

Nanomaterials and Nanodevices for Sustainable Environment (NNSE) 2023 workshop program (7th September)

Venue: Ground floor, SEB building (E8), UNSW

| Session 1 - Nanodevices for Smarter IoT (G05, SEB Building) | | | |
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| Time | Name | Institution | Title |
| 9:00 | | | Registration/Welcome session |
| 9:30 | | | Opening speech: Prof. Michael Ferry (Head of MSE), Ms Lucy Zhang (School Manager) |
| 9:40 | | | Plenary Talk: Prof. Chun Wang (Scientia Professor, Head of ME) |
| 10:00 | Zengxia Pei | UNSW | Functional electrolyte design for efficient Zn batteries |
| 10:15 | Md Arifur Rahim | UNSW | Self-Assembled Functional Nanomaterials Based on Natural Polyphenols |
| 10:30 | Priyank Kumar | USYD | Engineering hot-carrier transfer to improve plasmonic catalysis |
| 10:45 | Chun-Ho Lin | UNSW | Multilayer Graphene Oxide-Based Moisture-Enabled Nanogenerator with Enhanced Performance and High Flexibility |
| 11:00 | | | Morning Tea/Lab Tour |
| 11:20 | Rongkun Zheng | USYD | Halide perovskite optoelectronics |
| 11:35 | Zhenxiang Cheng | UOW | Ferroic materials and their catalysis applications |
| 11:50 | Shuai He | UNSW | International Hydrogen Industry Collaboration Opportunities |
| 12:05 | Yunxiao Wang | UOW | Electrocatalyzing S redox reactions toward superior room-temperature sodium-sulfur batteries |
| 12:30 | | | Lunch |
| 13:30 | Yuan Chen | USYD | Tailoring carbon materials for energy and environmental applications |
| 13:45 | Limei Yang | UTS | FIB preparation: Key for high-quality transmission electron microscopy and atom probe tomography |
| 14:00 | Li Wei | USYD | Producing H2O2 from Heterogeneous Molecular Electrocatalysts |
| 14:15 | Yahua He | UOW | Controllable flow and manipulation of liquid metals |
| 14:30 | Dawei Zhang | UNSW | Nanoscale electrical and mechanical properties of van der Waals ferroelectric CuInP2S6 |
| 15:00 | | | Afternoon Tea (Lab Tour) |
| 15:20 | Jiabao Yi | UON | Layered materials for hydrogen evolution reaction |
| 15:35 | Moein Seyfour | UNSW | Ferroelectric Solitons in Oxide Superlattices |
| 15:50 | Tiziana Musso | UNSW | Novel Magnetic Topological Phases in BFO: A Computational Approach |
| 16:05 | Long Hu | UNSW | Nanocrystals as bricks for electronic applications |
| 16:20 | | | Award (G05, SEB Building) |
| 17:30 | | | Dinner (Kingsford Peking Restaurant, 498 Anzac Parade Kingsford, NSW) |
| Session organizers: Dawei Su, Shuhua Peng, Zhi Li | | | |

| Session 2 - Nanomaterials for Better Environment (G02, SEB Building) | | | |
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| Time | Name | Institution | Title |
| 9:00 | | | Registration/Welcome session |
| 9:30 | | | Opening speech: Prof. Michael Ferry (Head of MSE), Ms Lucy Zhang (School Manager) |
| 9:40 | | | Plenary Talk: Prof. Chun Wang (Scientia Professor, Head of ME) |
| 10:00 | Sarina Sarina | USYD | Plasmonic optical trapping in photocatalysis |
| 10:15 | Jun Huang | USYD | Tailored nano catalyst for CO2 conversion |
| 10:30 | Mengyao Li | UNSW | MoS2 based electrocatalysts |
| 10:45 | YiChao Wang | WSU | Advanced chemical sensing enabled by low-dimensional nanomaterials |
| 11:00 | | | Morning Tea/Lab Tour |
| 11:20 | Wei Kong Pang | UOW | Site-specific Doping Strategy for Better-performance Energy Materials: A Root-cause Analysis Using Neutron and X-ray Scattering |
| 11:35 | Peggy Zhang | CSIRO Lindfield | Engineering Ferroelectric Heterostructures for Low-Energy Electronic Device Applications |
| 11:50 | Yangyang Liu | CSIRO Lindfield | Sustainable seawater utilization: Enabling high efficiency chlorine electrosynthesis through single-atom catalysts. |
| 12:05 | Jian Pan | UNSW | Engineering in Power to X |
| 12:30 | | | Lunch |
| 13:30 | Jinjiang Zhang | UTS | Refining structures of electrochemical catalysts for energy storage and conversion |
| 13:45 | Bing Sun | UTS | Electrode and Catalyst Design for Metal–air Batteries |
| 14:00 | Rui Tang | USYD | Nanosteucture-Interface engineering of halide perovskite catalysts toward solar-fuel generation |
| 14:15 | Jiaquan Li | USYD | Transition-metal single atom catalysts for valorization of biomass-derived chemicals. |
| 14:30 | Yong Zhao | CSIRO Newcastle | Integrated CO2 capture and electrolysis for syngas production |
| 15:00 | | | Afternoon Tea /Lab Tour |
| 15:20 | Xunyu Lu | UNSW | Sustainable manufacturing of hydrogen peroxide: where are we now? |
| 15:35 | Simin Moradmand | UON | From CO2 Electrolysis to Magnetic Carbon Formation |
| 15:50 | Zhengbiao Peng | UON | Gas-liquid-solid flow at microscale towards applications in micro- and nano-reactors |
| 16:05 | Emma Lovell | UNSW | Using visible light to enhance thermal catalytic CO2 conversion |
| 16:20 | | | Award (G05, SEB Building) |
| 17:30 | | | Dinner (Kingsford Peking Restaurant, 498 Anzac Parade Kingsford, NSW) |
| Session organizers: Zhaojun Han, Emma Lovell, Jianbo Tang | | | |

| Session 3 - Biomaterials and Devices for Healthier Life (G07, SEB Building) | | | |
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| Time | Name | Institution | Title |
| 9:00 | | | Registration/Welcome session |
| 9:30 | | | Opening speech: Prof. Michael Ferry (Head of MSE), Ms Lucy Zhang (School Manager) |
| 9:40 | | | Plenary Talk: Prof. Chun Wang (Scientia Professor, Head of ME) |
| 10:00 | Lingqing Zong | UNSW | Oxygen-Vacancy-Rich MXene Nanonetworks: A Novel Strategy for Antimicrobial Sonodynamic Therapy. |
| 10:15 | Cindy Gunawan | UTS | Adaptation of Biofilm-Forming Pathogen to Antimicrobial Nanoparticle |
| 10:30 | Peter Su | UTS | Intracellular Temporal, Spatial and Thermal Dynamics Revealed by Biophysical Nanotools and Advanced Imaging |
| 10:45 | Lining Ju | USYD | Inspiration from the Past: Harnessing Ancient Movable Type Printing for Future Personalised Diagnosis of Stroke and Cerebral Thrombosis |
| 11:00 | | | Morning Tea/Lab Tour |
| 11:20 | Shuying Wu | USYD | Wearable sensors based on polymer nanocomposites |
| 11:35 | Thanh Nho Do | UNSW | TBC |
| 11:50 | Hoang-Phuong Phan | UNSW | Inorganic nanomembranes for wearable and implantable applications |
| 12:05 | Tao Wan | UNSW | Wearable battery for health monitoring |
| 12:30 | | | Lunch |
| 13:30 | Yuling Wang | MQ | Small extracellular vesicles as new biomarkers in cancer diagnosis and therapy |
| 13:45 | Ying Zhu | UTS | Optical strategies for single extracellular vesicle detection towards early cancer diagnosis |
| 14:00 | Xiaoxue Xu | UTS | Dynamic Nonlinearity in Upconversion Nanoparticles for Advanced Biomedical Optical Imaging |
| 14:15 | Bingyang Shi | MQ | New Strategies for Brain Disease Drug Development from new target discovery to Blood-Brain Barrier (BBB) Penetrative Nanomedicine |
| 14:30 | Zhen Jiang | UOW | Designing Soft Robotic Materials |
| 15:00 | | | Afternoon Tea/Lab Tour |
| 15:20 | Tianruo Guo | UNSW | Advances in biology, Not Devices, Will Determine the Effectiveness of Neural Prostheses |
| 15:35 | Ming Li | MQ | High-Throughput Single-Cell and Single-Molecule Assays with Droplet Microfluidics |
| 15:50 | Zihao Wang | USYD | Developing Personalized Vein-Chips for Enhanced Cerebral Venous Sinus Thrombosis Diagnosis using a Movable Type Manufacturing Technique |
| 16:05 | Wengqian Wang | UNSW | Retrograde transport protein activates fast axonal transport of gold nanoparticles in live neurons |
| 16:20 | | | Award (G05, SEB Building) |
| 17:30 | | | Dinner (Kingsford Peking Restaurant, 498 Anzac Parade Kingsford, NSW) |
| Session organizers: Sophia Gu, Kang Liang, Jiangtao Xu | | | |