

MSA-ISPT 2023 CONFERENCE PROGRAM

3-7 December 2023, Hyatt Regency Perth, 99 Adelaide Terrace, Perth, Western Australia, Australia, 6000.

	3-Dec-23	Sunday	
17:30	Registration [Location: In front of Grand Ballroom]		
18:00-20:00	Welcome reception [Location: Grand Ballroom]		
	4-Dec-23	Monday	
8:40-9:00	Opening Ceremony [Location: North Grand Ballroom]		
9:00-9:45	Plenary session 1: Prof Lei Jiang, Chinese Academy of Sciences (Super-wettability and Beyond — Quantum-confined Superfluid: Biological Energy Conversion, Chemical Reaction and Information Transfer) [Chair: Prof. Xiwang Zhang] [Location: North Grand Ballroom]		
09:45-12:30	Session A1: New Membranes and Materials for Separations [Location: Plaza Ballroom 1] [Chair: Prof. Xiwang Zhang & Dr. Eugenia B. X. Phegan]	Session B1: Emerging Separation Technologies for Clean Air, Water and Energy [Location: Freshwater Bay Room] [Chair: Prof. Sandra E. Kentish & Dr. Qiang Fu]	Session C1: Lithium Workshop (9:45-12:25, 4th Dec 2023, continued) [Location: North Grand Ballroom] [Chair: A/Prof. Amir Razmjou]
09:45-10:15	Prof. Xiwang Zhang [Keynote] , The University of Queensland (Controlling ion and molecule transport in 2D MXene Membrane for High-performance Separation)	Prof. Sandra E. Kentish [Keynote] , University of Melbourne (Optimum Design of Reverse Electrodialysis for Electricity and Hydrogen Production)	9:45 AM -10:05 AM: “Membranes in the Hydrometallurgical Recovery of Battery Minerals” Prof. Aleks Nikoloski Professor of Extractive Metallurgy, Murdoch University
10:15-10:30	Yasaman Boroumand , Edith Cowan University (Novel Mixed Matrix Membranes for Enhanced Lithium Recovery)	Jingyi (Christine) Sun , University of New South Wales (Integrated FCDI and Flow Cathode for continuous nitrate removal from simulated groundwater)	10:05 AM -10:25 AM: “LITHIUM – The Energy Transition Metal and the Important Role of Western Australia” Mr. Ron Mitchell Managing Director, Global Lithium Resource
10:30-11:00	Morning Tea [South Grand Ballroom]		10:25 AM -10:40 AM: Break time

11:00-11:25	Session A1, continued. Dr. Eugenia B. X. Phegan [Invited] , MAusIMM (Production of High Purity Alumina from a Variety of Sources Using Adsorption and Precipitation)	Session B1, continued. Dr. Qiang Fu [Invited] , University of Technology Sydney (Cost-effective Water Production)	10:40 AM - 11:05 AM: “Leveraging Australia’s Oil and Gas expertise to decarbonize the lithium sector”. Dr. Francis Wedin Executive Chairman, Vulcan Energy Resources
11:25-11:45	A/Prof. Zhelun Li , China University of Petroleum (East China) (Hollow fiber membranes comprising of polyvinylamine/polydopamine active layers and a polyvinylidene fluoride substrate for pervaporative concentration of KAc solutions)	Dr. Farzaneh Mahmoudi , CSIRO Manufacturing (Off-grid Stand-Alone Water Solution with Photovoltaic/thermal (PV/T) Integrated Membrane Distillation Technology)	11:05 AM to 11:30 AM: “Lithium Processing Technologies: A Market Perspective” Dr. Cameron Perks Principal Analyst (Lithium), Benchmark Mineral Intelligence
11:45-12:05	Dr. Abozar Akbari , NematiQ Pty Ltd (Industrial Application of Spiral-wound Graphene oxide membranes)	Dr. Yang Li , Tongji University (Electrochemical Membrane with Metal Heteroatom Interface for Bromate Reduction: Efficacy and Mechanism)	11:30 AM to 11:55 AM: “Modelling and Incorporation of Membrane Treatment in DLE Flowsheets” Ms. Stacey Noakes Senior Process Engineer, Hatch
12:05-12:25	Prof. Wangxi Fang , Suzhou Institute of Nano-Tech and Nano-Bionics, Chinese Academy of Sciences (Metal Ion Crosslinked Microporous Polyimide Membranes for Organic Solvent and Liquid Hydrocarbon Separations)		11:55 AM – 12:25 PM “Battery recycling and its opportunities for Li recovery” Dr. Mohammad Assefi Mineral Recovery Research Centre (MRRC), ECU
12:25-13:30	Lunch [South Grand Ballroom]		
13:30-15:00	Session A2: ARC Centre of Excellence for Green Electrochemical Transformation of Carbon Dioxide Session – Carbon Capture Science and Technology [Location: Plaza Ballroom 1] [Chairs: Dr. Lisa Mingzhe Sun & A/Prof. Gang Kevin Li]	Session B2: MDPI Membranes Sessions – Applications of Membranes [Location: Freshwater Bay Room] [Chairs: Prof. Guohua Jia & Dr. Mengran Li,]	Session C2: Advanced fabrication and characterization techniques for separation materials [Location: North Grand Ballroom] [Chairs: Prof. Jian Jin & Dr. Pooria Pasbakhsh]
13:30-14:00	Dr. Lisa Mingzhe Sun [Keynote] , Surface Measurement Systems Ltd., Alperton, London (Realistic evaluation of prototypical porous materials for carbon capture)	Prof. Guohua Jia [Keynote] , Curtin University (Anisotropic Semiconductor Nanocrystals: Synthesis, properties and applications)	Prof. Jian Jin [Keynote] , Soochow University (Regulating Interfacial Polymerization Process of Polyamide Nanofiltration Membranes)

14:00-14:25	A/Prof. Gang Kevin Li [Invited] , The University of Melbourne (In-situ vapor promoted direct air CO ₂ capture)	Dr. Mengran (Aaron) Li [Invited] , The University of Melbourne (Membrane enabling inherently stable PGM-free CO ₂ electrolysis)	Dr. Pooria Pasbakhsh [Invited] , Technical Sales Specialist at Anton Paar Australia, Characterisation (Advanced Characterization Techniques for Membranes; From biofouling to separation, purification, geotextiles and fuel cells)
14:25-14:45	Dr. Zhuyuan Wang , The University of Queensland (Electricity Generation from Carbon Dioxide Adsorption Enabled by Spatially Nanoconfined Ion Separation)	Dr. Yaoming Wang , University of Science and Technology of China (Ion-injection bipolar membrane electrodialysis realizes 8+ mol/L caustic soda conversion from the brine stream)	Dr. Radoslaw Górecki , King Abdullah University of Science and Technology (X-ray tomography of porous materials with nanoscale resolution)
14:45-15:00	Ruilong Wang , Xi'an Jiaotong University (Membrane Photobioreactor with Carbonic Anhydrase Coated Polysulfone Membrane to Enhance Microalgae Direct Air Carbon Capture)	Shuang Liu , Chongqing University (Ligand-mediated catalysis of Mn(II) for calcium sulfite activation: performance and mechanism)	Zheng Peng , Southeast University (Joule Heating Effect of the Stack in Bipolar Membrane Electrodialysis: Distribution, Risk, Scale Effect and Salt Effect)
15:00-15:30	Afternoon Tea [South Grand Ballroom]		
15:30-17:15	Session A3: New Membranes and Materials and for Separations [Location: Plaza Ballroom 1] [Chairs: Dr. Jue Hou & Dr. Masoumeh Zargar]	Session B3: Emerging Separation Technologies for Clean Air, Water and Energy [Location: Freshwater Bay Room] [Chairs: Dr. Mark Mullett & Dr. Gayathri Naidu]	Session C3: MDPI Membranes Sessions – Applications of Membranes [Location: North Grand Ballroom] [Chairs: Dr George Q. Chen & Dr. Andrea Merenda]
15:30-15:55	Dr. Jue Hou [Invited] , RMIT University (Metal-Organic-Framework-Nanochannels Membranes for Lithium-Ion Separation)	Dr. Mark Mullett [Invited] , Water and Carbon Group, Brisbane (PFAS Removal from Landfill Leachate – the Short Chain Dilemma)	Dr George Q. Chen [Invited] , The University of Melbourne (Equilibrium Sorption of Organic Ions in Ion Exchange Membranes)
15:55-16:20	Dr. Masoumeh Zargar [Invited] , Edith Cowan University (Advanced Materials and Membranes Interactions with Micro and Nanoplastics)	Dr. Gayathri Naidu [Invited] , University of Technology Sydney (Valuable rubidium mining from seawater desalination plant by selective ion exchange nanomaterials and electrochemical membrane separation)	Dr. Andrea Merenda [Invited] , University of Technology Sydney (Novel nanofibrous ion exchange membranes for enhanced protein adsorption in membrane chromatography)

16:20-16:45	Dr. Shokat Akbarnezhadnesheli , Isfahan University of Technology (Preparation and characterization of L-Asp/TiO ₂ - blended PES NF membrane with improved antifouling and performance in reactive dye removal)	Ayushi Kapoor , Indian Institute of Technology Roorkee (Single-step Milk Fat Globule Separation through Microfiltration with Membrane Reusability: Advancing Sustainable Dairy Production)	Dr. Ralph Rolly Gonzales , Kobe University (Ammoniacal nitrogen enrichment from wastewater using hybrid osmotically-assisted reverse osmosis and reverse osmosis (OARO-RO))
16:45-17:00	Javad Farahbakhsh , Edith Cowan University (Enhanced Microplastic fouling resistance in ultrafiltration membranes featuring an innovative MOF-on-MOF structure (NH ₂ -UiO66/NH ₂ -MIL-125))	Malinalli Ramirez Martinez , King Abdullah University of Science and Technology (Fabrication of porous membranes from upcycled plastic waste and bio-based solvents)	Freja Mardal , Aarhus University (Exploring Membrane Filtration in Food Processing: Unraveling the Dynamics of Skim Milk Microfiltration and the Influence of Diafiltration Media Composition on Flux and Fouling Mechanisms)
17:00-17:15	Hanwei Yu , University of Technology Sydney (Sulfonated polyether ketone membranes for lithium recovery via membrane capacitive deionization)	Asad Ali , Edith Cowan University (Recycling Resources from Retired Lithium-Ion Batteries)	Hailan Wang , Tongji University (Membrane fouling behaviors in a full-scale zero liquid discharge system for cold-rolling wastewater brine treatment: A comprehensive analysis on multiple membrane processes)
17:30-19:00	Drinks and Poster [Grand Ballroom]		
	5/12/2023	Tuesday	
9:00-9:45	Plenary session 2: Prof. Suzana Nunes, King Abdullah University of Science and Technology (Polymer Membranes: Driving the Shift to a Sustainable Economy) [Chair: A/Prof. Jingwei Hou] [Location: North Grand Ballroom]		
9:45-10:30	Plenary session 3: Prof. Huanting Wang, Monash University (Ion transport and separation in nanoporous hybrid membranes) [Chair: A/Prof. Amir Razmjou] [Location: North Grand Ballroom]		
10:30-11:00	Morning Tea [South Grand Ballroom]		
11:00-12:30	Session A4: New Membranes and Materials and for Separations [Location: Plaza Ballroom 1] [Chairs: A/Prof. Daria V. Andreeva & Dr. Muhammad Rizwan Azhar]	Session B4: New Membranes and Materials and for Separations [Location: Freshwater Bay Room] [Chairs: Prof. Ingo Pinnau & A/Prof. Huacheng Zhang]	Session C4: MDPI Membranes Sessions – Applications of Membranes [Location: North Grand Ballroom] [Chairs: A/Prof. Amir Razmjou & Dr. Min Zheng]

11:00-11:30	A/Prof. Daria V. Andreeva [Keynote] , National University of Singapore (Layer-by-layer membranes with added functionalities)	Prof. Ingo Pinnau [Keynote] , Abdullah University of Science and Technology (Ultrasensitive Carbon Molecular Sieve Membrane Materials for Gas Separations)	A/Prof. Amir Razmjou [Keynote] , Edith Cowan University (Membranes for Direct lithium Extraction)
11:30-11:55	Dr. Muhammad Rizwan Azhar [Invited] , Edith Cowan University (Engineered bi-metallic (MIL-100-X) MOFs and their derivatives for enhanced water stability and emerging contaminants removal from wastewater)	A/Prof. Huacheng Zhang [Invited] , RMIT University (Subnanofluidic metal-organic framework membranes for efficient ion separation)	Dr. Min Zheng [Invited] , The University of Queensland (Development and application of gas-transferring membranes in wastewater treatment)
11:55-12:15	Dr. Xinzhi Chen , Kunming University of Science and Technology (Novel graded porous supported symmetric mixed conducting ceramic membranes for gas separation)	Prof. Haining Liu , Qinghai Institute of Salt Lakes, Chinese Academy of Sciences (The manufacture of MOFs-derived adsorbents and the adsorption performance for Rb ⁺ and Cs ⁺ from salt lake brine)	Dr. Tobias Foller , University of New South Wales (Mass transport through graphene oxide membranes)
12:15-12:30	Lehui Ren , Tongji University (The Ti/Pd Reactive Electrochemical Membrane (REM) for the Removal of Refractory Organic Pollutants in Water and Wastewater)	Yingpeng Gu , Southeast University (Quaternary Phosphonium Strong Based Anion Exchanger for the Selective Adsorption of Nitrate)	Mohadeseh Najafi , Edith Cowan University (Advanced nanoplastic fouling-resistant ultrafiltration membranes with tailored surface properties for water treatment)
12:30-13:30	Lunch and MSA annual meeting		
13:30-15:15	Session A5: New Membranes and Materials and for Separations [Location: Plaza Ballroom 1] [Chairs: Dr. Lisa Mingzhe Sun, Dr. Biplob Kumar Pramanika & Thomas Fabiani]	Session B5: Advanced fabrication and characterization techniques for separation materials [Location: Freshwater Bay Room] [Chairs: Dr. Zongli Xie & Dr. Neil Robinson]	Session C5: MDPI Membranes Sessions – Applications of Membranes [Location: North Grand Ballroom] [Chairs: Prof. Ho Kyong Shon & Dr. Mahdokht Shaibani]
13:30-14:00	Thomas Fabiani (on behalf of Prof. Maria Grazia De Angelis [Keynote]) , University of Edinburgh (New membranes and sorbent materials for wearable hemodialysis)	Dr. Zongli Xie [Keynote] , CSIRO (Nanocomposite dual layer membranes and integrated process for industrial wastewater treatment towards zero liquid discharge)	Prof. Ho Kyong Shon [Keynote] , University of Technology Sydney (Desalination and Resource Recovery Using Membrane Capacitive Deionization)
14:00-14:25	Dr. Lisa Mingzhe Sun (on behalf of Dr. Sean McIntyre [Invited]) , Surface Measurement Systems, UK (Investigating PIM-1 and cPIM-1 permeation under real-world conditions)	Dr. Neil Robinson [Invited] , The University of Western Australia (Low-field NMR relaxation as a probe of admission and adsorption in functional porous media)	Dr. Mahdokht Shaibani [Invited] , RMIT University (Advanced Membrane Separators for Practical Lithium-Sulfur Batteries)

14:25-14:50	Dr. Biplob Kumar Pramanika [Invited] , RMIT University (Fabrication of MIL 101 Cr-based composite ultrafiltration membrane for nanoplastics separation from synthetic wastewater)	Dr. Zain Ali , King Abdullah University of Science and Technology (Precise Defect Tuning of Membranes for Unprecedented Helium and Hydrogen Separations)	Dr. Xiuxiu Ren , Changzhou University (Hydrophobic Organosilica/Silicalite-1 Composite Membranes for Bioethanol Purification)
14:50-15:05	Hao Zhang , The University of Queensland (Engineering ultra-stable nanochannels in two-dimensional MoS ₂ membranes for acid-tolerant separation)	Mitra Golgoli , Edith Cowan University (Application of zwitterionic brush decorated MOF nanoparticles to develop novel forward osmosis membranes)	Rajneesh Kumar Gautam , Victoria University (Investigating the impact of biomass concentrations and key operational parameters on the critical flux of a submerged AnMBR (SAnMBR) treating abattoir wastewater) [recorded video]
15:05-15:35	Afternoon Tea [South Grand Ballroom]		
15:35-17:25	Session A6: New Membranes and Materials and for Separations [Location: Plaza Ballroom 1] [Chairs: Prof. Michael D. Guiver & Prof. Nicholas Ze Xian Low]	Session B6: Membranes for gas and solvent separation [Location: Freshwater Bay Room] [Chairs: Dr. Chi Cheng & Dr. Seungju Kim]	Session C6: New Membranes and Materials and for Separations [Location: North Grand Ballroom] [Chairs: Prof. Dan Zhao & Prof. Yue Sun]
15:35-16:05	Prof. Michael D. Guiver [Keynote] , Tianjin University (Polymer-supported MOF and other frameworks for gas separation membranes)	Dr. Chi Cheng [Invited] , University of New South Wales (Cascaded compression of size distribution of nanopores in monolayer graphene)	Prof. Dan Zhao [Keynote] , National University of Singapore (Advanced Porous Materials in Membrane Technologies)
16:05-16:30	Prof. Nicholas Ze Xian Low [Invited] , Nanjing Tech University (Redefining Desalination through Engineering Thin Film Composite Membranes with Interfacial Polymerization)	Dr. Seungju Kim [Invited] , RMIT University (Composite nanofibrous membranes with two-dimensional ZIF-L and PVDF-HFP for CO ₂ separation)	Prof. Yue Sun [Invited] , Tiangong University (Engineering nanochannel membranes with macrocyclic host-guest chemistry)
16:30-16:55	Prof. S. Ranil Wickramasinghe [Invited] , University of Arkansas (Advanced Membrane Technologies for Emerging Challenges in Bioseparations) [recorded video]	Dr. Xiaoheng (Alan) Jin , CSIRO, Manufacturing (Recent Developments in Membrane Science and High-Temperature Hydrogen Separation: A Critical Review)	Prof. Yasin Orooji [Invited] , Zhejiang Normal University (Mechanism of Membrane Fouling and Preparation of Antifouling Membranes) [recorded video]
16:55-17:15	Lihong Gan , The Hong Kong Polytechnic University (Tailored polyelectrolyte multilayer nanofiltration membranes via aerosol-assisted printing: fabrication-structure-performance relationships)	Shun Liu , Tianjin University (Validation of Reactive Distillation Coupled Membrane Model and Process Design for Dioxolane Production) [Recorded video]	Dr. Ruobin Dai , Tongji University (Nanovehicle-assisted monomer shuttling enables highly permeable and selective nanofiltration membranes for water purification)

18:30-21:00	Conference dinner [location: North and South Grand Ballroom]		
6-Dec-23		Wednesday	
9:00-10:35	Session A7: MDPI Membranes Sessions – Applications of Membranes [Location: Plaza Ballroom 1] [Chairs: Dr. Ludovic (ludo) DUMEE & Dr Qianqian Shi]	Session B7: Separation modelling and simulation [Location: Freshwater Bay Room] [Chairs: Prof. Gyorgy Szekely & Prof. Jie Chen]	
9:00-9:30	Dr. Ludovic (ludo) DUMEE [Keynote] , Khalifa University (Nanostructured Carbon Membrane Reactors – perspectives on reactivity and scalability)	Prof. Gyorgy Szekely [Keynote] , King Abdullah University of Science and Technology (Chemical diversity and machine learning for nanofiltration)	
9:30-9:55	Dr Qianqian Shi [Invited] , Monash University (Cell Sheet-Like Soft Nanoreactor Arrays)	Prof. Jie Chen [Invited] , Fuzhou University (Versatile three-dimensional poly(aniline) network via Pd-catalyzed polycondensation and its mechanism of ultrahigh-affinity remediation of mercury ion)	
9:55-10:15	Dr. Syed Muztuza Ali , DuPont™ Memcor (Australia) Pty Ltd (Development of a lab-scale virus retention assessment setup for high performance membrane fabrication)	Dr. Chen Wang , University of Technology Sydney (Machine learning for layer-by-layer nanofiltration membrane performance prediction and polymer candidate exploration)	
10:15-10:35	Chenxin Tian , Tongji University (Green Solvent Cleaning Removes Irrecoverable Foulants from End-of-life Membranes in Membrane Bioreactor: Efficacy and Mechanisms)	Dr. Xing Wu , CSIRO (Effect of different draw solutions on concentration polarization in a forward osmosis process: theoretical modeling and experimental validation)	
10:35-11:05	Morning Tea [South Grand Ballroom]		
11:05-12:00	Closing ceremony [Location: North Grand Ballroom]		
12:00-13:00	Lunch [South Grand Ballroom]		

	7-Dec-23	Wednesday
9:00-15:00	Technical tour [Registration required]	<ul style="list-style-type: none"> • 9 am: Leave the hotel • 10 am: Tour of Beenyup Advance Water Recycling Facilities • 11:45 am: Tour of Edith Cowan School of Engineering Facilities • 12:45 pm: Light lunch at Edith Cowan University • 14:00 pm: Leave Edith Cowan University • 15:00 pm: Arrive at hotel

Presentation time: Plenary 45 min, Keynote 30 min, Invited 25 min, ECR 20 min, Student 15 min.

Poster Session (4-Dec-23, Monday, 17:30-19:00)
Prof. Ting Qiu , Fuzhou University (One-pot scalable production of conjugated microporous polymers with exceptional functions in gas and mercury ion adsorption)
Prof. Jin Shang , City University of Hong Kong (Air separation by transition metal cation-exchanged SSZ-13 zeolites)
Prof. Jin Shang , City University of Hong Kong (Development of robust adsorbents with balanced binding affinity for ambient NO ₂ adsorption)
Prof. Xu Xiang , Beijing University of Chemical Technology (Enhancing Lithium Extraction From Brine Using a Bifunctional Titanium Ion Sieve Membrane Electrode)
Prof. Yuan Xi , Dalian University of Technology (TriNa/Pebax 2533 mixed matrix membranes for efficient CO ₂ capture)
Prof. Yan Dai , Dalian University of Technology (Multi-functionalized MCNs effectively improve interfacial compatibility of mixed matrix membranes and enhance CO ₂ gas separation performance)
Dr. Tiantian Li , Dalian University of Technology (Study on the Performance of Grafted Comb Shaped Flexible Side Chain Anion Exchange Membranes Containing Ether Oxygen)
Dr. Xiaolin Ge , University of Science and Technology of China (Exploring H-bonding interaction to enhance proton permeability of an acid-selective membrane)
Dr. Shiva Prasad Nandala , CSIRO Manufacturing (Advances in Membrane Technology for Selective Ammonia Separation and Recovery from Wastewater)
Dr. Xiuxiu Ren , Changzhou University (Enhanced CO ₂ Separation under Water Vapor System by Incorporating Nano Hydrogels into Organosilica Membranes)
Dr. Lisa Mingzhe Sun (on behalf of Dr. Paul Iacomi) , Surface Measurement Systems (Hydrophobicity and Vapour Adsorption Studies of free-standing Zeolitic Imidazolate Framework monoliths)
Xinyue Wen , University of New South Wales (Air drying reduction of graphene oxide membranes)

Yizhen Cheng , Harbin Institute of Technology (Preparation of P-doped biochar and its high-efficient removal of sulfamethoxazole from water: Adsorption mechanism, fixed-bed column and DFT study)
Xuelong Zhuang , Dongguk University (Correlation with Hydrogen Permeability According to Physical and Chemical Properties of Alloy Membrane)
Min Chang Shin , Dongguk University (Correlation with Hydrogen Permeability According to Physical and Chemical Properties of Alloy Membrane)
Pengwei Li , Northeastern University (Green and non-destructive separation of aluminum foil and cathode material from spent lithium-ion batteries using deep eutectic solvents)
Ebrahim M. Khair Alost , Khalifa University (Carbon Nanotubes-Based Electrodes for Hydrogen Production and Water Splitting)
Michael Lim , The University of Auckland (Exploring the impact of organic loading rates on fouling behaviour and treatment efficiency in Anaerobic Membrane Bioreactor (AnMBR) for low-strength wastewater treatment)
Chinky Kochar , RMIT University (Reduced graphene oxide supported Zn/Al double layered hydroxide for adsorptive removal of lead, arsenic and cadmium: Experimental and Statistical analysis)