

24th Australian Institute of Physics Congress

Monday 12 December 2022

Focus Session: Unveiling Emergent Physics of Novel Functional Materials with Neutron Scattering 1 - Room R3 (14:00 - 15:30)

-Conveners: Dehong Yu

time	[id] title	presenter
14:00	[827] Manipulating Low Dimensional Quantum Spin Systems for Future Spintronic Technologies	RULE, Kirrily
14:30	[829] Stability and Scaling Behaviour of Magnetic Skyrmions in Cu ₂ OSeO ₃	ULRICH, Clemens
15:00	[828] Kitaev magnets and the search for the long-sought spin liquid state	Dr RACHEL, Stephan

Focus Session: Unveiling Emergent Physics of Novel Functional Materials with Neutron Scattering 2 - Room R3 (16:00 - 17:30)

-Conveners: Kirrily Rule

time	[id] title	presenter
16:00	[830] Form and function: magnetic excitations in strongly correlated electron systems	TOBIN, Siobhan
16:30	[832] From time crystals to time glasses	CORTIE, David
17:00	[833] Correlation of polar functionality and structure dynamics of metal-organic framework perovskites	LU, Teng

Tuesday 13 December 2022

Focus Session: Metaphotonics and Metasurfaces 1 - Room R2 (11:00 - 12:30)

-Conveners: Sergey Kruk

time	[id] title	presenter
11:00	[849] Chiral BIC Metaphotonics	Prof. QIU, Cheng-Wei
11:30	[851] Graphene metamaterials for integrated photonic devices	Prof. JIA, Baohua
12:00	[64] Programmable Metasurfaces by Electrically Driven Transparent Micro-Heaters	ZANGENEH KAMALI, Khosro
12:15	[568] Lattice-induced optical chirality in all-dielectric resonant metasurfaces	Mr JANGID, Piyush

Focus Session: Metaphotonics and Metasurfaces 2 - Room R2 (14:00 - 15:30)

-Conveners: Yuri Kivshar

time	[id] title	presenter
14:00	[791] Topological nanophotonic metasurfaces	SMIRNOVA, Daria
14:30	[848] Metaphotonics-enabled mid-IR spectrometers for chemical classification	Prof. CROZIER, Kenneth
15:00	[737] Metasurfaces for High Numerical Aperture Optical Signal Processing	PRISCILLA, Niken
15:15	[169] Real-time phase imaging via nanophotonic devices	Dr WESEMANN, Lukas

Focus Session: Metaphotonics and Metasurfaces 3 - Room R2 (16:00 - 17:30)

-Conveners: Sergey Kruk

time	[id] title	presenter
16:00	[847] Enhanced light emission and harvesting via disordered plasmonic metasurfaces	MAIER, Stefan A.
16:30	[850] Spontaneous Parametric Down-Conversion: from Micro- to Nanoscale	SOLNTSEV, Alexander
17:00	[181] Inverse-Designed Metasurfaces for High-Efficiency Sum Frequency Generation	LI, Neuton
17:15	[211] Topologically optimized metasurface for characterizing two-photon distinguishability in a single shot	MA, Jinyong

Focus Session: Strong Interaction Dynamics and the Pursuit of Fundamental Symmetries - Hall C (16:00 - 17:30)

-Conveners: Ross Young

time	[id] title	presenter
16:00	[844] Nuclear matrix elements from lattice QCD	SHANAHAN, Phiala
16:30	[845] Hadron resonances in coupled-channel scattering from quantum chromodynamics	WILSON, David
17:00	[154] Particle and Nuclear Physics at the MeV scale in Australia	SEVIOR, Martin

Wednesday 14 December 2022

Focus Session: National Vision for Nuclear Science and Applications 1 - Room R3 (11:00 - 12:30)

-Conveners: AJ Mitchell

time	[id] title	presenter
11:00	[915] Need for a national effort in building nuclear and radiation science capabilities.	DASGUPTA, Mahananda
11:10	[916] Medical Physics Workforce and Australia's role in Asia-Pacific	Prof. BEZAK, Eva
11:20	[917] Radiation oncology in Australia: progress and possibilities	PENFOLD, Scott
11:30	[920] Radiation and the mining industry.	Prof. SPOONER, Nigel
11:40	[918] National vision for nuclear science and applications: A Western Australia perspective.	HALE, Gary
11:50	[919] Exploring fundamental science at the intersection of atomic and nuclear physics	GINGES, Jacinda
12:00	[921] The national vision for nuclear science and applications: An ANSTO perspective	Dr BRENNER, Ceri
12:10	[922] Scale and Excellence: Building a Nuclear Engineering Industry in Australia	Dr OBBARD, Edward
12:20	[923] Radiation Protection – the challenges of keeping up with demand	JEFFERIES, Cameron

Focus Session: National Vision for Nuclear Science and Applications 2 - Room R3 (14:00 - 15:30)

-Conveners: AJ Mitchell

time	[id] title	presenter
14:00	[925] Interactive Round-Table Discussion	

Focus Session: Quantum Biotechnology - Hall C (14:00 - 15:30)

time	[id] title	presenter
14:00	[890] Quantum-light microscopy: evading biological photodamage via quantum correlations	BOWEN, Warwick
14:22	[891] Quantitative imaging of intracellular topology	HINDE, Elizabeth
14:44	[892] Biological sensing and imaging using Nitrogen Vacancy defects in diamond	MATHER, Melissa
15:06	[893] Bioinspired Optical Cavities for Strong Light-Matter Interactions	Dr HUTCHISON, James

Focus Session: The Culture of Physics and Research - Room E2 (16:00 - 17:30)

-Conveners: Shanette De La Motte

time	[id] title	presenter
16:00	[880] The Culture of Physics and Research	HUNT-SMITH, Nicholas

Thursday 15 December 2022

Focus Session: Australia's Future in Gravitational Wave Physics and Astrophysics 1 - Room R6 (11:00 - 12:30)

time	[id] title	presenter
11:00	[936] Welcome	
11:10	[874] Science with future Gravitational-wave Observatories: Astrophysics	Prof. LASKY, Paul
11:30	[873] Science with future Gravitational-wave Observatories: Cosmology	Prof. DAVIS, Tamara
11:50	[876] Status of current and medium term LIGO detectors	OTTAWAY, David
12:10	[875] Cosmic Explorer and Einstein Telescope	Dr SLAGMOLEN, Bram

Focus Session: Australia's Future in Gravitational Wave Physics and Astrophysics 2 - Room R7 (14:00 - 15:30)

time	[id] title	presenter
14:00	[877] Building NEMO, a Neutron star Extreme Matter Observatory in Australia	Dr ADYA, Vaishali
14:20	[878] What does Australia bring to the global gravitational-wave detector network	Dr SUN, Lilli
14:40	[935] Discussion	MCCLELLAND, David

Focus Session: Time Crystals 1 - Room E2 (16:00 - 17:30)

time	[id] title	presenter
16:00	[867] Condensed Matter Physics in Big Time Crystals	HANNAFORD, Peter
16:30	[868] Realization of a discrete time crystal on 57 qubits of a quantum computer	FREY, Philipp
17:00	[869] Clean Time Crystals in Kicked Lieb-Liniger Model	Dr GIERGIEL, Krzysztof

Friday 16 December 2022

Focus Session: Time Crystals 2 - Room E2 (09:00 - 10:30)

time	[id] title	presenter
09:00	[870] Observtion of liquid time crystals	SIMULA, Tapio
09:30	[871] Discrete symmetry-breaking and time crystals in continuous systems under periodic driving	WANG, Jia
10:00	[928] Discussion	