International Conference on Nanomaterial and Atomaterial Science and Applications



PROGRAM BOOK

26-29 NOV 2024 Melbourne, Australia



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ICNASA2024 Venue

Day 0: Tuesday 26th Nov 2024					
Time	Events	Venue			
17:30-20:00	Registration	RMIT Building 80 Level 7 Fover			
18:00-20:00	Welcome reception	445 Swanston Street, Melbourne, VIC 3000			

Welcome Speech	
Opening Remarks	RMIT Building 80 Level 7 Foyer
Plenary Talk	445 Swanston Street, Melbourne, VIC 3000
Closing Ceremony and Awards	

Morning/Afternoon Teo Junch	RMIT Building 80 Level 7 Foyer
worning/Attentioon rea, Lunch	445 Swanston Street, Melbourne, VIC 3000

Lab Tour	Assembling venue: Registration Desk (Foyer of B080.07) RMIT RMMF facilities (Building 12) / MNRF (Building 7) / Photonics lab (Building 14)				
CAN opening/industry forum (Optional)	VIC State Library: Isabella Fraser Room (Via La Trobe St Entry 5 to access)				
Conference Banquet and Awards	VIC State Library: Redmund Barry Reading Room/Cowen Gallery/La Trobe Reading Room (Via Russell St Entry 6 to access)				

RMIT Building 080 Level 08 Room 010	RMIT Building 080 Level 06 Room 005	RMIT Building 080 Level 09 Room 012	RMIT Building 080 Level 03 Room 006	RMIT Building 080 Level 09 Room 006	RMIT Building 080 Level 10 Room 013
Session 1: Optics, Photonics and Optoelectronics	Session 2: Ato- and Nano- material Physics and Chemistry	Session 3: Materials and Devices for Energy Conversion and Storage	Session 4: Solar Energy Harvesting and Storage & Green Hydrogen	Session 5: Emerging Materials for Sustainability	Session 6: Nanoelectronic/photonic devices Journal talk Industry talk

CICINASA ICNASA 2024





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17:30-20:00	Registration	RMIT Building 80 Level 7 Fover			
18:00-20:00	Welcome reception	445 Swanston Street, Melbourne, VIC 3000			

	Plenary talk (40 mins include Q&A)	Keynote (25 mins include Q&A)	Invited oral (15 mins include Q&A)	Journal talk (15 mins include Q&A)	Industry talk (20 mins include Q&A)		
Time			Day 1: Wedneso	lay 27th Nov 2024			
08:35-08:40	Welc	ome Speech: Prof Baohua	Jia (Venue: B080.07.001)		Chair: Prof. Sandra E. Kentish		
08:40-08:50	Opening Re	marks: DVC Prof. Calum D	Drummond (Venue: B080.07	<i>.</i> 001)		UoM	
08:50-09:00			Photo Session (V	enue: B080.07.001)			
09:00-09:40	Plenary Innovations in Nanos	7 Talk: Prof. Hala Zreiqat structured 3D-Printed Bio	USYD (Venue: B080.07.00 oceramics for Personalized	1) d Bone Healing	Chair: Dist	Prof Baobua lia	
09:40-10:20	Plenary Nanoma	Talk: Prof. Lianzhou War aterials for photoelectroc	ng UQ (Venue: B080.07.00 hemical energy conversio	1) vn	Undar: Dist.		
10:20-10:50		Мо	rning Tea (30 min, Poster S	et Up, Venue: Foyer of B08	0.07)		
Venue	Building 080 Level 08 Room 010	Building 080 Level 06 Room 005	Building 080 Level 09 Room 012	Building 080 Level 03 Room 006	Building 080 Level 09 Room 006	Building 080 Level 10 Room 013	
Morning Session	Session 1: Optics, Photonics and Optoelectronics Chair: Prof. Yuling Wang (MQ)	Session 2: Ato- and Nano-material Physics and Chemistry Chair: Prof. Jan Seidel (UNSW)	Session 3: Materials and Devices for Energy Conversion and Storage Chair: Prof. Zhongfan Jia (Flinders)	Session 4: Solar Energy Harvesting and Storage & Green Hydrogen Chair: Prof. Ziqi Sun (QUT)	Session 5: Emerging Materials for Sustainability Chair: Prof. Dong Ruan (Swinburne)	Session 6: Nanoelectronic/photonic devices Chair: Dr Tong Ling (NTU)	
10:50-11:15	Prof. Yuerui Lu (ANU) 2D Quantum Materials for Next-generation Photonic and Quantum Devices	Prof. Xiaji Liu (Swinburne) Exact Results of Fermi Polarons with Ultracold Atoms	Prof. Dewei Chu (UNSW) Printing Silver Nanomaterials for Wearable Device Applications	Prof. Hongqi Sun (WA) The Development of Nanostructured Materials for Solar Energy Conversion to Fuels and Chemicals	Prof. Shaobin Wang (UoA) Single atom catalysis for green energy and environment	Prof. Huanyu Jin (CAS) Metastable Two- Dimensional Transition Metal Nitrides for Electrocatalytic Water Splitting	
11:15-11:40	Prof. Yalin Lu (USTC) Near-field microscopy: from Microwave to Terahertz Frequencies	Prof. Cyrille Boyer (UNSW) Engineering Nanostructured Materials via 3D Printing and Polymerization Induced Microphase Separation	Prof. Zhe Liu (UoM) Dynamic Topological Domain Walls Driven by Lithium Intercalation in Multilayer Graphene	A/Prof. Liangzhi Kou (QUT) Catalyst Design for Optimal Urea Electrosynthesis	Prof. Jason Dutton (La Trobe) An International Study Evaluating Elemental Analysis	Dr Alex Song (USYD) Fragility of edge states in topological photonic structures	
11:40-12:05	Prof. Jiajia Zhou (UTS)	A/Prof. Jingliang Li (Deakin)	A/Prof. Porun Liu (Griffith)	Dr Jincheol Kim (MQ) From nano to real: exploring high-	Prof. Jun Ma (UniSA) Polycarbonate Nanocomposites for	Dr Xiaoming Wen (RMIT)	



	Upconversion Nanoparticles for Temperature Sensing and Rapid Diagnostics	Nanofibrous silk materials: control of formation kinetics and functionalisation for biomedical applications	Design and In-Situ Characterization of Metal-Based Electrocatalysts for Energy Conversion Applications	performance perovskite solar cells	Heat Exchanger Applications	Why are metal halide perovskites so superior Lattice Energy Reservoir
12:05-12:30	A/Prof. Bin Zhang (Shandong University) Nonlinear waveguides by femtosecond laser writing of lithium triborate crystals	Prof. Zhongpeng Zhu (USTC) Nanoscale Superwetting at Three-Phase Contact Line	Dr Karolina Matuszek (Monash University) Trimodal Thermal Energy Storage Materials for Renewables	Dr Kaiwen Sun (UNSW) The development of high efficiency high bandgap Cu₂ZnSnS₄ solar cells	Dr Khaled Alshammari (King Fahd Security College) Addressing the synchronized impact of a novel strontium titanium over copolymerized carbon nitride for proficient solar-driven hydrogen evolution	Dr Irfan Haider Abidi (RMIT) Defect and Interface Engineering of 2D Materials by Chemical Vapor Deposition for tunable electronic and optoelectronic devices
12:30-14:00			Lunch (90 min, Ven	ue: Foyer of B080.07)		
Time			Day 1: Wednesc	lay 27th Nov 2024		
Venue	Building 080 Level 08 Room 010	Building 080 Level 06 Room 005	Building 080 Level 09 Room 012	Building 080 Level 03 Room 006	Building 080 Level 09 Room 006	Building 080 Level 10 Room 013
Afternoon Session 1	Session 1: Optics, Photonics and Optoelectronics Chair: Prof. Yuerui Lu (ANU)	Session 2: Ato- and Nano-material Physics and Chemistry Chair: Prof. Xiaji Liu (Swinburne)	Session 3: Materials and Devices for Energy Conversion and Storage Chair: Prof. Dewei Chu (UNSW)	Session 4: Solar Energy Harvesting and Storage & Green Hydrogen Chair: Prof. Hongqi Sun (WA)	Session 5: Emerging Materials for Sustainability Chair: Prof. Shaobin Wang (UoA)	Session 6: Nanoelectronic/photonic devices Chair: Dr Alex Song (USYD)
14:00-14:25	Prof. Yuling wang (MQ) Engineering of Plasmoinc Nanomaterials for Surface- enhanced Raman Scattering (SERS) based cancer diagnosis	Prof. Zongyou Yin (ANU) 2D & 0D Atomic Materials for Nano Applications	Prof. Zhongfan Jia (Flinders) Exploring Two- electron Storage in Organic Radical Batteries	Prof. Ziqi Sun (QUT) 2D metal oxide nanostructures for green hydrogen production	Prof. Colin Barrow (Deakin University) Sustainable Bionanotechnology for Food and Agriculture	Dr Hanfei Gao (CAS) Confined assembly of solution-processable optoelectronic nanomaterials
14:25-14:50	Prof. Andrey Sukhorukov (ANU) Nanostructured metasurfaces for photon-pair generation and quantum measurements	Prof. Leslie Yeo (RMIT) Phonon-Mediated Microfluidic Synthesis, Processing and Manipulation of Two- Dimensional and Bulk Crystals	Dr Yuyu Su (RMIT) Advanced Metal- organic framework membranes for enhanced osmotic power generation	Prof. Xiaotao Hao (Shangdong University) Exciton Dynamics in Organic Photovoltaic Devices	Prof. Dong Ruan (Swinburne) Properties of 3D printed continuous fibre- reinforced composites	Prof. Arnan Mitchell (RMIT) Centre of Excellence in Optical Microcombs for Breakthrough Science: Opportunities for microcombs in Energy and Decarbonisation?
14:50-15:15	Prof. Weisong Zhao (Harbin Institute of Technology) Biomedical Imaging Empowered by Intelligent Models	A/Prof. Noushin Nasiri (MQ) Capillary-Force- Driven Nanostructures for	Prof. Zhen Zhang (USTC) Ionic energy systems based on bioinspired	Dr Hongjun Chen (USYD) Solar-driven Production of Clean	Prof. Kang Liang (UNSW) Biocatalytic Nano/microswimmers for Environmental and	Dr Tong Ling (NTU) Label-free interferometric imaging of nanoscopic cellular deformations



		Superior Nanosensing Applications	micro-nanopore materials	Hydrogen and Valuable Chemicals	Biomedical Sustainability	associated with neural activity	
15:15-15:30	Dr Quanbin Dai (UNSW) H ₂ O ₂ generation by photocatalysis in biomedical applications	Dr Bin Qian (CSIRO) Perfluorooctanoic acid (PFOA) sensing using molecular imprinting polymer (MIP) based nano- sensors	Sahar Nazari (UNSW) High-throughput ammonia production from nitrate using liquid metal synthesised bismuth nano-catalyst	Dr Xiaoli Zhang (RMIT) Knowledge-driven material design of durable and robust photocatalysts	Dr Derek Hao (RMIT) Novel g-C₃N₄ Based Materials Towards a Sustainable Future	Hongyang Chen (RMIT) Highly efficient metasurface for diurnal radiative cooling via roll-to-roll printing	
15:30-16:00			Afternoon Tea (30 min,	Venue: Foyer of B080.07)			
Venue	Building 080 Level 08 Room 010	Building 080 Level 06 Room 005	Building 080 Level 09 Room 012	Building 080 Level 03 Room 006	Building 080 Level 09 Room 006	Building 080 Level 10 Room 013	
Afternoon Session 2	Session 1: Optics, Photonics and Optoelectronics Chair: Prof. Andrey Sukhorukov (ANU)	Session 2: Ato- and Nano-material Physics and Chemistry Chair: A/Prof. Dongchen Qi (QUT)	Session 3: Materials and Devices for Energy Conversion and Storage Chair: Prof. Zhe Liu (UoM)	Session 4: Solar Energy Harvesting and Storage & Green Hydrogen Chair: A/Prof. Liangzhi Kou (QUT)	Session 5: Emerging Materials for Sustainability Chair: Prof. Yan Zhuge (UniSA)	Session 6: Nanoelectronic/photonic devices Chair: Dr Xiaoming Wen (RMIT)	
16:00-16:25	Prof. Gary Rosengarten (RMIT) Spectral manipulation for solar conversion efficiency improvements	Prof. Jan Seidel (UNSW) Functional Topological Defects: Materials at the Edge of Order	Prof. Dan Liu (RMIT) Advanced nanomaterials for thermal energy harvesting and energy storage	A/Prof. Jingrun Ran (UoA) Atomic-Level Regulation on Photocatalyst for Energy-Related Reaction	A/Prof. Huacheng Zhang (RMIT) Metal-Organic Framework Materials for Efficient Ion Separation and Energy Generation	Dr Lei Ding (RMIT) Super-resolved photonic force microscopy for detecting sub-fN force in solution	
16:25-16:50	A/Prof. Lei Wei (NTU) Thermally Drawn Advanced Functional Fibers	Prof. Chuxin Li (USTC) Liquid harvesting and transport on multiscaled curvatures	A/Prof. Yulin Zhong (Griffith) Electrochemical Engineering and Direct Ink Writing 3D Printing: Cost- Effective Production of 2D Nanomaterials and their Bespoke Assemblies	Dr Munkhbayar Batmunkh (Griffith) Engineering Metal Halide Perovskite Films for Photovoltaic Devices	Prof. Weiwei Lei (RMIT) Advanced 2D nanomaterials for water and energy conversion	Dr Liang Wang (Griffith) 2D <i>p</i> -Block Nanomaterials for Clean Energy and Catalytic Applications	
16:50-17:15	Dr Wen Wen (Suzhou Institute for Advanced Research, USTC) Manipulation of exciton polaritons in a liquid-crystal perovskite microcavity	Dr Chuangqi Zhao (USTC) Bioinspired high performance nanocomposites	Dr Miaoqiang Lyu (UQ) Functional Energy Materials for Low- Power Internet-of- Things Devices	Dr Mu Xiao (UQ) Solar-Powered Methanol Conversion for On-Demand Hydrogen Production	Dr Jue Hou (RMIT) Functional Group Effect of Metal-Organic Framework Membrane for Lithium Extraction	Dr Linnan Jia (RMIT) Optical nonlinearity study of 2D materials for integrated photonic devices	
17:15-18:20			Poster Session (Bu	ilding 80 level 7 foyer)			
18:30-21:30	Dinner						



	Plenary talk (40 mins include Q&A)	Keynote (25 mins include Q&A)	Invited oral (15 mins include Q&A)	Journal talk (15 mins include Q&A)	Industry talk (20 mins include Q&A)				
Time		Day 2: Thursday 28th Nov 2024							
08:30-09:10	Quantum ionic:	Plenary Talk: s: ultra-low energy consump	Prof. Lei Jiang ICCAS (Venue: tion of energy conversion/info	B080.07.001) prmation transmission in bio	logic system	01 . 5.			
09:10-09:50		Plenary Talk: F Me	Prof. Yuri Kivshar ANU (Venue etaphotonics and Metasurface	: B080.07.001) s		Chair: Di	st. Prof. Hanyi Ma		
09:50-10:20			Morning Tea (30 min, Ve	enue: Foyer of B080.07)					
Venue	Building 080 Level 08 Room 010	Building 080 Level 06 Room 005	Building 080 Level 09 Room 012	Building 080 Level 03 Room 006	Building 080 Level 09 Room 006	Building (080 Level 10 Room 013		
Morning Sessions	Session 1: Optics, Photonics and Optoelectronics Chair: Prof. Feng Chen (Shandong University)	Session 2: Ato- and Nano- material Physics and Chemistry Chair: Prof. Zongyou Yin (ANU)	Session 3: Materials and Devices for Energy Conversion and Storage Chair: Dr Mengran Li (UoM)	Session 4: Solar Energy Harvesting and Storage & Green Hydrogen Chair: Prof. Phoebe Chen (La Trobe)	Session 5: Emerging Materials for Sustainability Chair: Prof. Jun Ma (UniSA)	Sessio Chair: Dis	n 6: Industry talk st. Prof. Baohua Jia		
10:20-10:45	Prof. Kishan Dholakia (UoA) Laser speckle: A material change for precision measurement	A/Prof. Dongchen Qi (QUT) Engineering Diamond Surfaces for Quantum Diamondtronics	Prof. Anthony Murphy (CSIRO) Prospects for Industrialisation of Plasma-assisted CO ₂ Conversion	Prof. Phoebe Chen (La Trobe) Artificial Intelligence Strategies for Medical Applications	Prof. Yan Zhuge (UniSA) Utilization of Drinking Water Treatment Sludge to Develop Eco-Friendly And Self-Healing Concrete	10:20- 10:40	Mr Frank Yao Innofocus		
10:45-11:10	Prof. Dongping Zhong (SJTU) Direct Nanosecond Multiframe Imaging of Irreversible Dynamics in 4D Electron Microscopy	Dr Qianqian Shi (Newcastle) 2D Janus Gold Nanocrystal Assemblies: Fabrication, Properties, and Applications	Prof. Guoxiu Wang (UTS) Materials Innovation for Energy Storage and Conversion	A/Prof. Jingwei Hou (UQ) Glassy Metal-Organic Frameworks: New Opportunities in Membrane Gas Separation and Devices	Prof. Bing-Jie Ni (UNSW) Capture and valorization of micro(nano)plastics from contaminated water	10:40- 11:00	Dr Haiwei Yin Shanghai ideaoptics		
11:10-11:35	Prof. Qican Zhang (Sichuan Univeristy) Research on 3D measuring technology based on structured light illumination	Dr Srikanth Mateti (Deakin) Boron Nitride Nanomaterials and Mechanochemistry: Synthesis to breakthrough applications	Prof. Longsheng Cao (USTC) Reversible Aqueous Zinc Batteries	A/Prof. Xin Yuan (Westlake University) Computational Imaging and Artificial Intelligence: The Next Revolution of Machine Vision	Dr Rijia Lin (UQ) Glassy Metal-Organic Frameworks: New Opportunities in Membrane Gas Separation and Devices	11:00- 11:20	Zolix		
11:35-12:00	Prof. Sumeet Walia (RMIT) Two-dimensional materials for next- generation electronics and optoelectronics technologies	Dr Yi (David) Ju (RMIT) From Fundamental Bio– Nano Interactions to Translational Nanomedicine	Dr Jianfeng Mao (UoA) Design of solid-electrolyte interphase for emerging aqueous zinc metal batteries	Dr Zhe Li (ANU) Theoretical Modelling of High-Performance III-V Compound Semiconductor Nanowire Gas Sensors	Dr Qiang Gao (USTC) Core/shell nanocrystals with structurally ordered intermetallic single- atom	11:20- 11:30	Yuansheng Pan China Southern Airlines		

				for Environmental and Health Monitoring	alloy layers for electrosynthesis of ammonia			
12:00-12:25	Prof. Zhigang Chen (Nankai University) Light-matter interaction and tunable optical nonlinearity in bio- soft-matter and nanosuspensions	Dr Lei Bao (RMIT) Droplet-based Nanoreactors for Catalysis and Nanostructure Fabrications	Prof. Yanglansen Cui (USTC) Gradient Quasi-Solid Electrolyte Enables Selective and Fast Ion Transport for Robust Aqueous Zinc-Ion Batteries	Dr. Guochen Bao (UTS) Enhancing Upconversion Nanoparticles by Surface Modified Dyes	Dr Taimur Ahmed (RMIT) Defect-Engineering in Low-dimensional Materials for Bioinspired Neuromorphic Vision Sensors	11:30- 11:40	Neware	
12:25-12:40	Juveena Piyus (RMIT) Unlocking the Potential of UiO-66 Based Photonic Crystal Sensor to Detect Volatile Amines or Organic Solvents for Food Freshness	Dr Xinwei Guan (RMIT) Multifunctional Memories Using Halide Perovskites and Their Heterostructures	Jeet Sharma (RMIT) Regulating precise proton sieving in atomically distinct MOF-based polyelectrolyte membranes <i>via</i> dynamic sub-nanochannel reconstruction for aqueous energy storage	Dr Chen Zhao (RMIT) Unlocking Direct Lithium Extraction in Harsh Conditions through Thiol-Functionalized Metal-Organic Framework Subnanofluidic Membranes	Neha Nandal (RMIT) Thermal decomposition studies of magnesium nitrate to optimize the recycling process of MgO and nitric acid			
12:40-14:10			Lunch (90 min, Venu	e: Foyer of B080.07)				
14:10-15:15	Lab Tour, Assembling venue: Registration Desk (Foyer of B080.07) RMIT RMMF facilities (Building 12) / MNRF (Building 7) / Photonics lab (Building 14)							
15:00-18:20		Venue: VI	CAN opening/indust C State Library: Isabella Fraser I	try forum (Optional) Room (Via La Trobe St Entry	5 to access)			
18:30-22:15	Ven	ue: VIC State Library: Redmur	Conference Ban d Barry Reading Room/Cowen	quet and Awards Gallery/La Trobe Reading Roo	om (Via Russell St Entry 6 to	o access)		

	Plenary talk (40 mins include Q&A)	Keynote (25 mins include Q&A)	Invited oral (15 mins include Q&A)	Journal talk (15 mins include Q&A)	Industry talk (20 mins include Q&A)		
Time			Day 3: Frid	ay 29th Nov 2024			
08:30-09:10	Nanoparticles	Plenary Talk: Prof. S and metasurfaces for enh	tefan Maier Monash Univers anced light/matter interaction	sity (Venue: B080.07.001) ons and energy conversio	n at the nanoscale	Chai	r: Prof. Dawei Su
09:10-09:50	Carbon-	Plenary Talk: Based Metal-Free Electro	Prof. Liming Dai UNSW (Vei catalysts for Energy Convei	nue: B080.07.001) sion and Environmental F	Remediation		
09:50-10:20			Morning Tea (30 mir	n, Venue: Foyer of B080.07))		
Venue	Building 080 Level 08 Room 010	Building 080 Level 06 Room 005	Building 080 Level 09 Room 012	Building 080 Level 03 Room 006	Building 080 Level 09 Room 006	Building	080 Level 10 Room 013
Morning Session	Session 1: Optics, Photonics and Optoelectronics Chair: Prof. Ewan Blanch (RMIT)	Session 2: Ato- and Nano-material Physics and Chemistry Chair: Prof. Shirley Shen (Defence)	Session 3: Materials and Devices for Energy Conversion and Storage Chair: Prof. Cheng Yan (QUT)	Session 4: Solar Energy Harvesting and Storage & Green Hydrogen Chair: A/Prof. Jingrun Ran (UoA)	Session 5: Emerging Materials for Sustainability Chair: Prof. Yali Yao (University of South Africa)	Sessi Chair: [ion 6: Journal talk Dist. Prof. Tianyi Ma (RMIT)
10:20-10:45	Prof Ann Roberts (UoM) All-optical image processing with meta- optics	Prof. Fariba Dehghani (USYD) Biosensors for Diagnostics, Food Safety, and Environmental Monitoring	Prof. Michelle Spencer (RMIT) Designing 1D and 2D Nanomaterials for Energy Conversion and Low Energy Electronics Applications	Dr Benjamin Noble (RMIT) From Bullion to Biomedicine: Aurophilic Interactions Modulate the Structure and Reactivity Bimetallic Gold Dimers	Prof. Qian Ma (RMIT) Low-Mass Architectured Alloys with Nanostructured Surfaces	10:20- 10:35 10:35- 10:50	Journal talk (NPJ Nanophotonics) Journal talk (MRE)
10:45-11:10	Dr Haoran Ren (Monash University) Ultrathin BIC metasurfaces based on phase-change material Sb2Se3	Prof. Xin Wu (Xiamen University) Molecular cages that bind anions in water solely by hydrogen bonds	Dr Yunxia Yang (CSIRO) Plasma Assisted CO2 Hydrogenation: Low Emission Fuel Production	Dr Chun-Ho Lin (UNSW) Iontronics Devices for Neuromorphic Computation	Dr Zongli Xie (CSIRO) Nanomaterials enhanced mixed matrix membranes for sustainable water treatment	10:50- 11:20	Journal talk: Dr Bo Liu (Nature Portfolio journals)
11:10-11:35	A/Prof. Xiaorui Zheng (Westlake University) Scanning probe technology for low- dimensional opto- electronics	Dr Shuying Wu (USYD) Elastic Conductive Biopolymer Nanocomposites for Wearable Sensors	Dr Jinqiang Zhang (UTS) Refining structures of electrochemical catalysts for energy storage and conversion	Dr Emma Lovell (UNSW) Designing catalysts for visible light enhanced thermal catalysis	Dr Xiangkang Zeng (UQ) Engineered Catalysts for Green Hydrogen Peroxide Production		
11:35-12:00	Dr Hongtao Wang (Singapore University of Technology and Design) 3D Printed Photonic Devices for Optical Anticounterfeiting	Dr Tianzhu Zhou (Suzhou Institute for Advanced Research, USTC) Large-scale fabrication of high-performance MXene fibers	Dr Mengran Li (UoM) Management of local ionic transport for stable CO ₂ electrolysis	Dr Zijun (June) Yong (RMIT) Two-dimensional (2D) for flexible energy harvesting and utilisation	Dr Peng Li (RMIT) Support Engineering for Promoting H₂ Production and Utilization		

12:00-12:25	Dr Jean-Philippe Tetienne (RMIT) Defect-engineered nanomaterials as in situ quantum sensors		Dr Ali Zavabeti (UoM) Liquid Metal Derived Materials for Energy Conversion and Storage	Dr Long Hu (UNSW) High performing and Low-cost quantum dot electronics	Dr Dinushi Munasingha Mudiyanselage (UTS) In-situ Synthesis of TiO ₂ on Carboxymethyl Cellulose for Wastewater Treatment	
12:25-12:40	Dr Guiyuan Cao (RMIT) Grape Metalens for Multi-functional Flat Optics	Harith Najdat Hameed Alrawe (RMIT) pH-Responsive and Sieving Adsorption of Divalent Metal lons by Metal-Organic Frameworks with Subnanometer Pore Windows and Carboxylic Groups	Dr Haimei Xu (RMIT) Selective cracking of plastic polymers into gasoline-ranged hydrocarbons over hierarchical ZSM-5 zeolites synthesized via a CO ₂ -mediated strategy	Dr Qiuran Yang (UoM)	Dr Dhiman Kalita (RMIT) Understanding the Self- Trapped Excitons in Organic Lead Halide Perovskites	
12:40-14:00	Lunch (80 min, Venue: Foyer of B080.07)					
Time	Day 3: Friday 29th Nov 2024					
14:00-14:40	Plenary Talk: Prof. Sandra E. Kentish UoM (Venue: B080.07.001) Studies in Graphene Oxide – from Theory to Industrial Practice Chair: Dr Zongli Xie (CSIRO)					
Venue	Building 080 Level 08 Room 010	Building 080 Level 06 Room 005	Building 080 Level 09 Room 012	Building 080 Level 03 Room 006	Building 080 Level 09 Room 006	
Afternoon Session 1	Session 1: Optics, Photonics and Optoelectronics Chair: Prof Ann Roberts (UoM)	Session 2: Ato- and Nano-material Physics and Chemistry Chair: Prof. Fariba Dehghani (USYD)	Session 3: Materials and Devices for Energy Conversion and Storage Chair: Prof. Michelle Spencer (RMIT)	Session 4: Solar Energy Harvesting and Storage & Green Hydrogen Chair: Dr Yang Fu (RMIT)	Session 5: Emerging Materials for Sustainability Chair: Dr Peng Li (RMIT)	
14:45-15:10	Prof. Ewan Blanch (RMIT) Surface Enhanced Raman Optical Activity: A New Nanoprobe of Molecular Stereochemistry	Dr Shirley Shen (Defence Science and Technology Group) Advancing the additive manufacturing of PLA- ZnO nanocomposites by fused filament fabrication	Prof. Cheng Yan (QUT) Chemo-mechanical failure in batteries at nano and atomic scales	Dr Zhenzhen Wu (Griffith) Functional organic materials in achieving high-performance electrode and electrolyte	Prof. Yali Yao (University of South Africa) Green Fuels and Chemicals from Wastes/CO ₂ /H ₂ O: A sustainable tomorrow	
15:10-15:35	Prof. Kebin Shi (Peking University) High-spatiotemporal resolution label-free imaging of photonic devices and live cells	Dr Hongyi Xu (ANU) Structure Characterization by Electron Crystallography	Dr Bita Bayatsarmadi (CSIRO) Revolutionising Electrochemical Processing for a Carbon-Neutral Future	Dr. Peng Chen (UQ) Phase stabilization strategies for efficient perovskite solar cells	Dr Mega Kar (Deakin) Advanced salts for energy storage applications	
15:35-16:05	Afternoon Tea (30 min, Venue: Foyer of B080.07)					



Venue	Building 080 Level 08 Room 010	Building 080 Level 06 Room 005	Building 080 Level 09 Room 012	Building 080 Level 03 Room 006	Building 080 Level 09 Room 006
Afternoon Session 2	Session 1: Optics, Photonics and Optoelectronics Chair: Prof. Kebin Shi (Peking University)	Session 2: Ato- and Nano-material Physics and Chemistry Chair: Dr Hongyi Xu (ANU)	Session 3: Materials and Devices for Energy Conversion and Storage Chair: A/Prof. Porun Liu (Griffith)	Session 4: Solar Energy Harvesting and Storage & Green Hydrogen Chair: Dr Derek Hao (RMIT)	Session 5: Emerging Materials for Sustainability Chair: Prof. Qian Ma (RMIT)
16:05-16:30	Prof. Feng Chen (Shandong University) Ultrafast Laser Inscription of Plasmonic Nanostructures in Dielectrics	Dr David Broadway (RMIT) Revolutionising Electrochemical Processing for a Carbon-Neutral Future	Dr Sajjad Mofarah (UNSW) Defect Engineering of Materials for Advanced Energy Storage Systems	Dr Xiaoning Li (RMIT)) Investigation on the mechanisms of oxygen evolution reaction with the consideration of spin	Dr Zhe Yang (UQ) Membrane technology for energy-efficient resource recovery from wastewaters: fundamental insights, materials advancements, and process optimization
16:30-16:55	Prof. Haoyu Li (Harbin Institute of Technology) Mathematically surpassing microscope limits to enable high- throughput super- resolution in live cells	Dr Vitor Rielli (UNSW) Nanostructural Control in Ni-based Superalloys Through Advanced Processing and High-Resolution Characterisation	Dr Xiaochun Gao (Ludong University) g-C₃N₄ and its derivative toward energy conversion and storage	Dr Yang Fu (RMIT) Sustainable NH₃ Production: from Materials Design to Catalytic Reaction	Dr Shuaifei Zhao (Deakin) Ultra-strong all carbon nanotube membrane for high-performance separation
16:55-17:20	Prof. Guohua Xie (Xiamen University) Solution-Processed Organic LEDs	Dr Yun Liu (UoA) Organic Nanoparticles with Tuneable Cargo Loading and Their Release	Dr Meng Zhang (UNSW) Methylammonium-free inks for upscalable fabrication of perovskite thin films and solar cells	Dr Yibo Ma (RMIT) A dual-high lithium-ion capacitor enabled by multiple conducting bridges triggered electrode current reallocation	Dr Shengyao Yang (RMIT) On the mechanical enhancement mechanisms of monolayer GO conformal coating on PLA
17:20-17:50	Closing Ceremony and Awards Chair: Dist. Prof. Baohua Jia (Venue: B080.07.001)				