

# Materials for Clean Energy Conference (MCEC 2019)

## Programme

**Day 1 – Monday, 8<sup>th</sup> April**

### Oral Sessions (Auditorium)

Time	Event
08:30 - 09:30	Registration and coffee
09:30 - 09:45	Welcome talk
<b>Session 1.1</b> <i>Chaired by: Anja Roeding</i>	
09:45 - 10:30	<b>Invited Talk 1.1 - Bruno Ehrler, AMOLF, Amsterdam, The Netherlands</b> <i>The path towards efficient and stable perovskite/silicon tandem solar cells</i>
10:30 - 10:50	<b>O1.1</b> Yifan Dong, Imperial College London <i>The Impact of Driving Force on Recombination Dynamics in Nonfullerene Organic Solar Cells</i>
10:50 - 11:30	<b>Coffee break and Poster session 1.1 (room F16 CS6 &amp; 7)</b>
<b>Session 1.2</b> <i>Chaired by: Bruno Ehrler</i>	
11:30 - 11:50	<b>O1.2</b> Vanira Trifiletti, Queen Mary University London <i>In situ gel formation of high quality kesterite thin films</i>
11:50 - 12:10	<b>O1.3</b> Ross Hatton, Warwick University <i>Light-catching silver window electrodes for high performance organic photovoltaics</i>
12:10 - 12:30	<b>O1.4</b> Mian Zahid Hussein, University of Exeter <i>MOF derived Photocatalysts for high efficient solar-light-driven H<sub>2</sub> evolution</i>
12:30 - 12:50	<b>O1.5</b> Liya Guo, Imperial College London <i>Fine Control of Curie Temperature of La(Fe,Co,Si)<sub>13</sub> Using Electrolytic Hydriding</i>
12:50 - 14:00	<b>Lunch</b>
<b>Session 1.3</b> <i>Chaired by: Dibin Zhu</i>	
14:00 - 14:45	<b>Invited Talk 1.2 - Robert Dorey, University of Surrey</b> <i>Towards sustainable manufacture of functional thick film energy harvesting devices</i>
14:45 - 15:05	<b>O1.6</b> Matias Carandell, Universitat Politècnica de Catalunya, Spain <i>Kinetic energy harvester device for oceanic drifter applications</i>
15:05 - 15:25	<b>O1.7</b> Thibault Degousée, Queen Mary University London <i>Thermal conductivity of isotropic and aligned polymer films for thermoelectric applications</i>
15:25 - 16:00	<b>Coffee break and Poster session 1.2 (room F16 CS6 &amp; 7)</b>
<b>Session 1.4</b> <i>Chaired by: Robert Dorey</i>	
16:00 - 16:20	<b>O1.8</b> Jibrán Khaliq, Northumbria University <i>Fabrication of piezoelectric composites using high temperature di-electrophoresis technique</i>
16:20 - 16:40	<b>O1.9</b> Prateek Asthana, National Institute of Technology, Hamirpur, India <i>A Model of a Wideband Microscale Piezoelectric Energy Harvester for extracting ambient vibrations</i>
16:40 - 17:00	<b>O1.10</b> Akshayaa Pandiyan, Imperial College London <i>Performance Analysis of Amplified Piezoelectric Actuators (APA) for Energy Harvesting</i>

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Poster Session 1.1 and 1.2 (room F16 CS6 & 7)

<b>P1.1</b>	Eugenio Suená Galindez, Queen Mary University London <i>Electrochemically Exfoliated Graphene Oxide for Thermoelectric Applications</i>
<b>P1.2</b>	Kieran Spooner, University College London <i>Predicting the Thermoelectric Properties of the Novel Half-Heusler, TaIrGe</i>
<b>P1.3</b>	William Ferguson, University of Exeter <i>Auxetic Design in Vibration Energy Harvesting</i>
<b>P1.4</b>	Chris Bowen, University of Bath <i>Electrical and mechanical self-healing in high performance dielectric elastomer actuator materials</i>
<b>P1.5</b>	Tao Wen, University of Chester <i>Integration and Characterisation of Piezoelectric Macro-Fibre Composite on Wind Turbine Blades for Vibration Energy Harvesting</i>
<b>P1.6</b>	Pakinam el-Touby, Northumbria University <i>Manufacturing of Advance Functional Materials for Sensing and Actuation Applications- A review</i>
<b>P1.7</b>	Shane Davies, University of Exeter <i>Nano-scale Patterning For Thermoelectric Applications</i>
<b>P1.8</b>	Kavya Sadanandan, University of Exeter <i>Fabrication of semi-transparent triboelectric nanogenerator for wearable devices</i>
<b>P1.9</b>	Xue Yan, University of Bath <i>In Situ Fabrication of Carbon Fibre Reinforced Polymer Composites with Embedded Macro Fibre Composites for Sensing and Energy Harvesting Applications</i>
<b>P1.10</b>	Miwon Kang, Imperial College London <i>Hybrid thermal energy harvesting mechanism</i>
<b>P1.11</b>	Mayue Shi, Imperial College London <i>Energy Harvesting Piezoelectric Wind Speed Sensor</i>
<b>P1.12</b>	Sandra Dias, Instituto Superior Técnico, Lisbon, Portugal <i>Flame-wall Interactions Influence on Thermoelectric Power Generation</i>
<b>P1.13</b>	Edmund Chan, University of Exeter <i>Optimisation of Band Gap Tuning of Hybrid Organic – Inorganic Perovskite Solar Cell</i>
<b>P1.14</b>	Weidong Tang, Queen Mary University of London <i>Doping halide perovskites single crystal for thermoelectric applications</i>

# Materials for Clean Energy Conference (MCEC 2019)

## Programme

**Day 2 – Tuesday, 9<sup>th</sup> April**

### Oral Sessions (Auditorium)

Time	Event
08:30 - 09:30	<b>Registration and coffee</b>
<b>Session 2.1</b> <i>Chaired by: Ana Neves</i>	
09:30 - 09:50	<b>O2.1</b> Tianjun Liu, Queen Mary University London <i>Thermoelectrics in halide perovskites</i>
09:50 - 10:10	<b>O2.2</b> Philip Bellchambers, Warwick <i>Enhanced Oxidation Stability of Transparent Copper Window Electrodes for Organic Photovoltaics</i>
10:10 - 10:30	<b>O2.3</b> Kieran Walsh, University of Exeter <i>Intercalated graphene electrodes for photovoltaic applications</i>
10:30 - 11:00	<b>Coffee break and Poster session 2.1 (room F16 CS6 &amp; 7)</b>
<b>Session 2.2</b> <i>Chaired by: Paolo Bondavalli</i>	
11:00 - 11:45	<b>Invited Talk 2.1</b> Nuria Tapia-Ruiz, Lancaster University <b><i>New design perspectives on electrode materials for Na-ion technology</i></b>
11:45 - 12:05	<b>O2.4</b> Heather Au, Imperial College London <i>Structural influences on the performance and storage mechanisms in hard carbons for sodium-ion batteries</i>
12:05 - 12:25	<b>O2.5</b> Terence Liu, Northumbria University <i>Superlight Electrode Materials for Polymer Electrolyte Fuel Cells</i>
12:25 - 12:45	<b>O2.6</b> Josh Bailey, University College London <i>Multi-scale X-ray computed tomography of Thermal Ceramics for Energy Storage</i>
12:45 - 13:45	<b>Lunch</b>
<b>Session 2.3</b> <i>Chaired by: Nuria Tapia-Ruiz</i>	
13:45 - 14:30	<b>Invited Talk 2.2 - Paolo Bondavalli, Thales, France</b> <b><i>Graphene based supercapacitors fabricated using spray-gun deposition method</i></b>
14:30 - 14:50	<b>O2.7</b> Apostolos Panagiotopoulos, Imperial College London <i>3D printed microsupercapacitors from 2D material inks</i>
14:50 - 15:10	<b>O2.8</b> Barun Chakrabarti, Imperial College London <i>Enhanced performance of a regenerative hydrogen/vanadium fuel cell using graphene modified electrodes</i>
15:10 - 15:40	<b>Coffee break and Poster session 2.2 (room F16 CS6 &amp; 7)</b>
<b>Session 2.4</b> <i>Chaired by: Ifan Stephens</i>	
15:40 - 16:00	<b>O2.9</b> Mei-Chin Pang, Imperial College London <i>Electrochemical Modelling of Relaxation Behaviour in Solid-state Lithium Batteries: From Measurements to Application Design</i>
16:00 - 16:20	<b>O2.10</b> Yang Xu, University College London <i>A potassium-ion battery full cell based on highly nitrogen-doped carbon nanofibers</i>
16:20 - 16:40	<b>O2.11</b> Maria Crespo, Queen Mary University London <i>Lignin-derived electrospun freestanding carbons as alternative electrodes for RFB</i>

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Poster Session 2.1 and 2.2 (room F16 CS6 & 7)

P2.1	Ned Taylor, University of Exeter <i>Solving the Riddle of Colossal Permittivity</i>
P2.2	Gopika Rajan, University of Exeter <i>Flexible graphene- based temperature and humidity sensor on textile fibre</i>
P2.3	Andrew Wain, National Physical Laboratory <i>Electrodeposited Molybdenum Disulfide Films as Hydrogen Evolution Electrocatalysts</i>
P2.4	Conor Price, University of Exeter <i>Artificial Photosynthesis from Perovskite Materials: A SrSnO<sub>3</sub> Case Study</i>
P2.5	Daisy Thornton, Imperial College London <i>Probing parasitic gas evolution reactions in nickel-rich LiNi<sub>x</sub>Mn<sub>y</sub>Co<sub>z</sub>O<sub>2</sub> lithium-ion battery cathodes for electric vehicle applications</i>
P2.6	Francis Davies, University of Exeter <i>2D Rules: Band Gap Engineering in Weakly Interacting van der Waals Heterostructures</i>
P2.7	Warda Rahim, University College London <i>Understanding the phase behavior of pyrochlore Bi<sub>2</sub>Sn<sub>2</sub>O<sub>7</sub></i>
P2.8	Conor Murphy, University of Exeter <i>FeCl<sub>3</sub> doped few-layer graphene as flexible electrode in solution processed OLED devices</i>
P2.9	James Dodwell, University College London <i>Voltammetric measurements of platinum dissolution in PEM water electrolyzers</i>
P2.10	Keenan Smith, University College London <i>Nanoscale investigation of PEM fuel cell materials with in-situ electrochemical atomic force microscopy</i>
P2.11	Mo Qiao, Imperial College London <i>Oxygenophilic Ionic Liquids Promote Oxygen Reduction/Evolution Catalysis in Nanocarbons</i>

## Programme

Day 3 – Wednesday, 10<sup>th</sup> April

## Oral Sessions (Auditorium)

Time	Event
08:30 - 09:00	Registration and coffee
<b>Session 3.1</b> <i>Chaired by: Maria Escudero-Escribano</i>	
09:00 - 09:45	<b>Invited Talk 3.1 – Magdalena Titirici, Imperial College London</b> <b><i>Black is the new green</i></b>
09:45 - 10:05	<b>O3.1</b> Maria Sokolikova, Imperial College London <i>Metastable phase for electrocatalytic hydrogen production: Direct synthesis of the metallic 1T' WSe<sub>2</sub></i>
10:05 - 10:25	<b>O3.2</b> Xinhua Liu, Imperial College London <i>Advanced Tough Gel Electrolytes for All-solid-state Flexible Energy Devices</i>
10:25 - 11:00	Coffee break and Poster session 3.1 (room F16 CS6 & 7)
<b>Session 3.2</b> <i>Chaired by: Magdalena Titirici</i>	
11:00 - 11:45	<b>Invited Talk 3.2 – Maria Escudero-Escribano, University of Copenhagen, Denmark</b> <b><i>Enhanced oxygen electrocatalysis for renewable energy conversion</i></b>
11:45 - 12:05	<b>O3.3</b> Servann Herou, Imperial College London <i>Low-cost carbon nanofiber textiles as free-standing electrodes in supercapacitors</i>
12:05 - 12:25	<b>O3.4</b> Jay Bullen, Imperial College London <i>Bifunctional Photocatalyst-Sorbents For Remediation Of Arsenic Contaminated Groundwaters (and electrochemical determination of kinetics)</i>
12:25 - 12:30	Closing remarks

## Poster Session 3.1 (room F16 CS6 &amp; 7)

<b>P3.1</b>	Rose Oates, Imperial College London <i>Copper Nanoparticles for Electroreduction of CO<sub>2</sub> to Sustainable Fuels</i>
<b>P3.2</b>	Alexander Dimitrijevic, University College London <i>Study of degradation mechanisms within Ni-rich NMC cathode materials using imaging and X-Ray spectroscopy</i>
<b>P3.3</b>	Nicholas Hillier, University of Southampton <i>Textile Supercapacitors for E-Textile Applications</i>
<b>P3.4</b>	Sally Luong, Queen Mary University London <i>Thermoelectric Properties of Pristine and Modified CVD grown Single Layer Graphene</i>
<b>P3.5</b>	Kening Wan, Queen Mary University London <i>Flexible and Stretchable Self-Powered Multi-Sensors Based on Thermoelectric Effect</i>