

## Symposium on 2D Materials in Decarbonization Applications

### 29th – 31st Jan 2024

### AGENDA

#### 29th January 2024

diTime	Speaker	Title	Location
08:00	Registration/Welcome Coffee		<b>Main Auditorium Building C Main Campus C00068-C01066</b>
08:30-09:00	<b>Opening &amp; Welcome</b>	<b>Hassan Arafat &amp; Feiyu Kang</b>	
Chairs: Hassan Arafat & Feiyu Kang			
09:00-10:00	<b>Plenary Talk</b> Hui-Meng Cheng	Exploration of New 2D Materials and Their New Properties	
10:00-11:00	<b>Plenary Talk</b> Yury Gogotsi	MXene for Electrocatalysis, Energy Storage, and Conversion	
<b>11:00-11:30 Coffee &amp; Tea Break</b> <b>Building R Foyer near R01013</b>			

#### 29<sup>th</sup> January Parallel Session 1:

Chairs: Hui-Meng Cheng and Yury Gogotsi			
11:30-12:00	<b>Keynote Talk</b> Kin Liao	Thermo-electro-mechanical Characterization of Lattices Made from 2D Materials	<b>Building R 1st Floor R01013</b>
12:00-12:30	<b>Keynote Talk</b> Yidan Cao	Approaches Towards High-Energy-Density Anode-Free Lithium Metal Battery	
12:30-13:00	<b>Keynote Talk</b> Jang-Kyo Kim	2D Materials for Multifunctional, Multiscale Composite Aerogels	
<b>13:00-14:30 Lunch Break</b> <b>Multipurpose Room, Building C</b>			
Chairs: Zhen Zhou and Kin Liao			
14:30-15:30	<b>Plenary Talk</b> Abdul Ghani Olabi	Progress in two dimensional materials in energy storage/conversion devices	<b>Building R 1st Floor R01013</b>
15:30-16:30	<b>Plenary Talk</b> Hua Zhang	Phase Engineering of Nanomaterials (PEN)	
<b>16:30- 17:00 Coffee &amp; Tea Break</b> <b>Building R Foyer near R01013</b>			
Chairs: Abdul Ghani Olabi and Yidan Cao			
17:00-17:30	<b>Keynote Talk</b> Zhen Zhou	High-Throughput Screening of 2D Materials for Energy Conversion and Storage	<b>Building R 1st Floor R01013</b>
17:30-17:50	<b>Invited Talk</b> Emad Alheseinat	2D Materials for Enhancing the Performance of Emerging Desalination Processes	

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17:50-18:10	<b>Invited Talk</b> Yu Lei	How can we utilize defects in two-dimensional materials to probe the Bio-world?	
18:10-18:30	<b>Invited Talk</b> Nilesh Rajaram Chodankar	Electrochemical energy storage: Beyond organic system towards greener and sustainable future	
18:30-18:50	<b>Invited Talk</b> Ming Liu	A Direct View on Li-Ion Transport and Li-Metal Plating in Inorganic and Hybrid Solid-State Electrolytes	
<b>End of First Day</b>			

### 29<sup>th</sup> January Parallel Session 2:

<b>Chairs: Hassan Arafat and Feiyu Kang</b>			
11:30-12:00	<b>Keynote Talk</b> Zhen-Dong Huang	Large size 2D materials for energy storage systems	<b>Building R 2nd Floor R02013</b>
12:00-12:30	<b>Keynote Talk</b> Zhong-Shuai Wu	Chemistry of 2D Materials for Micro-Electrochemical Energy Storage Devices	
12:30-13:00	<b>Keynote Talk</b> Zhenglong Xu	Liquid sulfur growing on 2D materials for fast charging lithium sulfur batteries	
13:00-14:30 <b>Lunch Break</b> <b>Multipurpose Room, Building C</b>			
<b>Chairs: Zhen Zhou and Kin Liao</b>			
14:30-15:30	<b>Plenary Talk</b> Abdul Ghani Olabi	Progress in two dimensional materials in energy storage/conversion devices	<b>Building R 1st Floor R01013</b>
15:30-16:30	<b>Plenary Talk</b> Hua Zhang	Phase Engineering of Nanomaterials (PEN)	
16:30- 17:00 <b>Coffee &amp; Tea Break</b> <b>Building R Foyer near R01013</b>			
<b>Chairs: Hua Zhang and Zhen-Dong Hunag</b>			
17:00-17:30	<b>Keynote Talk</b> Xiaowei Yang	Tuning Two-dimensional Channel for Ion Sieving	<b>Building R 2nd Floor R02013</b>
17:30-17:50	<b>Invited Talk</b> Kaikai Li	Electrochemical Ion Insertion-Induced Phase Transformations: Applications in 2D MoS <sub>2</sub> Nanosheet Preparation and Water Splitting	
17:50-18:10	<b>Invited Talk</b> Sunil P. Lonkar	Nanohybrids of Two-Dimensional (2D) Materials for Energy Storage and Conversion Applications	
18:10-18:30	<b>Invited Talk</b> Dengyun Zhai	Graphite anode for potassium ion batteries	
18:30-18:50	<b>Invited Talk</b> Dalaver Hussain Anjum	Electron Microscopy of Carbon Materials: Challenges and Opportunities	
<b>End of First Day</b>			

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### 30th January 2024

Time	Speaker	Topic	Location
08:00	Registration/Welcome Coffee		<b>Building R 1st Floor R01013</b>
<b>Chairs: Ming Liu and Ludovic Dumeé</b>			
09:00-10:00	<b>Plenary Talk</b> Cristina Vallés	Epoxy nanocomposites as conductive adhesives for Out-of-Autoclave in-situ CFRPs repair	
10:00-11:00	<b>Plenary Talk</b> Ian Kinloch	2D composites for Energy Transition	
<b>11:00-11:30 Coffee &amp; Tea Break</b> <b>Building R Foyer near R01013</b>			

### 30<sup>th</sup> January Parallel Session 1:

<b>Chairs: Ian Kinloch and Jang-Kyo Kim</b>			
11:30-12:00	<b>Keynote Talk</b> Mustapha Jouiad	Graphene-Transition Metal Dichalcogenides Tandem for Carbon-free Hydrogen fuel	<b>Building R 1st Floor R01013</b>
12:00-12:30	<b>Keynote Talk</b> Rehan Umer	Graphene as digital material for aerospace composites manufacturing	
12:30-13:00	<b>Keynote Talk</b> Yarjan Abdul Samad	Sustainable Liquid Phase Exfoliation of 2d Materials for Application in Space and Beyond	
<b>13:00-14:30 Lunch Break</b> <b>Multipurpose Room, Building C</b>			
<b>Chairs: Guangmin Zhou and Rehan Umer</b>			
14:30-15:30	<b>Plenary Talk</b> Quanhong Yang	Sieving Carbons for Sodium Ion Batteries: Past, Present and Future	<b>Building R 1st Floor R01013</b>
15:30-16:30	<b>Plenary Talk</b> Xixiang Zhang	Wafer-Scale Single-Crystal 2D Materials Growth on Insulating Substrates	
<b>16:30- 17:00 Coffee Break</b> <b>Building R Foyer near R01013</b>			
<b>Chairs: Yanbing He and Mustapha Jouiad</b>			
17:00-17:30	<b>Keynote Talk</b> TieJun Zhang	Insights into Gas Bubble Formation on 2D Materials-enhanced Porous Electrodes for Solar-driven Water Splitting	<b>Building R 1st Floor R01013</b>
17:30-17:50	<b>Invited Talk</b> Doong-Wook Lee	Deep learning based 2D reconstruction of STEM images	

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17:50-18:10	<b>Invited Talk</b> Ling Qiu	Fabrication of Boron Nitride Nanosheets and Their Applications	
18:10-18:30	<b>Invited Talk</b> Nitul Rajput	Graphene enhanced self-healing and phase change material	
<b>End of Second Day</b>			

### 30<sup>th</sup> January Parallel Session 2:

<b>Chairs: Cristina Valles and Wencai Ren</b>			
11:30-12:00	<b>Keynote Talk</b> Lianxi Zheng	2D materials based bifunctional Z-scheme photocatalyst for environmental remediation	<b>Building R 2nd Floor R02013</b>
12:00-12:30	<b>Keynote Talk</b> Guangmin Zhou	Improving Basal Plane Activity of 2D Materials for Reversible Li-CO <sub>2</sub> Batteries	
12:30-13:00	<b>Keynote Talk</b> Yanbing He	Strategy for Improving the Ion Transport Throughout in Solid State Lithium Batteries	
13:00-14:30 <b>Lunch Break</b> <b>Multipurpose Room, Building C</b>			
<b>Chairs: Guangmin Zhou and Rehan Umer</b>			
14:30-15:30	<b>Plenary Talk</b> Quanhong Yang	Sieving Carbons for Sodium Ion Batteries: Past, Present and Future	<b>Building R 1st Floor R01013</b>
15:30-16:30	<b>Plenary Talk</b> Xixiang Zhang	Wafer-Scale Single-Crystal 2D Materials Growth on Insulating Substrates	
16:30- 17:00 <b>Coffee Break</b> <b>Building R Foyer near R01013</b>			
<b>Chairs: Ludovic Dumeé and Lianxi Zheng</b>			
17:00-17:30	<b>Keynote Talk</b> Wencai Ren	Graphene oxide: synthesis, assembly and applications	<b>Building R 2nd Floor R02013</b>
17:30-17:50	<b>Invited Talk</b> Tingzheng Hou	Theory and Data Driven Energy Materials Discovery	
17:50-18:10	<b>Invited Talk</b> Kuang Yu	Molecular Force Fields Enhanced by Artificial Intelligence Techniques	
18:10-18:30	<b>Invited Talk</b> Andreas Schiffer	Mechanical and piezoresistive characteristics of self-sensing GNP/UHMWPE composites processed via selective laser sintering	
<b>End of Second Day</b>			

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08:00	Registration/Welcome Coffee		<b>Building R 1st Floor R01013</b>
<b>Chairs: Jang-Kyo Kim and Hassan Arafat</b>			
08:30-09:30	<b>Plenary Talk</b> Kyriaki Polychronopoulou	Designing Multifunctional Graphene-based Catalysts for Added-Valued Products	
09:30-10:30	<b>Plenary Talk</b> Tierui Zhang	Defective Layered Double Hydroxide Based Nanostructured Photocatalysts	
<b>10:30-11:00 Coffee &amp; Tea Break</b> <b>Building R Foyer near R01013</b>			

### 31<sup>st</sup> January Parallel Session 1:

<b>Chairs: Yarjan Abdul Samad and Kyriaki Polychronopoulou</b>			
11:00-11:30	<b>Keynote Talk</b> Ahsanulhaq Qurashi	Development of 2D Materials and their Nanoarchitectures for Energy Conversion Applications	<b>Building R 1st Floor R01013</b>
11:30-12:00	<b>Keynote Talk</b> Feng Li	Mixing for Charge Storage in Graphene Materials	
12:00-12:30	<b>Keynote Talk</b> Zhe Weng	Interfacial Engineering for Highly Reversible Zn anodes	
12:30-13:00	<b>Keynote Talk</b> Ruitao Lyu	Defect engineering of 2D layered materials for eco-friendly applications	
13:05	<b>Closing Ceremony</b>	<b>Hassan Arafat &amp; Feiyu Kang</b>	
<b>13:30 Grab and go Lunch</b> <b>Building R Foyer near R01013</b>			
<b>End of Symposium</b>			

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#### 31<sup>st</sup> January Parallel Session 2:

Chairs: Tierui Zhang and Ludovic Dumeé			
11:00-11:30	<b>Keynote Talk</b> Cheng Yang	Engineering High-frequency filter supercapacitors based on laser processing method	<b>Building R 2nd Floor R02013</b>
11:30-12:00	<b>Keynote Talk</b> Bilu Liu	Mass production of 2D electrocatalysts for industrial relevant high-current-density seawater electrolysis	
12:00-12:30	<b>Keynote Talk</b> Ziqiang Wang	Low dimensional materials confinement for solid-state Li metal battery	
12:30-13:00	<b>Keynote Talk</b> Wei Lv	Assembly of graphene-based materials for lithium-sulfur batteries	
13:05	<b>Closing Ceremony</b>	<b>Hassan Arafat &amp; Feiyu Kang</b>	<b>1st Floor R01013</b>
13:30 <b>Grab and go Lunch</b> <b>Building R Foyer near R01013</b>			
<b>End of Symposium</b>			