Conference Program

2023 International Conference on Materials Innovation (ICMI23)

22nd-25th August, 2023 – Brisbane, Australia

Time: Presentation + Q&A	Plenary lecture (30 min)	Keynote lecture (20 min)	Invited lecture (15 min)	Oral lecture (10 min)	ECR lecture (5 min)

22nd Aug	**Registration (13:00-20:00) and Welcome reception (18:00-21:00)** **Venue: Sixteen Antlers (Level 16 Mercure Tower)**
23rd Aug **Plenary Session**	**Chairs: Alan Rowan, Huijun Zhao, Lianzhou Wang (Venue: Roosevelt & Lincoln Room, Pullman Brisbane)**
08:30 - 08:50	**Conference Opening** **Prof Deborah Terry AO**, President and Vice-Chancellor, The University of Queensland **Prof Chennupati Jagadish AC,** President, Australian Academy of Sciences **Dr Rebecca Doolan,** Department of Industry, Science and Resources
08:50 - 09:20	**Plenary 1: Prof Chennupati Jagadish** Semiconductor Nanostructures for Optoelectronics and Energy Applications
09:20 - 09:50	**Plenary 2: Prof Tao Zhang** Single-Atom Catalysis: Progress, Opportunity and Challenge
09:50 - 10:20	**Plenary 3: Prof Max Lu** Materials Innovation for Hydrogen Production and Storage Towards Net Zero Future
10:20 - 10:40	**Morning Tea**
10:40 - 11:10	**Plenary 4: Prof Rose Amal** Designing Advanced Materials Systems for Power-to-X
11:10 - 11:40	**Plenary 5: Prof Lei Jiang** Super-wettability and beyond – Quantum-confined superfluid
11:40 - 12:10	**Plenary 6: Prof Marcela Bilek** Constructing Bioinstructive Cell Microenvironments for Cell Culture, Tissue-Integration and Nanomedicine

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12:10 - 13:00	Lunch				
Venue	**Roosevelt Room**	**Lincoln Room**	**King George Room**	**Olivers Room**	**Executive Suite Room**
23rd Aug Afternoon Session	**Session 1: Environment Chair: Xiwang Zhang, Tom Rufford**	**Session 2: Biomaterials Chair: Sophia Gu**	**Session 3: Catalysis Chair: Shizhang Qiao, Hua Zhang**	**Session 4: Energy Chair: Zhigang Chen, Lydia Helena Wong**	**Session 5: ECR Forum Chair: Muxina Konarova, Julian Steele, Peng Chen**
13:00 - 13:20	**Prof Wonyong Choi** Photo(electro)catalytic Materials for Denitrification and De-NO_x	**Prof Michael Monteiro** Surface Inactivation of Highly Mutated SARS-CoV-2 Variants of Concern: Alpha, Delta and Omicron	**Prof Xianhe Bu** Coordination Polymers: From Structures to Functions	**Prof Guoxiu Wang** Materials Innovation for Building a Zero Emission Energy Future	**ECR Panel discussion** (70 min) **Panellists:** **Prof Max Lu** **Prof Rose Amal** **Prof Marcela Bilek** **Prof Xiaojing Hao** **A/Prof Yan Jiao**
13:20 - 13:40	**Prof Yansong Shen** Multiscale modelling of reacting flows and applications: hydrogen production, storage tank and use in steel industry	**Prof Dayong Jin** Upconversion nanophotonic systems for super-resolution imaging and single-molecule assays	**Prof Liming Dai** Carbon-based metal-free electrocatalysts for Clean Energy and Environmental Remediation	**Prof Qingbo Meng** High-performance Kesterite solar cells based on crystallization and phase evolution regulation	
13:40 - 13:55	**A/Prof Xunyu Lu** Sustainable manufacturing of valuable chemical commodities	**Dr Tushar Kumeria** Porous Silicon Biomaterials for Drug Delivery and Bioimaging	**Prof Jun Huang** Development of Ultra-stable Nanocatalysts for CO_2 Reforming of Methane	**Prof Feng Wang** Light Generation by Mechanical Excitation	
13:55 - 14:10	**A/Prof Huacheng Zhang** Advanced methods for ion selectivity measurement in nanofluidic devices	**A/Prof Kang Liang** Unlocking the Power of Biocatalysis with Reticular Chemistry	**Prof Songcan Wang** Design of Efficient $BiVO_4$ Photoanodes for Photoelectrochemical Water Splitting	**Prof Haolan Xu** Improving interfacial solar evaporation by rational energy management	
14:10 - 14:25	**Dr Xiangkang Zeng** Green Hydrogen Peroxide for Water Disinfection	**A/Prof Cindy Gunawan** Evolutionary Adaptation of Bacterial Pathogens to Nanoparticles	**Prof Tianyi Ma** Catalytic Hydrogen Production: From Lab to Real World	**Dr Peijun Tu** Understanding the Editorial Process at Nature Communications	ECR Forum Session A **Ms Jun Xu** **Ms Wanyu Lyu** **Mr Michael Gunawan**

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14:25 - 14:40	**Dr Aaron Li** Rational design of perovskite metal oxides for intermediate temperature fuel cells	**Dr Hao Song** Nature-Inspired Nanoparticles for Gene and Vaccine Delivery	**A/Prof Yao Zheng** Innovation of Seawater Electrolysis	**Dr Bin Luo** Functional materials for multivalent metal batteries	**Ms Yongxin Huang** **Mr Zexi Zhang** **Mr Shao-Jian Zhang**
14:40-15:10	**Afternoon Tea**				
Venue	Roosevelt Room	Lincoln Room	King George Room	Olivers Room	Executive Suite Room
23rd Aug Afternoon Session	**Session 6: Environ&Energy** **Chair: Rachel Caruso, Zongli Xie**	**Session 7: Bio&Energy** **Chair: Bingyang Shi, John Zhu**	**Session 8: Catalysis** **Chair: Liming Dai, Yan Jiao**	**Session 9: Energy** **Chair: Qingbo Meng, Haolan Xu**	**Session 10: ECR Forum** **Chair: Julian Steele, Haijiao Lu, Weidi Liu**
15:10 - 15:30	**Prof Shaobin Wang** Biomass derived carbon-based materials for advanced oxidation	**Prof Zhiping Gordon Xu** Normalizing physiological properties of the tumor microenvironment to wake up anti-tumor immunity using drug-free clay nanoparticles	**Prof Hua Zhang** Phase Engineering of Nanomaterials (PEN)	**Prof Lydia Helena Wong** Advancing Solar Energy Conversion: Comprehensive Analysis and High Throughput Discovery of Novel Photoabsorbers	ECR Forum Session B **Mr Kurt Mills** **Ms Xuefei Wang** **Mr Yousof Haghshenas** **Ms Ruijing Xin** **Mr Jiakang You** **Ms Min Zheng**
15:30 - 15:50	**Prof Hokyong Shon** Nutrient Recovery in Wastewater for a Circular Economy	**Prof Lining Arnold Ju** Novel movable typing for personalized Vein-Chips in large scale: recapitulate patient-specific Virchow's triad and its contribution to cerebral venous sinus thrombosis	**Prof Yun Liu** Interfacial interaction of heterojunction photocatalysts	**Prof Xiaolin Wang** The grand design of new class of quantum materials and properties	ECR Forum Session C **Mr Haifeng Shen** **Ms Yizhu Kuang** **Mr Du Du** **Mr Qishuo Yang** **Ms Hongzhe Xu** **Mr Michael Potts**
15:50 - 16:10	**Prof Taicheng An** Nano-Construction of Porous Materials for Adsorption and Photocatalytic Degradation of typical VOCs	**Prof Yi Du** Design and development of 2D quantum matters for energy and electronic applications	**A/Prof Bolong Huang** Advanced Atomic Catalysts Design for Energy Systems	**Prof Shanqing Zhang** Creating defects in metal oxide nanomaterials for Energy Conversion and Storage Devices	

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16:10 - 16:25	**A/Prof Tom Rufford** What materials do we need, and how much of them, for large scale CO_2 electrolysis?	**A/Prof Yuning Hong** Molecular Engineering Towards Fluorogenic Probes for Revealing Proteome Stress in Cells	**Dr Jian Pan** Engineering in Power to X	**A/Prof Liangliang Li** Single-ion conductive polymer-based electrolytes for solid-state batteries	ECR Forum Session D **Ms Meijun Guo** **Mr Hao Liu** **Ms Selengesuren Surgatkhuu** **Mr Nashaat Ahmed** **Mr Jaeho Lee** **Mr Chun-Chuan Kao**
16:25 - 16:40	**A/Prof Jie Zhang** Electrochemical Reduction of Carbon Dioxide	**Dr. Li Li** Biomimetic Nanocomposites for Precision Targeting in Cancer Treatment	**Dr Nasir Mahmood** Catalysts requirements to produce low-cost hydrogen from untreated waste/seawater	**Prof Zhifeng Huang** Inorganic Nanopillar Arrays Remarkedly Enhance Photovoltaic Performance of Flexible Perovskite Solar Cells	
16:40 - 16:50	**Dr Milton Chai** MOF membranes for lithium recovery	**Dr Dipan Kundu** Taming H^+ Mediated Charge Storage in $LiMn_2O_4$ in Aqueous Hybrid Zinc Batteries	**A/Prof Chunxia Wang** Fabrication of Renewable Resources Derived Functional Nanomaterials for Electrocatalysis	**Dr Meng Li** GeTe-based hybrid materials for thermoelectric application	ECR Forum Session E **Ms Norah Alghamdi** **Mr Hyeongyu Park** **Ms Miaomiao Wu** **Ms Xinrong Cheng** **Mr Boxuan Hu**
16: 50 - 17:00	**Dr Chun-Ho Lin** Multilayer Graphene Oxide-Based Moisture-Enabled Nanogenerator with Enhanced Performance and High Flexibility	**Dr Md Masud Rana** Redox flow battery for next generation large-scale energy storage applications	**Dr Zhipeng Ma** Atomically dispersed Cu catalysts on sulfide-derived defective Ag nanowires for electrochemical CO_2 reduction	**Dr Munkhbayar Batmunkh** Photovoltaic Devices with Two-Dimensional (2D) Materials	
17:00 - 17:10	**Dr Kai Wang** Developing multifunctional piezocatalysts to enhance hydrogen peroxide production	**Dr Chao Ye** Catalysing metal-sulfur batteries	**Dr Jun Mei** Rational Optimization on 2D Materials for Electrocatalysis	**Dr Pengtang Wang** Boosted urea electrooxidation for energy-saving hydrogen generation	ECR Forum Session F **Mr Sabah Gaznaghi** **Ms Aisha Noor** **Mr Tianyi Cao** **Ms Su-Min Lee** **Mr Yilun Weng**
17:10 - 17:20	**Prof Hyo-Sik Chang** Passivation of ALD-NiO_x Thin Film Using $Ni(dmb)_2$ Precursor in Solar Cells	**Dr Ping Chen** Training obtained from industry as fresh Ph.D, how doctoral degree was valued	**Dr Chen Han** Solar-driven CO_2 reduction for fuels and value-added chemicals production	**Dr Qingbing Xia** Zero-Strain Electrode Materials for Sodium-Ion Batteries	
17:20 - 17:30					

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18:30 - 22:00	**Invited Speaker Dinner-Forum on Net Zero (Venue: Customs House)**

24th Aug Plenary Session	**Chairs: Huijun Zhao, Shizhang Qiao (Venue: Roosevelt & Lincoln Room)**				
08:30 - 09:00	**Plenary 7: Prof Frank Caruso** Bio-Nano Science - Insights for Nanomedicine				
09:00 - 09:30	**Plenary 8: Prof Dongyuan Zhao** Molecular Aggregation-Functional Mesoporous Materials Assembled by Single Micelles				
09:30 - 10:00	**Plenary 9: Prof Zaiping Guo** Electrode and Electrolyte Design for High-Performance Aqueous Zinc-ion Batteries				
10:00 - 10:30	**Lunch**				
Venue	**Roosevelt Room**	**Lincoln Room**	**Kennedy Room**	**Washington Room**	**Executive Suite Room**
24th Aug Morning Session	**Session 11: Environment Chair: Jingwei Hou, Karen Wilson**	**Session 12: Biomaterials Chair: Tushar Kumeria, Cyrille Boyer**	**Session 13: Catalysis Chair: Shintaro Ida, Jingsan Xu**	**Session 14: Energy Chair: Kostya (Ken) Ostrikov, Jia Xie**	**Session 15: AAS-CAS Forum Chair: Chennupati Jagadish, Tao Zhang**
10:30 - 10:50	**Prof Mikel Duke** Inorganic membranes and materials for a “win-win” in treating industrial wastewater: reducing pollution and recovering resources	**Prof Wenlong Cheng** Remote Diagnostics of Cells, Tissues and Organoids	**Prof Chuan Zhao** Challenges and Opportunities for Green Hydrogen Production from Water Electrolysis	**Prof Shujun Zhang** Piezoelectric materials for mechanical energy harvesting applications	**AAS-CAS Roundtable (90 min, by Invitation)**

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10:50 - 11:10	**Prof Yuan Chen** Carbon/iron co-product from clean hydrogen production as a tri-functional adsorbent and catalyst for efficient wastewater treatment	**A/Prof Hang Ta** Silver/iron oxide and ceria/iron oxide nanohybrids: new classes of materials for theragnostic of cardiovascular diseases and cancers	**Prof Zhenhai Xia** Origin and Design Principle for Potential-Dependent Activities of CO_2 Reduction	**Prof Xiangdong Yao** Defect electrocatalysis and defective materials	
11:10 - 11:25	**Dr Fengwang Li** Microenvironment tuning for CO_2 electrocatalysis	**Dr Chun Xu** Designer porous nanomaterials for biomedical applications	**A/Prof Yan Jiao** Operando Modelling of Electrocatalyst Materials for Clean Energy Conversion	**Prof Yongqi Sun** Role of oxygen vacancies in lithium-rich oxides	
11:25 - 11:40	**Dr Xiaoguang Duan** Catalytic transformation of water micropollutants to polymers	**A/Prof Amirali Popat** Overcoming biological barriers using inorganic nanoparticles	**A/Prof Ye Chen** Wet-chemical synthesis and catalytic properties of metal nanomaterials with unconventional crystal phases	**A/Prof Zonglong Zhu** Interface-Driven Stability for Halide Perovskite Photovoltaics: A Fundamental Understanding	
11:40 - 11:50	**Dr Rijia Lin** Interfacial Engineering of Glassy Metal-Organic Framework Composites	**Dr Zan Dai** Biomaterials based In Situ Vaccination for Combating Cold Tumours	**Dr Weidi Liu** High-performance thermoelectrics: from materials to devices	**Dr Miaoqiang Lyu** Scalable Strategies for Improving Stability and Printability of the Next-Generation Zinc Batteries	
11:50 - 12:00		**Dr Mostafa Kamal Masud** Flexible mesoporous gold sensor for biosensing and physiological neural recording	**Dr Haijiao Lu** Noble-metal-free multicomponent photoreduction for energy conversion	**Dr Junnan Hao** New electrolytes and electrodes for aqueous Zn batteries	
12:00 - 13:00	**Lunch**				
Venue	**Roosevelt Room**	**Lincoln Room**	**Kennedy Room**	**Washington Room**	**Executive Suite Room**
24th Aug Afternoon Session	**Session 16: Environment** **Chair: Yun Liu, Fengwang Li,**	**Session 17: Biomaterials** **Chair: Cindy Gunawan Huacheng Zhang**	**Session 18: Catalysis** **Chair: Daniel Lau, Guohua Jia**	**Session 19: Energy** **Chair: Shujun Zhang, Weiwei Lei**	**Session 20: AAS-CAS Forum** **Chair: Yongqiang Tu, Lan Fu**

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13:00 - 13:20	**Prof Huanting Wang** Ion-selective Membranes for Clean Energy Technologies	**Prof Cyrille Boyer** Design of antimicrobial polymers	**Prof Shintaro Ida** Preparation of Nanosheet Catalyst with Single Atom Reaction Sites	**Prof Kostya (Ken) Ostrikov** Plasma nanotechnology for clean energy transition	**Prof. Limin Wu** High-performance radiative cooling films/coatings based on hierarchical porous structure
13:20 - 13:40	**Prof Zongli Xie** Nanomaterials enhanced dual layer membranes for desalination and wastewater treatment towards zero liquid discharge	**Prof Michael Yu** Nanoimmunochemistry: modulating tumor immunosuppressive microenvironment for boosting cancer immunotherapy	**Prof Guangshan Zhu** Porous Aromatic Frameworks (PAFs)	**A/Prof Dongchen Qi** Engineering the Two-Dimensional Hole Gas on Diamond by Surface Transfer Doping for Future Carbon Electronics	**Prof Antonio Tricoli** Designing Durable Electrocatalyst for Acidic and Alkaline Water Splitting
13:40 - 13:55	**A/Prof Stefano Freguia** Microbial biofilms as carbon electrode modifications	**A/Prof Barbara Rolfe** Navigating the Path to Safe and Effective Nanotherapeutics	**Prof Jianwei Nai** Micro-Nano Assembly Materials for Electrocatalysis	**Prof Jia Xie** Developing Advanced Lithium-ion Battery for Grid-scale Energy Storage	**Prof Gang Liu** Photocatalytic Overall Water Splitting with Ferroelectric & Paternalized Photocatalysts
13:55 - 14:10	**Dr Eirini Goudeli** Methanol production by CO_2 hydrogenation using hybrid nanoparticle-membrane reactors	**Dr Yinghong Zhou** ImmunoEngineering for Periodontal Tissue Regeneration	**Prof Jingsan Xu** Liquids interfacial catalysis and photocatalysis: from the perspective of sustainable chemistry	**Prof Sudakar Chandran** Inferring sublattice distortion and tailoring the properties of $Cs_2B'B''X_6$ (B' = Ag, Na; B'' = Bi, In; X = Cl, Br) double perovskites	**Prof Rachel Caruso** Heterojunction Photocatalysts
14:10 - 14:25	**Dr George Chen** Transport Phenomena in Charged Polymer Membranes	**Dr Qian Peter Su** Intracellular Temporal, Spatial and Thermal Dynamics Revealed by Biophysical Nanotools and Advanced Imaging	**A/Prof Zongyou Yin** Towards Nano-integration with Functional Components for Photo-reforming of Organics	**Dr Daniel Walter** Reverse bias behaviour of perovskite cells	

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14:25 - 14:40	**A/Prof Simon Smart** Net Zero Australia: Pathways to Decarbonisation	**Dr Lei Bao** Carbon Dot-Based Nanostructures and Their Applications	**A/Prof Dawei Su** Precise Defect Engineering on Graphitic Carbon Nitrides for Boosted Solar H_2 Production	**Prof Bin Dong** Double self-reinforced coordination modulation constructing stable Ni^{4+} for water oxidation	**Prof Qiang Zhang** The Promotion of Emerging Energy Materials for Next-Generation Batteries through Lithium Bond Chemistry
14:40 - 15:10	**Afternoon Tea**				
Venue	Roosevelt Room	Lincoln Room	Kennedy Room	Washington Room	Executive Suite Room
24th Aug Afternoon Session	**Session 21: Catal&Energy** **Chair: Simon Smart**	**Session 22: Bio&Energy** **Chair: Peter Su**	**Session 23: Catalysis** **Chair: Yao Zhen, Zongyou Yin**	**Session 24: Energy** **Chair: Daniel Walter, Sudakar Chandran**	**Session 25: AAS-CAS Forum** **Chair: Antonio Tricoli, Gang Liu**
15:10 - 15:30	**Prof Christian Doonan** Metal-organic Framework Catalysts for Sustainable Chemistry	**Prof Dewei Chu** Bio-inspired Moisture Electric Generator: A Green Energy Harvesting Technology	**Prof Daniel Lau** Efficient and scale-up viable CO_2 electro-reduction to C_2H_4 via water	**Prof Zifeng Yan** Research on cathode materials for rechargeable aluminum ion batteries	**Prof Xinyong Tao** Materials for lithium metal anodes
15:30 - 15:45	**A/Prof Jiabao Yi** Tuning the carbon-based materials for carbon capture and as electrodes for supercapacitors	**Dr Xiaodan Huang** Enabling Aluminium Batteries Manufacturing	**Dr. Limei Yang** FIB preparation: Key for high-quality transmission electron microscopy and atom probe tomography	**A/Prof Zhiyuan Zeng** Electrochemical lithium intercalation & exfoliation in 2D TMDs and its in-situ studies	**Prof Lan Fu** Design and fabrication of self-powered nanowire array gas sensors
15:45 - 16:00	**A/Prof Jung-Ho Yun** Halide Perovskite Single Crystals for Optoelectronic Applications	**Dr Shuying Wu** Wearable Sensors based on Elastic Polymer Nanocomposites for Health Monitoring	**A/Prof Porun Liu** Probing Transition Metal Electrocatalysts for Energy Conversion Applications	**A/Prof Weiwei Lei** Novel 2D Nanomaterials for energy harvesting and storage	
16:00 - 16:10	**Dr Meng Zhang** Gas-quenching inks for methylammonium-free perovskite solar cells	**Dr Mohammad Tavakkoli Yaraki** Metal nanocluster enabled SERS enhancement via charge transfer	**Dr Gábor Varga** Non-conventional synthesis of solid F(rustrated)L(ewis)P(airs) catalysts via surface modification of	**Dr Xiaolei Shi** Thermoelectric of tin selenides: strategies for improving their performance	**Prof Xiaojing Hao** Emerging earth-abundant absorber materials for next-generation solar cells

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			hydrotalcites by cation insertion		
16:10 - 16:20	**Dr Shilin Zhang** High Entropy Alloy Enables Efficient CO_2 Redox Reactions	**Dr Wei Zhang** An engineered cancer-derived small extracellular vesicle-liposome hybrid delivery system for targeted treatment of breast cancer	**Dr Liang Wang** 2D Epitaxial Hetero-structures for Photo-catalysis	**Dr Borui Liu** Impact of Membrane Modifications on Energy Efficiency in Battery Applications	**Prof Feng Li** Mixing for Charge Storage
16:20 - 16:30	**Dr Huan Li** Electrocatalysis in Metal-Sulfur Batteries	**Ms Grishma Pindolia** Optoelectronic properties of $Cs_2AgSbBr_6$ double perovskite with vacancy defects	**Ms Shanshan Ding** Surface Ligand Engineering for Highly Efficient and Stable $FAPbI_3$ Quantum Dot Solar Cells		
16:30 - 17:00	**Room ends for dinner preparation**		**Session 26: ECR Forum** **Chair: Ardeshir Baktash, Meng Zhang, Zhiliang Wang**	**Session 27: Editor Forum** **Chair: Yun Liu, Julian Steele, Peng Chen, Haijiao Lu**	**Session 28: AAS-CAS Forum** **Chair: Limin Wu, Hongqi Sun**
			ECR Forum Session G **Mr Mazen Alanazi** **Mr Su-Ho Ahn** **Ms Javeria Bashir** **Mr Yuanqing Mao**	**Journal Editors' Panel Discussion** Publishing high-impact research: challenges and opportunities **Panellists:** **Dr Peijun Tu** (Nature Commun.), **Dr Esther Levy** (Adv. Mater.), **Prof Zaiping Guo** (Chem. Sci.), **Prof Frank Caruso**	**Prof Prashant Sonar** Soft Organic Semiconductors and their Devices for Electronics, Energy and Sensing
17:00 - 17:30			ECR Forum Session H **Ms Yiqing Wang** **Ms Zhuojing Yang** **Ms Huayue Zhang** **Mr Wenyi Chen**		**Prof Hongxia Wang** Metal Halide Perovskite Materials for Optoelectronic Applications and Beyond **Prof Zhenxiang Cheng** Tunning of electron/spin configurations in transition metal oxides for higher OER
18:30 - 21:30	**Conference Dinner (Venue: Roosevelt & Lincoln Room)**				

25th Aug	Parallel Sessions				
Venue	Roosevelt Room	Lincoln Room	Kennedy Room	Washington Room	Executive Suite Room
25th Aug Morning Sessions	**Session 29: Environment Chair: George Chen**	**Session 30: Biomaterials Chair: Hao Song**	**Session 31: Catalysis Chair: Liangzhi Kou, Zhiliang Wang**	**Session 32: Energy Chair: Xiaojing Hao, Yi Jia**	**Session 33: AAS-CAS Forum Chair: Dawei Wang, Ziqi Sun**
08:30 - 08:50	**Prof Hongqi Sun** Three-dimensional graphene macrostructure for advanced oxidation processes	**Prof Chunxia Zhao** Bioinspired platform technologies for cancer nanomedicine	**Prof Dan Li** Ions at electrified graphene-electrolyte interfaces: Beyond electrocatalysis	**Dr Gang Xiong** Material Innovation for Thin Film Photovoltaics	**Prof Tierui Zhang** Defective Layered Double Hydroxide Based Nanostructured Photocatalysts
08:50 - 09:10	**Prof Teik-Thye Lim** Realizing Synergistic Coupling of Hetero-geneous Catalysis and Filtration in Catalytic Ceramic Membrane for Advanced Water Treatment	**Prof Yin Xiao** Haemostasis and Immune Response in Bone Bio-materials Development	**Prof Qin Li** Environmental-Friendly Quantum Materials for Solar-Driven Hydrogen production	**Prof Qichun Zhang** Covalent Organic Frameworks as Promising Platforms for Diverse Applications	**Prof Deepak Dubal** Rapid Synthesis of Battery Materials
09:10 - 09:25	**Prof Pingan Song** Engineering phosphorus-containing lignin for advanced epoxy biocomposites with enhanced thermal, fire retardancy and mechanical properties	**Dr Run Zhang** Responsive Molecules and Nanomaterials in Optical Bioanalysis and Diseases Treatment	**Prof Adam Lee** Nanoengineered Catalysts for Sustainable Chemistry	**A/Prof Min Hong** Advancing Thermoelectric Materials via Engineering Phonon Transport	**A/Prof Bingyang Shi** New Strategies for Brain Disease Drug Development from new target discovery to Blood-Brain Barrier (BBB) Penetrative Nanomedicine
09:25 - 09:40	**Prof Ying Li**	**Dr Priyank V. Kumar**	**A/Prof Guohua Jia**	**Dr Cheng Zhang**	

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	Highly active Defective carbon catalyst derived from waste polymers for acetylene hydrochlorination	Machine Learning Predictions of Anti-microbial Activity of Polymers	Single-Layer Transition Metal Dichalcogenide Nanosheets for Methanol-Storable Solar Hydrogen Fuel	Polymer in Energy: from Molecular Design to Advanced Batteries	**Prof Pei Yuan** Heterogeneous Selective Catalytic Hydrogenation for Producing High Value-added Hydrogenated Nitrile Butadiene Rubber
09:40 - 09:55	**A/Prof Lei Ge** Towards high-efficient polycrystalline membranes: intercrystalline defect effects and healing	**Prof Han Hu** Operando Characterization of Energy Materials Based on Electron Spin	**Dr Jingrun Ran** Rational design/synthesis of photocatalysts for solar-to-chemicals conversion	**Dr Jinqiang Zhang** Refining structures of electrochemical catalysts for Li-O_2 battery and electrocatalysis	
09:55 - 10:30	**Morning Tea**				
Venue	Roosevelt Room	Lincoln Room	Kennedy Room	Washington Room	Executive Suite Room
25th Aug Morning Sessions	**Session 34: Environ&Energy Chair: Xiangkang Zeng**	**Session 35: Bio&Energy Chair: Chunxia Zhao**	**Session 36: Catalysis Chair: Qin Li, Dan Li**	**Session 37: Energy Chair: Zifeng Yan, Jennifer Macleod**	**Session 38: AAS-CAS Forum Chair: Tierui Zhang, Deepak Dubal**
10:30 - 10:50	**Prof Karen Wilson** Designing catalytic materials for biorefining	**Prof Wenjun Zhang** Applications of Plasma Technology in Electrochemical Energy Conversion and Storage Materials	**Prof Kazuhiko Maeda** Building block approaches to artificial photosynthesis of water splitting and carbon dioxide conversion	**Prof Kourosh Kalantar-Zadeh** Liquid Metals: From Single Atoms to High-Entropy Catalysts	**Prof Ziqi Sun** Self-assembly of 2D materials for sustainable energy storage and conversion
10:50 - 11:05	**Prof Yuerui Lu** Uninterrupted battery-free data-intensive transmission for environmental monitoring	**Dr Jingwei Hou** Making photocatalysts large, simple and recyclable	**Dr Esther Levy** Open and Innovative Publishing with the Advanced Journals	**Prof Yi Jia** Defect Engineering for Hydrogen Related Materials Design	**Prof Jianpu Wang** Perovskite LEDs for Lighting and Displays
11:05 - 11:20	**Prof Guiying Li** Design of biomimetic photocatalysts and their applications in environmental pollution control	**Dr Asif Mahmood** Towards Battery Chemistries beyond Lithium Ion Batteries: Developing Sodium-ion battery anode	**A/Prof Liangzhi Kou** Ferroelectric and Topological Catalysis: Novel Chemical Reactions driven by Physics	**Dr Jianfeng Mao** Advanced electrode and electrolyte materials for potassium ion batteries	**Prof Jian Liu**

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11:20 - 11:35	**Prof Xu Zong** Charge Transport Modulation for Solar Fuel Production	**Dr Kaiwen Sun** The strategies for achieving high efficiency Kesterite Cu_2ZnSnS_4 thin film solar cells	**Dr Li Wei** Heterogeneous molecular catalysts for electro-chemical synthesis	**A/Prof Haifei Zhan** Mechanical Energy Storage based on Diamond Nanostructures	Sustainable Photocatalytic Production of H_2O_2 over Phenolic Resins Catalysts
11:35 - 11:50	**Dr Seungju Kim** Electrospun Composite Membranes of PVDF-HFP with ZIF-L for CO_2 Stripping within Membrane Contactors	**Dr Huicong Yang** Modifying kinetics of electrode-electrolyte interface reaction by solvent-solute interactions	**Dr Haoxin Mai** Halide Perovskite Photocatalysts: Design and Synthesis	**Dr Bing Sun** Electrode and Catalyst Development for Lithium–Oxygen Batteries	**A/Prof Zi Sophia Gu** Catalytic Nanomedicine Enabled by Nanosheets
11:50 - 12:00	**Dr Junxian Liu** Exploration of C–N Coupling for Electrocatalytic Urea Synthesis	**Dr Zihao Wang** Developing Personalized Vein-Chips for Enhanced Cerebral Venous Sinus Thrombosis Diagnosis using a Movable Type Manufacturing Technique	**Dr Haobo Li** Artificial intelligence assisted design for C_2+ Selectivity for CO_2 Electroreduction on Oxidized Cu-based Catalysts	**Dr Hong Duc Pham** Upcycling Spent Materials from End-of-life Rechargeable Batteries into High Value-Added Electrodes	**Prof Zhenguo Huang** Hydrogen-rich B containing systems for hydrogen storage
12:00 - 12:10	**Dr Tao Wan** Robust Flexible Quasi-Solid-State Ag-Zn Batteries with High Areal Capacity and Long Cycle Life	**Dr Vishal Mutreja** Development of White light emitting systems using Carrot and Carrot-derived Carbon dots	**Ms Kyra M. K. Yap** Design Principles for the Operation of Solar-Driven CO_2 Reduction Devices Under Diurnal Conditions	**Dr Tongen Lin** Multi-functional treatment on lithium-rich layered cathode materials	**Prof Dawei Wang** High Loading Electrodes for Quasi-Solid Batteries
12:10 - 12:20	**Mr Chengxi Zhang** Spontaneous Metal Ions Diffusion and Modification Across 3D/2D Hetero-structured Perovskites for Moisture and Light-stable Solar Cells	**Dr Jieying Liang** Locking the Ultrasound-Induced Active Conformation of Metalloenzymes in Metal–Organic Frameworks	**Mr Xianlong Li** Ferroelectric Poling Modulated Band Bending in $BiFeO_3$ Photoelectrode	**Dr Zhenzhen Wu** Lithium-ion Battery Recycling and Reclamation	
12:20 - 13:20	**Lunch**				

25th Aug Plenary Sessions	Charis: Lianzhou Wang, Alan Rowan, Xiwang Zhang (Venue: Roosevelt & Lincoln Room)
13:20 - 13:50	**Plenary 10: Prof. Huiming Cheng** Inorganic Liquid Crystals Based On 2D Materials
13:50 - 14:20	**Plenary 11: Prof. Debra Bernhardt** Theoretical and Computational Molecular Science: Nonequilibrium Systems, Fluids and Materials
14:20 - 14:50	**Plenary 12: Prof. Maria Forsyth** Polymer Electrolytes and Batteries
14:50 - 15:30	**Presentation Awards and Closing Remark**
15:30 - 16:00	**Afternoon Tea**
15:30 - 17:00	**UQ Lab tours for visitors on request**
18:00 - 22:00	**Invited Speaker Dinner**