator Veto Detector Lachlan Milligan, University of Melbourne</p>	4:00 PM	4:15 PM	<p>Realization of a discrete time crystal on 57 qubits of a quantum computer Philip Frey, University of Melbourne</p>	4:00 PM	4:15 PM	<p>Galaxy evolution by way of SED analysis Ollie Pye, Queensland University of Technology</p>	3:30 PM	5:00 PM	<p>Workshop: Active learning techniques for new physics educators facilitated by Kate Jackson, University of New South Wales</p>
4:00 PM	4:15 PM	<p>A multi-scale approach to energy and charge transport in amorphous polymers Francesco Campaioli, RMIT University</p>	4:15 PM	4:30 PM	<p>Mitigating quasiparticle poisoning in superconducting circuits using phononic filtering Arkady Fedorov, University of Queensland</p>	4:15 PM	4:30 PM	<p>Simultaneous reconstruction of the complex fine structure spectra across the iron K-edge Tony Kirk, La Trobe University</p>	4:15 PM	4:30 PM	<p>Assessing model independent tests of the DAMA modulation Madeleine Zurowski, University of Melbourne</p>	4:15 PM	4:30 PM	<p>Many-Body Dynamics of Ultracold Polar Molecules in an Optical Lattice Timothy Harris, University of Queensland</p>	4:15 PM	4:30 PM	<p>Evolution of Dark Energy Sarah Bedevic, La Trobe University</p>			
4:30 PM	4:45 PM	<p>Exciton-polaron interactions in monolayer WS₂ Jack Muir, Swinburne University of Technology</p>	4:30 PM	4:45 PM	<p>Model and analysis of 2D SQUID arrays at 77 K: Study of the magnetic field response and coupling radius Marc Gall Labadie, CSIRO</p>	4:30 PM	4:45 PM	<p>QED radiative corrections to E1 transition amplitudes in heavy atoms Carter Fairhall, University of Queensland</p>	4:30 PM	4:45 PM	<p>Development of CYGNUS-1: a prototype directional dark matter detector to search below the neutrino floor Lachlan McKie, Australian National University</p>	4:30 PM	4:45 PM	<p>Interplay between polarization and quantum correlations of confined polaritons Olivier Bleu, Monash University</p>	4:30 PM	4:45 PM	<p>The Role of Environment in the Evolution, Fate and AGN of Distant Galaxies Georgia Hartzberg, Queensland University of Technology</p>			
4:45 PM	5:00 PM	<p>Generating Chiral Magnon Polaritons Jeremy Bourhill, University of Western Australia</p>	4:45 PM	4:52 PM	<p>Inductive detection and amplification of spin echoes using a superconducting parametric amplifier Wyatt Vine, University of New South Wales</p>	4:45 PM	5:00 PM	<p>Theoretical study of electronic structure of erbium (Er), fermium (Fm), and nobelium (No) Saleh Alhababi, UNSW</p>	4:45 PM	5:00 PM										
		<p align="center">Online Only Session: Quantum Science & Technology (VII) Chair:</p>																		
			5:00 PM	5:30 PM	<p>(Invited) Quantum Algorithms for the NISQ Era Jingbo Wang, University of Western Australia</p>															
			5:30 PM	5:45 PM	<p>Deep learning for quantum and complex systems Aaron Tranter, Australian National University</p>															
			5:45 PM	6:00 PM	<p>A framework for optimal quantum spatial search using alternating phase-walks Samuel Marks, University of Western Australia</p>															
			6:00 PM	6:15 PM	<p>Quantum computed chemistry beyond the Hartree-Fock variational limit Michael Jones, University of Melbourne</p>															
			6:15 PM	6:22 PM	<p>Exploring physical systems through Reinforcement Learning Arindam Saha, Australian National University</p>															
			6:22 PM	6:30 PM	<p>Quantum Chaos and Trotterisation Threshold in Digital Quantum Simulations Cahit Kargi, University of Technology Sydney</p>															

Thursday, 09 December																							
9:00 AM		Plenary Lecture <i>From Show-Pony to Work Horse: Expanding Applications of Structured Light</i> Professor Halina Rubinsztein-Dunlop, University of Queensland																					
10:00 AM		Coffee Break																					
		Room: Session VII.1: Condensed Matter & Materials Physics (VII) Chair:				Room: Session VII.2: Quantum Science & Technology (VIII) Chair:				Room: Session VII.3: Atomic, Molecular, Optical Physics (VII) Chair:				Room: Session VII.4: Nuclear Physics (V) Chair:				Room: Session VII.5: Theoretical Physics (III) Chair:				Room: Session VII.6: Biophysics (I) Chair:	
10:30 AM		11:15 AM		10:30 AM		10:45 AM		10:30 AM		11:00 AM		10:30 AM		11:15 AM		10:30 AM		10:45 AM		10:30 AM		11:00 AM	
		(Keynote) Thermoelectric Materials and Devices for power generations and refrigeration Zhigang Chen, USQ		<i>Measuring Rotation in a Bose-Einstein Condensate with Phonon Interferometry</i> Charles Woffinden, University of Queensland		<i>Superfluid Brillouin Optomechanics</i> Christopher Baker, University of Queensland		<i>(Invited) Quantum anomaly in a quasi-2D Fermi superfluid</i> Xia-Ji Liu, Swinburne University of Technology		(Keynote) Classification of neutrino mass models and their connections with experimental anomalies Ray Volkas, University of Melbourne		<i>Universal properties of the near-horizon geometry</i> Sebastian Murk, Macquarie University		<i>Quantum superpositions of topology and black hole metrics</i> Joshua Foo, University of Queensland		<i>(Invited) Dynamic and tunable properties of model primitive cell membranes</i> Anna Wang, University of New South Wales							
		<i>Effect of various surface conditions on Van der Waals epitaxy of MoS₂</i> Negar Zebardastan, Queensland University of Technology		<i>Observing the boundary layer of vortex matter</i> Tyler Neely, University of Queensland		<i>Searching for Signatures of Quantum Gravity with Ultracold Quantum Gases</i> Simon Haine, Australian National University		<i>Metasurfaces for Nonlinear Optics</i> Sergey Kruk, Australian National University		<i>Nanolasers governed by interference and topology</i> Aditya Tripathi, Australian National University		GAMBIT Csaba Balazs, Monash University		<i>New Weyl Multiplet of 4D, N = 2 Conformal Supergravity and Applications</i> William Kitchin, University of Queensland		<i>Constraining modified gravity theories with physical black holes</i> Sebastian Murk, Macquarie University		<i>Imaging living activity in bio-samples</i> Nicolas Mauranyapin, University of Queensland					
		<i>Effect of dielectric screening and interfacial scattering on the electrical properties of few layer PSe₂</i> Paritosh Wadekar, National Sun Yat Sen University		<i>Observation of cross phase modulation in cold atom gradient echo memory</i> Anthony Leung, Australian National University		<i>Experimental Observation of the Kelvin-Helmholtz instability in a BEC Superfluid</i> Simeon Simjanovski, University of Queensland		<i>Domain engineering with state-selective optical tweezers in multi-component BEC</i> Mark Baker, Defence Science and Technology Group		<i>Simplified Models of New Physics in GAMBIT</i> Christopher Chang, University of Queensland		<i>Using gravity to bound the number of fundamental quantum degrees of freedom</i> Harshith Verma, University of Queensland		<i>Rotational Optical Tweezers Probes within Living Macrophages</i> Mark Watson, University of Queensland									
		<i>Microscopic Model of Rydberg Exciton-Polaritons in a Magnetic Field</i> Emma Laird, Monash University		<i>Dissipation-Engineered Optomechanical Accelerometer</i> Semeniilli Leo, University of Queensland		<i>A hybrid chemical machine using a Bose condensed gas</i> Abhisawathi Muniraj Saraswathy, University of Queensland		<i>Universal dynamical scaling of a quenched two-dimensional Bose gas</i> Andrew Groszek, University of Queensland		GAMBIT Christopher Chang, University of Queensland		<i>New Weyl Multiplet of 4D, N = 2 Conformal Supergravity and Applications</i> William Kitchin, University of Queensland		<i>Optical tweezers in Neuroscience</i> Itia Favre-Bulle, Queensland Brain Institute									
		<i>Effect of dielectric screening and interfacial scattering on the electrical properties of few layer PSe₂</i> Paritosh Wadekar, National Sun Yat Sen University		<i>Observation of cross phase modulation in cold atom gradient echo memory</i> Anthony Leung, Australian National University		<i>Experimental Observation of the Kelvin-Helmholtz instability in a BEC Superfluid</i> Simeon Simjanovski, University of Queensland		<i>Domain engineering with state-selective optical tweezers in multi-component BEC</i> Mark Baker, Defence Science and Technology Group		<i>Simplified Models of New Physics in GAMBIT</i> Christopher Chang, University of Queensland		<i>Using gravity to bound the number of fundamental quantum degrees of freedom</i> Harshith Verma, University of Queensland		<i>Rotational Optical Tweezers Probes within Living Macrophages</i> Mark Watson, University of Queensland									
		<i>Microscopic Model of Rydberg Exciton-Polaritons in a Magnetic Field</i> Emma Laird, Monash University		<i>Dissipation-Engineered Optomechanical Accelerometer</i> Semeniilli Leo, University of Queensland		<i>A hybrid chemical machine using a Bose condensed gas</i> Abhisawathi Muniraj Saraswathy, University of Queensland		<i>Universal dynamical scaling of a quenched two-dimensional Bose gas</i> Andrew Groszek, University of Queensland		GAMBIT Christopher Chang, University of Queensland		<i>New Weyl Multiplet of 4D, N = 2 Conformal Supergravity and Applications</i> William Kitchin, University of Queensland		<i>Optical tweezers in Neuroscience</i> Itia Favre-Bulle, Queensland Brain Institute									
12:00 PM		Lunch																					
		Session VIII.1: Condensed Matter & Materials Physics (VIII) Chair:		Session VIII.2: Quantum Science & Technology (IX) Chair:		Session VIII.3 (Focused): Nanophotonics and Quantum Meta-Optics Chair: Igor Aharonovich		Session VIII.4: Medical Physics Chair:		Session VIII.5 (Focused): Molecular switches: from emergent behaviours to molecular scale memory Chair: Ben Powell		Session VIII.6: Biophysics (II) Chair:		Quantum Next Generation Pitchfest 2021 Chair: Marcus Doherty									
1:00 PM		1:30 PM		1:00 PM		1:30 PM		1:00 PM		1:30 PM		1:00 PM		1:45 PM									
		<i>(Invited) Spin-orbit and topology in 1D quantum wires</i> Karina Hudson, UNSW		(Keynote) Precision tomography of a three-qubit electron-nuclear quantum processor in silicon Andrea Morello, University of New South Wales		<i>Nonlinear Dielectric Metasurfaces for applications in imaging and light sources</i> Dragomir Neshev, Australian National University		(Keynote) Building and clinically translating new technology for cancer imaging and targeted radiation therapy Paul Keall, University of Sydney		<i>Cobalt Complexes as Molecular Switches</i> Colette Boskovic, University of Melbourne		(Keynote) How do cryoprotective molecules interact with cell membranes and act synergistically to minimise damage? Ricardo Mancera, Curtin University											
		<i>Experimental evidence of topological magnetotransport on porous Bi₂Te₃</i> Alexander Nguyen, Monash University		<i>Isotopic enrichment of silicon by high fluence 28Si⁻ ion implantation</i> Danielle Holmes, University of New South Wales		<i>Lithium Niobate on Insulator: A Versatile Toolbox for Complete Integrated Optical Systems on a Chip</i> Arnan Mitchell, RMIT University		<i>Fractionated radiotherapy and its effect on the tumour microenvironment: a small animal study</i> Rebecca D'Alonzo, University of Western Australia		<i>Spin-state Ice in Elastically Frustrated Spin-Crossover Materials</i> Jace Cruddas, University of Queensland		<i>Host-derived lipids impact the membrane dynamics, antibiotic susceptibility, and efflux systems of Acinetobacter baumannii</i> Hugo MacDermott-Opeskin, Australian National University											
		<i>Analysis of edge states of a one-dimensional interacting topological insulator</i> David Mikhail, University of Melbourne		<i>Single integrated T-centres: Bright, telecommunications-coupled silicon spins</i> Daniel Higginbottom, Simon Fraser University		<i>Hexagonal boron nitride for integrated quantum photonics</i> Sejeong Kim, University of Melbourne		<i>Clinical Applications of Radiofrequency Identification Systems</i> Shermiah Rienecker, Queensland Health		<i>Molecular switches: beyond traditional polar functional materials</i> Yun Liu, Australian National University		<i>Energy based modelling of bacterial signalling systems</i> Joshua Forrest, University of Melbourne											
		<i>Formation of a stable surface oxide in MnBi₂Te₄ thin films</i> Golrokh Akhgar, Monash University		<i>Coherent electrical control of an electron-nuclear flip-flop qubit in silicon</i> Tim Botzem, University of New South Wales		<i>Semimetal-based Metasurfaces for Zero-bias Mid-infrared Detectors</i> C.-W. Qiu, National University of Singapore		<i>Graphene based porous foams for capacitive pressure sensing</i> Lekshmi Kurup, Queensland University of Technology		<i>Hidden Devil's staircase in a two-dimensional elastic model of spin crossover materials</i> Gian Ruzzi, University of Queensland		<i>Phenolic Compounds Alter the Permeability of Phospholipid Bilayers via Specific Lipid Interactions</i> Sheikh Imamul Hossain, University of Technology Sydney											
		<i>Higher-order topological superconductivity in a doped topological insulator</i> Harley Scammell, University of New South Wales		<i>Quantum instance space analysis for the resupply optimisation problem</i> Floyd Creevey, Uni Melbourne		<i>Influence of indoor airflow on particle distribution: risk scenarios for COVID-19 quarantine facilities</i> Marc van Beest, Queensland University of Technology																	
		<i>Multidimensional Coherent Spectroscopy to Reveal Interactions in Strongly Correlated Materials</i> Rishabh Mishra, Swinburne University of Technology		<i>Clustering and enhanced classification using a hybrid quantum autoencoder</i> Maiyuren Srikumar, University of Melbourne																			
		<i>Technique for transfer of epitaxial topological insulator films to arbitrary substrates</i> Semonti Bhattacharyya, Monash University		<i>Resource Theories of Multi-Time Processes Applied to Dynamical Decoupling</i> Graeme Berk, Monash University																			
		<i>Tomography of universal two-qubit logic operations in exchange-coupled donor electron spin qubits</i> Holly Stemp, University of New South Wales																					
3:00 PM		Coffee Break																					
		Session IX.2: Quantum Science & Technology (X) Chair:		Session IX.3: Atomic, Molecular, Optical Physics (VIII) Chair:		Session VIII.4: Bragg Gold and TH Laby Medal Session Chair: Joanna Turner		Session IX.6: Biophysics (III) Chair:															
3:30 PM		4:00 PM		3:30 PM		4:00 PM		3:30 PM		3:45 PM		3:30 PM		4:00 PM									
		<i>(Invited) Nanomechanical logic: a path towards radiation-hard computing</i> Glen Harris, University of Queensland		<i>(Invited) Dynamical Mechanisms of Vortex Pinning in Superfluid Thin Films</i> Matthew Reeves, University of Queensland		<i>Charge and Spin Dynamics in Multi-donor Systems</i> Samuel Gorman, University of New South Wales		(Keynote) Bicontinuous structures: inspiration from biology for nanofabricated engineered materials Gerd Schroeder-Turk, Murdoch University															
		<i>Optimised entropic dynamic back action</i> Andreas Sawadsky, University of Queensland		<i>Discrete time crystals in Bose-Einstein Condensates and symmetry-breaking edge in a simple two-mode theory</i> Jia Wang, Swinburne University of Technology		<i>Strong field sub-femtosecond electronic processes</i> Alesander Bray, Australian National University		<i>Deep-learning-assisted Imaging Through Dynamic Scattering Media</i> Siddharth Rawat, University of New South Wales															
		<i>Microwave Resonator-Integrated OLED for Magnetic Field Sensing</i> Rugang Geng, University of New South Wales		<i>What is a Quantum Shock Wave?</i> Steven Simmons, University of Queensland		<i>Pulsed Hydrogen Plasmas: Modelling and Experiment</i> Felicity Lee, Australian National University		<i>Dynamic polarizability of macromolecules for single-molecule optical biosensing</i> Larni Booth, University of Queensland															
		<i>Optical-to-mechanical state transfer through feedback</i> Amy van der Hel, University of Queensland		<i>Microscopic pairing theory of Lee-Huang-Yang droplets</i> Hui Hu, Swinburne University of Technology		<i>The Cosmological Electroweak Phase Transition in a Scale-Invariant Standard Model</i> Albert Zhou, Karlsruhe Institute for Technology		<i>Heterodyne Brillouin microscopy for biomechanical imaging</i> Michael Taylor, University of Queensland															
		<i>Photothermal effects in optical levitation</i> Chenyue Gu, Australian National University		<i>Novel thermal dissipation in two-dimensional quantum turbulence</i> Zain Mehdi, Australian National University		<i>Phanon broadening and spectral diffusion of hexagonal Boron Nitride single photon emitters</i> Simon White, University of Technology Sydney		<i>Targeted heating of a biocompatible thermoplastic using embedded superparamagnetic Fe₃O₄ nanoparticles</i> Md Rezoanur Rahman, University of Wollongong															
		<i>An Integrated Platform for Superfluid Optomechanics</i> Walter Wasserman, University of Queensland																					
		<i>Quantum measurement and control of mechanical motion</i> Chao Meng, University of Queensland																					
5:00 PM		Conference Close																					