



ICNASA 2020 Program

31st January – 3rd February 2020

Swinburne University of Technology, 453 Burwood Road, Hawthorn Campus, Melbourne VIC Australia

January 31, 2020 (Friday)		Venue
17:30-19:30	Registration open & Welcome reception night	AMDC Level 3 Sky Lounge

February 1, 2020 (Saturday) - Day 1			Venue
08:00-09:00	Registration		AMDC Level 3 Sky Lounge
09:00-09:10	Welcome Speech (Vice Chancellor, Swinburne University of Technology: Prof. Linda KRISTJANSON, AO)		AMDC 301
09:10-09:20	Opening Remarks (Prof. Baohua JIA)		
09:20-10:05	Plenary Talk 1 (Chairperson: Prof. Baohua JIA, Swinburne University of Technology) Topic: <i>Guiding Selection of Materials for Energy Storage Systems through Computation</i> By: Prof. Debra BERNHARDT, The University of Queensland		AMDC 301
10:05-10:35	Morning Tea		AMDC Level 3 Sky Lounge
Parallel Session A			
	EN 102	EN 103	AMDC 301
	Chairperson: Prof. John ZHU	Chairperson: Dr. Jiajia ZHOU	Chairperson: Dr. Tianyi Ma
	Functional Materials	Materials Science	Energy Generation & Storage
10:35-11:00 <i>Keynote</i>	Prof. Francesca IAKOPI (University of Technology Sydney) <i>Wafer-scale Graphene using Cubic Silicon Carbide on Silicon for Integrated Technologies</i>	Dr. Zongli XIE (CSIRO) <i>Nanomaterials Enhanced Mixed Matrix Membranes for Efficient Separation of Aqueous Mixtures</i>	Prof. Hongxia WANG (Queensland University of Technology) <i>Address the Stability of Perovskite Solar Cell</i>
11:00-11:25 <i>Keynote</i>	A./Prof. Yulin ZHONG (Griffith University) <i>Advancing Green and Cost-efficient Electrochemical Engineering of Functional 2D Nanomaterials</i>	Prof. Xiaolin WANG (The University of Wollongong) <i>Grand Design of New Materials and New Properties</i>	Prof. Michelle SPENCER (RMIT University) <i>Density Functional Theory Modelling of Nanomaterials for Applications as Batteries, Sensors and Devices</i>

11:25-11:50 <i>Keynote</i>	Prof. Bronwyn FOX (Swinburne University of Technology) <i>Translational Research on Graphene</i>	Prof. Huanting WANG (Monash University) <i>Nanocomposite Membranes for Molecular and Ionic Separations</i>	Dr. Liangzhi KOU (The Queensland University of Technology) <i>2D Ferroic Materials and the Application in Energy Conversion</i>
11:50-12:05	Besan ALAGAWANI (Swinburne University of Technology) <i>Mechanical Properties of Graphene-concrete under High Strain Rates</i>	Dr. Zengji YUE (Invited) (The University of Wollongong) <i>Topological Insulators for Low-energy Electronics and Advanced Optoelectronics</i>	Prof. Mainak MAJUMDER (Monash University) (<i>Keynote</i>) <i>Translating Novel Battery and Supercapacitor Technologies Through Industry Partnerships</i>
12:05-13:30	Lunch Break + Lab Tour		AMDC Level 3 Sky Lounge
	Parallel Session B		
	EN 102	EN 103	AMDC 301
	Chairperson: Dr. Han LIN	Chairperson: Prof. Hongxia WANG	Chairperson: Prof Chenghua Sun
	Materials Characterization	Energy Generation & Storage	Simulation & Modelling
13:30-13:55 <i>Keynote</i>	Prof. Scott FINDLAY (Monash University) <i>Methods for Materials Characterization via High-Resolution Scanning Transmission Electron Microscopy: Recent Progress and Challenges</i>	Dr. Weiwei LEI (Deakin University) <i>Novel Boron (Carbon) Nitride Nanomaterials for Water Cleaning and Energy Harvesting</i>	Prof. Christopher CHANTLER (The University of Melbourne) <i>Plasmon-Coupling Theory of the Electron Inelastic Mean Free Path, Energy Loss Functional and the Dielectric Function for LEEM, for low Energy Electrons</i>
13:55-14:20 <i>Keynote</i>	Dr. Jean-Philippe TETIENNE (The University of Melbourne) <i>Imaging Magnetism and Charge Transport in 2D Materials with a Quantum Diamond Microscope</i>	Dr. Yunxia YANG (CSIRO) <i>CO₂ Hydrogenation to Hydrocarbon Fuels</i>	Prof. Phoebe CHEN (La Trobe University) <i>Data Analysis and Pattern Discovery for Biomedical Applications</i>
14:20-14:45 <i>Keynote</i>	Prof. Alan LAU (Swinburne University of Technology) <i>Recent Research Development in Fibre Reinforced Polymer Composites for Engineering Applications</i>	Dr. Xiaoming WEN (Swinburne University of Technology) <i>Time-resolved Micro-Spectroscopy Techniques in Materials Science</i>	Prof. Zhe LIU (The University of Melbourne) <i>Computational Design for Two-Dimensional Smart Energy Conversion and Energy Storage Materials</i>
14:45-15:30	Plenary Talk 2 (Chairperson: Prof. Debra BERNHARDT, The University of Queensland) Topic: 2D and 3D Graphene architecture for multi-functional nanocomposites		AMDC 301

	By: Prof. Jang-Kyo KIM, The Hong Kong University of Science and Technology	
15:30-16:00	Afternoon Tea	AMDC Level 3 Sky Lounge
16:00-17:20	OpenLab Opening + Panel Discussion (Individual program available online)	AMDC 301
17:20-18:30	Networking + Prototype Demonstration + Lab Tour	AMDC Level 3 Sky Lounge

February 2, 2020 (Sunday) - Day 2		Venue
08:00-09:00	Registration (AMDC Level 3 Sky lounge)	AMDC Level 3 Sky Lounge
09:00-09:45	Plenary Talk 3 (Chairperson: Prof. Xiaolin WANG, The University of Wollongong) Topic: <i>A Library of Atomically-Thin Metal Chalcogenides</i> By: A/Prof. Zheng LIU, Nanyang Technological University	AMDC 301
09:45-10:15	Morning Tea	AMDC Level 3 Sky Lounge
Parallel Session C		
	EN 102	EN 103
	Chairperson: Dr. Nisa V SALIM	Chairperson: Dr. Liangzhi KOU
	Nanomaterials & Nanostructures	2D Materials
		AMDC 301
		Chairperson: Prof. Cuie WEN
		Energy Generation & Storage
10:15-10:40 <i>Keynote</i>	Dr. Jiajia ZHOU (University of Technology Sydney) <i>Single Particle Spectroscopy of Functional Nanomaterials</i>	Prof. Jingliang LI (Deakin University) <i>The Electron Structure of Graphene Oxide: Free Radicals and Reactivity</i>
10:40-11:05 <i>Keynote</i>	Prof. Jiangtao XU (University of New South Wales) <i>Precision Polymer Synthesis via Single Unit Monomer Insertion</i>	Dr. Timothy DUGNAN (Monash University) <i>Accurately Predicting the Ion-graphene Interaction in Solution using Corrected First Principles Simulation</i>
11:05-11:30 <i>Keynote</i>	Prof. Zhenguo HUANG (University of Technology Sydney) <i>Boron for Energy Storage and Transfer (BEST) Materials</i>	Dr. Alexey GLUSHENKOV (The Australian National University) <i>Electrochemical activity of Sb₂S₃-rGO Composite with Potassium</i>
		A/Prof. Xiaojing HAO (The University of New South Wales) <i>The Promise and Progress of Earth-abundant and Environmentally-friendly Kesterite Solar Cells</i>

11:30-11:55 <i>Keynote</i>	Dr. Fan WANG (University of Technology Sydney) <i>In-depth Super-resolution Imaging of Upconversion Nanoparticles</i>	Dr. Qianqian SHI (Monash University) <i>2D Freestanding Janus Gold Plasmene Nanosheets</i>	Dr. Xiangdong LI (RMIT University) <i>Electronics Thermal Management using Nanoengineered Coatings – The Multiscale Nature and Challenges</i>
11:55-13:30	Lunch Break + Lab Tour		AMDC Level 3 Sky Lounge
	Parallel Session D		
	EN 102	EN 103	AMDC 301
	Chairperson: Prof. Hao WANG	Chairperson: Dr Weiwei LEI	Chairperson: A/Prof. Sumeet WALIA
	Materials Science	Energy Generation and Storage	Advanced Materials
13:30-13:55 <i>Keynote</i>	Prof. Chun-Qing LI (RMIT University) <i>Investigating Effect of Corrosion on Mechanical Properties based on Macro and Atomic Scale studies</i>	Prof. Shujuan HUANG (Macquarie University) <i>Novel Passivation Techniques for Efficient and Stable Perovskite Solar Cells</i>	Dr. Tianyi MA (The University of Newcastle) <i>Functional Materials for Gas-involved Energy Reactions</i>
13:55-14:20 <i>Keynote</i>	Prof. Nigel MARKS (Curtin University) <i>Topology of Disordered 3D Graphene Networks</i>	Prof. Jun HUANG (University of Sydney) <i>Optimizing the Sustainability of Hydrogen Production and Biomass/Wastes Conversion from Catalytic Processing</i>	Dr. Xun XU (The University of Wollongong) <i>Liquid Metal: A New Platform for Superconducting, Medical, and Nano-electric applications</i>
14:20-14:45 <i>Keynote</i>	Prof. John ZHU (The University of Queensland) <i>Novel Electro-catalysts for Oxygen Evolution Reaction in Water Splitting</i>	Prof. Yun LIU (The Australian National University) <i>A New Strategy to Manipulate Nano Films for High Performance Photovoltaics</i>	Prof. Zhi-Gang CHEN (University of Southern Queensland) <i>High-performance Thermoelectric Materials and Devices: Progress and Applications</i>
14:45-15:00	Dr. Dan YANG (Invited) (Swinburne University of Technology) <i>Advanced Electrode Materials for Lithium-ion Batteries with wide Operating Temperatures</i>	Mr Baolei LIU (University of Technology Sydney) <i>Upconversion assisted dual-NIR structured illumination microscopy</i>	Dr. Ada Pui-yan HUNG (Invited) (Swinburne University of Technology) <i>Advanced Composites at Low Temperature Environments</i>
15:00-15:30	Afternoon Tea		AMDC Level 3 Sky Lounge
15:30-16:15	Plenary Talk 4 (Chairperson: Prof. Jang-Kyo KIM, The Hong Kong University of Science and Technology) Topic: <i>Batteries and Polymer Electrolytes</i>		AMDC 301

	By: Prof. Michel ARMAND, CIC Energigune Parque Tecnológico de Álava	
16:15-16:30	Introduction to New Journal "Materials Reports: Energy" By: Prof. Baohua JIA, Swinburne University of Technology	
16:30-18:15	Dedicated Poster Viewing Session	AMDC Level 3 Sky Lounge
18:15-19:00	Bus travel to Dinner Venue	
19:00-22:00	Conference Dinner + Prize and Award Announcement	Melbourne River Cruises

February 3, 2020 (Monday) - Day 3			Venue
08:00-09:00	Registration (AMDC Level 3 Sky lounge)		AMDC Level 3 Sky Lounge
	Parallel Session E		
	EN 102	EN 103	AMDC 301
	Chairperson: Dr. Pingan SONG	Chairperson: A/Prof. Amir KARTON	Chairperson: Dr. Jiayang WU
	Nanomaterials & Nanostructures	Materials Science and Engineering	Bio/Nano Photonics
09:00-09:25 <i>Keynote</i>	Dr. Yali LI (Swinburne University of Technology) <i>Controlled Ca Release in Biowaste Polymer Binder for Green Infrastructure</i>	Prof. Yuncang LI (RMIT University) <i>New Biocompatible Mg-based Alloys for Implant Materials</i>	Prof. Ann ROBERTS (The University of Melbourne) <i>Meta-optics for Optical Information Processing</i>
09:25-09:50 <i>Keynote</i>	Prof. Xiaodong HUANG (Swinburne University of Technology) <i>Topology Optimization of Acoustic and Optical Metamaterials</i>	Prof. Hao WANG (University of Southern Queensland) <i>Bring Science Back to Cement/Concrete Research</i>	Prof. Andrew CLAYTON (Swinburne University of Technology) <i>Using Photonics to Design Better Drugs</i>
09:50-10:05	Ms Shao Ing WONG (Swinburne University of Technology) <i>Graphene Oxide with Different Reduction Degree for Supercapacitors</i>	Ms Kit-Ying CHAN (Swinburne University of Technology) <i>Multifunctional Carbon Fibre Reinforced Polymer Composite for Energy Storage</i>	Dr. Jiayang Wu (Invited) (Swinburne University of Technology) <i>Functional Integrated Photonic Devices Incorporating 2D Layered Graphene Oxide Films</i>
10:05-10:35	Morning Tea		AMDC Level 3 Sky Lounge
	Parallel Session F		
	EN 102	EN 103	AMDC 301
	Chairperson: Prof. Mainak MAJUMDER	Chairperson: Dr. Timothy DUIGNAN	Chairperson: Dr. Nishar HAMEED
	Energy Generation & Storage	Advanced Materials	Functional Materials

10:35-11:00 <i>Keynote</i>	A/Prof. Nikhil MEDHEKAR (Monash University) <i>In Silico Materials Design for Next Generation Batteries</i>	Prof. Cuie WEN (RMIT University) <i>Nanoscale Spinodal Reinforcement for the Development of High-Strength, Low Modulus Biomedical Materials</i>	A/Prof. Amir KARTON (The University of Western Australia) <i>Can Pristine Graphene Catalyze Chemical Reactions?</i>
11:00-11:25 <i>Keynote</i>	Dr. Bin LUO (The University of Queensland) <i>Nano-space Confined Strategy towards 2D Hybrid Structures for Energy Storage Applications</i>	A/Prof. Sumeet WALIA (RMIT University) <i>Materials Engineering for Cross-disciplinary Applications</i>	Dr. Rosalie HOCKING (Swinburne University of Technology) <i>Why Has Redox Chemistry Got to Do with Catalyst Design?</i>
11:25-11:50 <i>Keynote</i>	A/Prof. Chenghua SUN (Swinburne University of Technology) <i>Computer-aided Catalysts Design for Ammonia Synthesis at Room Temperature</i>	Dr. Haolan XU (University of South Australia) <i>Nanoscale Photothermal Materials for Solar Steam Generation</i>	Dr. Dongchen QI (The Queensland University of Technology) <i>Enabling Diamond Nanoelectronics by Solid-State Surface Transfer Doping</i>
11:50-12:15 <i>Keynote</i>	Prof. Feng WANG (Swinburne University of Technology) <i>Towards Robust Inverse Design of Organic Dyes in Organic DSSC Applications</i>	Dr. Pingan SONG (University of Southern Queensland) <i>Engineering Eco-friendly Highly Effective Flame Retardants for Fire-safe Polymeric Materials</i>	Prof. Madhu BHASKARAN (RMIT University) <i>Stretchable Oxides towards Next Generation Electronics and Optical Devices</i>
12:15-13:30	Lunch Break + Lab Tour		AMDC Level 3 Sky Lounge
	Parallel Session G		
	EN 102	EN 103	AMDC 301
	Chairperson: Dr. Rosalie HOCKING	Chairperson: Prof. Christopher CHANTLER	Chairperson: Prof. Jingliang LI
	Advanced Materials	Materials Science	Functional Materials
13:30-13:55 <i>Keynote</i>	Dr. Tuan Sang TRAN (RMIT University) <i>Engineering of Graphene Dispersions into Three-dimensional Macrostructures</i>	Professor Alireza Fallahi AREZOU DAR (Amirkabir University of Technology) <i>Manufacturing Process Effect on Microstructure evolution, to Optimize Property for the Dual Phase (HSLA) Steel & High Strength Alloys</i>	Dr. Nisa V SALIM (Swinburne University of Technology) <i>Functional Carbon Materials with Biomimicking Structures</i>

14:45-15:00	Ms Huihui ZHANG (Swinburne University of Technology) <i>Graphene Energy Storage Devices</i>	Industrial Talk Topic: <i>New Perspective in 3D Raman Imaging & Correlative Techniques</i> By: Ken van't SCHIP , Scitek Australia	Dr. Peter C SHERRELL (INVITED) (The University of Melbourne) <i>Water Oxidation from Transition Metal Dichalcogenide Heterostructures</i>
13:55-14:20 <i>Keynote</i>	Dr. Nishar HAMEED (Swinburne University of Technology) <i>Multifunctional Polymers and Hybrid Materials for Future Manufacturing</i>	Prof. Cyrille BOYER (The University of New South Wales)	A/Prof. Zongyou Yin (The Australian National University) <i>Roles of 2D based Interfaces in Electronics and Optoelectronics</i>
14:20-14:35	Dr. Di WANG (Beihang University) <i>Holographic Display Method to Suppress Speckle Noise based on Effective Utilization of Spatial Light Modulator</i>	Dr. Lalit Mohan SAINI (National Institute of Technology, Kurukshetra) <i>Synthesis and Antimicrobial Action of Silver Nanoparticles utilizing Aloe Vera Extract</i>	Dr. Babita SAINI (National Institute of Technology, Kurukshetra) <i>Effect of Different Waste Materials and Aggregate Types on Engineered Cementitious Composite</i>
14:35-14:45	Closing Ceremony		AMDC 301
14:45-15:15	Afternoon Tea		AMDC Level 3 Sky Lounge