First UK Solar Chemicals Network Symposium

Liverpool, 11th and 12th January 2024

11th January

09:00	Registration opens

10:00	**Alex Cowan and Jenny Zhang**
	Welcome, introduction to the network and pre-event questionnaire feedback

Session 1 – Biocatalysts
Chair tbc

10:20	**Introduction to Theme** *(10 minutes)* *(overview of theme)*
10:30	**Invited Speaker – Professor Stephen Wallace,** University of Edinburgh *Phototrophic Bacteria for Biocompatible Alkene Hydrogenation*
11:05	**Coffee break** *1st Floor Registration Area*
11:30	**C Megarity,** University of Manchester *'Multi-enzyme Cascades Jam-packed and Electrified'*
11:55	**M Kuhnel,** University of Hoheneim *'Solvent engineering as a tool to enable oxygen-tolerant solar chemicals production with air-sensitive enzymes'*
12.20	**Discussion around the Theme**
12:35	**Lunch and Posters** *1st Floor Registration Area*

Session 2 – Advanced Electrocatalysis
Chair and Theme Lead: Dr Ifan Stephens (Imperial College London)

13:30	**Introduction to Theme** *(10 minutes)* *(overview of theme)*
13.40	**Invited Talk – Dr Reshma Rao,** Imperial College London *'Operando characterisation of electrochemical interfaces'*
14:15	**H Jang,** University of Liverpool *'Cationic surfactant switches on the carbon dioxide reduction reaction at gold surfaces'*
14:40	**C Tseng,** Imperial College London *'Probing the Effects of Doped Iridium Oxide on Oxygen Evolution Reaction Using Operando Spectroelectrochemical Techniques'*
15:05	**Discussion around the Theme**
15.20	**Coffee break** *1st Floor Registration Area*

Session 3 – Light Harvesting

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Chair and Theme Lead: Professor Elizabeth Gibson (Newcastle University)

15:40	**Introduction to Theme** *(10 minutes)* *(overview of theme)*
15:50	**Invited Speaker – Professor Tomas Edvinsson,** Newcastle University/Uppsala University *Pathway to utilize IR photons for efficient solar fuel generation*
16:25	**Y Liu,** University of Cambridge *'Semiconductor–enzyme hybrids for solar chemical synthesis'*
16:50	**D Benetti,** Imperial College London *'Photoactivation: manipulating the charge dynamics of metal oxides photoelectrodes with light'*
17:15	**Discussion around the Theme**
17:30	**Poster session and drinks reception** *1st Floor Registration Area*

12th January

09:00	**Welcome by Professor Alex Cowan – SCN Director** *(hand over to themes)*

Session 4 – Device Engineering and Carbon Capture
Chair and Theme Leads: Dr Alex Forse (University of Cambridge)

09:05	**Introduction to Theme** *(10 minutes)* *(overview of theme)*
09:15	**Invited Speaker – Professor Camille Petit,** Imperial College London *"Gas phase CO2 photoreduction using porous materials"*
09:50	**S Kar,** University of Cambridge *'Integrated Capture and Solar-driven Utilization of CO2 from Flue Gas and Air into Syngas'*
10:15	**M Daboczi,** Imperial College London *'Halide perovskite and organic semiconductor photoelectrodes for stable water oxidation and unassisted solar water splitting'*
10:40	**Discussion around the Theme**
10:55	**Coffee break** *1st Floor Registration Area*

Session 5 -
Chair: Professor Jenny Zhang (University of Cambridge)

11:15	**S Yao,** Imperial College London *'Spectroscopic Investigation of Long-lived Electrons in Titanium-Based Metal-Organic Frameworks for Hydrogen Evolution in Dark Photocatalysis'*
11:40	**J Alvim,** Imperial College London 'Investigation of structural instability of Cu2WO4 photocathode during CO2 reduction reaction'

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12.05	**C Li,** University of Liverpool *'Interplay of D/A twist angle and aggregation (π-π interaction) in controlling the nature of CT state formation'*
12:30	**E McQueen,** University of Strathclyde *'Quantitative photocatalytic conversion of CO_2 to highly concentrated formic acid using a hybrid photocatalyst consisting of a conjugated polymer and a supramolecular complex'*
12:55	**Lunch and Posters** *1st Floor Registration Area*

Session 6 - *Chair: Professor Alex Cowan (University of Liverpool)*

13:35	**O Thwaites,** University of Liverpool *'Unravelling the Roles of Integral Polypeptides in Excitation Energy Transfer of Photosynthetic RC-LH1 Supercomplexes'*
14:00	**T Li,** University of Manchester *'Sustainable Electrosynthesis of Cyclohexanone Oxime through Nitrate Reduction on a Zn-Cu Alloy Catalyst'*
14:25	**F Podjaski,** Imperial College London *'Photophysics of gIDTBT nanoparticles in presence of aqueous salt ions and impacts on photocatalysis'*
14:50	**P Sharma,** University College London *'Catalysts for selective electrochemical conversion of CO_2 to methanol'*
15:15	**Closing comments**

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Posters

Number	Name	Poster Title
1	P Sharma	Catalysts for selective electrochemical conversion of CO_2 to methanol
2	AJ Bagnall	Ultrafast Electron Transfer from $CuInS_2$ Quantum Dots to a Molecular Catalyst for Hydrogen Production: *Challenging Diffusion Limitations*
3	S Cobb	Taking Inspiration from the Natural Carboxysome to Utilise Atmospheric Concentrations of CO_2
4	B Siritanarakul	Bipolar membrane electrolyzers for CO_2 reduction using molecular catalysts
5	F Podjaski	Photophysics of gIDTBT nanoparticles in presence of aqueous salt ions and impacts on photocatalysis
6	L Roebuck	Photocatalytic Reforming of Diols over Pt/TiO_2 for the Production of H_2 and Value-Added Chemicals
7	S Saravanabavan	Unassisted (Photo)-electrochemical Water Splitting Using Multi-Junction Solar Cells in Microgravity
8	T Fei	Stabilized states (shallow traps) created by glycol sidechain on Polymer Photocatalyst FgBT extending charges lifetime
9	C Tseng	Probing the Effects of Doped Iridium Oxide on Oxygen Evolution Reaction Using Operando Spectroelectrochemical Techniques
10	M Daboczi	Halide perovskite and organic semiconductor photoelectrodes for stable water oxidation and unassisted solar water splitting
11	Y Liu	Semiconductor–enzyme hybrids for solar chemical synthesis
12	J Yang	Photonic band gap engineering of SnO_2
13	A Malik	Iridium doped Antimony Tin Oxide as a stable material for the Oxygen Evolution Reaction in acid
14	A Mohamad Annuar	Hybrid photothermal-photocatalyst sheets for solar-driven overall water splitting coupled to water purification
15	A Sutton-Cook	Towards Pairing Solar Chemical Production with Central Metabolism of *S. oneidensis* MR-1
16	CWS Yeung	Organic semiconductor-$BiVO_4$ tandems for solar-driven H_2O and CO_2 splitting
17	H Wang	Development of Hybrid Perovskite as Visible Light Photocatalyst for Solar Fuel Production
18	Santiago Rodriguez Jimenez	Valorisation of CO_2 and other abundant waste streams
19	J Wang	Photonic band gap engineering of SnO_2
20	L Oldham	Investigating charge carrier dynamics of metal oxide photoanodes for photoelectrochemical water splitting
21	LL Nascimento	Biomass photoreforming mediated by Ni(II) modified Bi_2WO_6 and Nb_2O_5 photocatalysts
22	M Xia	Efficient Cu_2O Photocathodes for Aqueous Photoelectrochemical CO_2 Reduction to Formate and Syngas
23	Y Li	Towards High-throughput Functional Materials Discovery for H_2O_2 Photoproduction
24	R Tort	Searching for the Rules of Electrochemical Nitrogen Fixation

25	H Ullah	Computational Modeling of Energy Materials
26	Q He	Develop new organic photoactive materials for solar energy conversion and photodetection
27	T He	Charge dynamics study in the effect of facet-engineering to $BiVO_4$ photocatalysts systems
28	E Sokalu	Investigating the platinisation of p-type indium phosphide and the effect of precursor cations on surface morphology