Catalyst Design Strategies for Photo- and Electrochemical Fuel Synthesis (ECAT23)

Keele, United Kingdom, 2023 December 4th - 5th
Conference organizers: Charles Creissen, Qian Wang and Julien Warnan

Conference Program

December 4th - Day 1 (Monday) 1	
08:00 - 09:15	**Registration & Welcome Coffee**
09:15 - 09:30	**nanoGe Opening**
	Session 1.1 Chair: Charles Creissen
09:30 - 10:00 1.1-I1	Marc Fontecave *(College de France)* The new carbon economy: direct and indirect electroconversion of CO2 into organic chemicals
10:00 - 10:30 1.1-I2	Miao Zhong *(Nanjing University)* Leveraging Renewable Energy: Transforming CO2, CO, and Beyond into Valuables
10:30 - 11:00	**Coffee Break**
	Session 1.2 Chair: Charles Creissen
11:00 - 11:30 1.2-I1	Anna Hankin *(Imperial College London, Department of Chemical Engineering, London SW7 2AZ, UK)* Up-scaling solar to fuels devices: important considerations
11:30 - 12:00 1.2-I2	Si-Thanh DONG, Benedikt LASSALLE-KAISER *(Synchrotron SOLEIL, L'Orme des Merisiers Saint-Aubin, Gif-sur-Yvette, France)* Electroreduction of CO2 into C1-C4 Products with an Iron Phthalocyanine
12:00 - 12:30 1.2-I3	Alex Cowan *(University of Liverpool)* Molecular electrocatalysts for the reduction of carbon dioxide
12:30 - 14:00	**Lunch break**
	Session 1.3 Chair: Qian Wang
14:00 - 14:15 1.3-O1	Rafaël Vos *(Catalysis and Surface Chemistry, Leiden Institute of Chemistry, Leiden University)* How Temperature and Pressure Affect the Selectivity of the Electrochemical Reduction of CO2 at Au, Cu and Ni
14:15 - 14:30 1.3-O2	Domenico Grammatico *(AIT Austrian Institute of Technology, Center for Energy, Energy Conversion and Hydrogen)*, Janine Lichtenberger, Helena Kern, Theodoros Dimopoulos Thin film Ag electrodes fabrication for sustainable and high-efficiency electroreduction of CO2 to CO
14:30 - 14:45 1.3-O3	Léonard Curet *(Université de Pau et des Pays de l'Adour, IPREM (EPCP, CNRS-UMR 5254))*, Aurelien Viterisi, Laurent Billon, Emilio Palomares Atomically Precise Silver Acetylides Nanocrystals as Efficient Catalysts for CO2 Reduction Under Industry Relevant Reaction Rates
14:45 - 15:00 1.3-O4	Eileen Yu *(department of chemical engineering, loughborough university)*, Preetam Sharma, Da Li Electrochemical Reduction of CO2 using Gas Diffusion Electrodes
15:00 - 15:15 1.3-O5	Sayan Kar *(University of Cambridge, Yusuf Hamied Department of Chemistry)*, Motiar Rahaman, Virgil Andrei, Subhajit Bhattacharjee, Souvik Roy, Erwin Reisner Integrated Capture and Solar-driven Utilization of CO2 from Flue Gas and Air into Solar Fuels
15:15 - 17:00	**Poster Session**
19:00 - 20:30	**Social Dinner**

December 5th - Day 2 (Tuesday) 2	
08:00 - 09:15	**Welcome Coffee**
09:15 - 09:30	**nanoGe Introduction**
	Session 2.1 Chair: Qian Wang
09:30 - 10:00 2.1-I2	Erwin Reisner *(Department of Chemistry, University of Cambridge, Lensfield Road, CB2 1EW Cambridge, U.K.)* Solar Devices for Sustainable Chemical Synthesis
10:00 - 10:30 2.1-I1	Katharina Brinkert *(Department of Chemistry, University of Warwick, CV4 7AL, Coventry, United Kingdom.)* Utilization of Integrated Semiconductor-Electrocatalyst Systems for Small Molecule Activation and Phase Separation
10:30 - 11:00	**Coffee Break**
	Session 2.2 Chair: Julien Warnan
11:00 - 11:30 2.2-I1	Akihiko Kudo *(Faculty of Science & Carbon Value Research Center, Tokyo University of Science, Tokyo, Japan)* Heterogeneous Photocatalysts for water splitting and CO2 reduction
11:30 - 12:00 2.2-I2	Thomas Hamann *(Chemistry Department, Michigan State University)* Mechanism of Electrocatalytic Ammonia Oxidation Reactions
12:00 - 12:30 2.2-I3	Qian Wang *(Graduate School of Engineering, Nagoya University, Furo-cho, Chikusa-ku, Nagoya 464-8603, Japan)* Photocatalyst sheets for artificial photosynthesis
12:30 - 14:00	**Lunch Break**
	Session 2.3 Chair: Charles Creissen
14:00 - 14:15 2.3-O1	Mariia Ferree *(King Abdullah University of Science & Technology (KAUST), KAUST Solar Center (KSC), Physical Science and Engineering Division (PSE), Thuwal, 23955-6900, Kingdom of Saudi Arabia)*, Jan Kosco, Catherine De Castro, Nisreen Alshehri, Lingyun Zhao, Iain McCulloch, Martin Heeney, Frédéric Laquai Unleashing the Potential of Organic Semiconductor Nanoparticles towards CO2 Photoreduction
14:15 - 14:30 2.3-O2	Marta Liras *(Photoactivated Processes Unit, IMDEA Energy)*, Alejandro García, Sandra Palenzuela Rebella, Tania Mazuelo, Teresa Naranjo, Mariam Barawi, Victor A. de la Peña O´Shea Nanostructuration as key to design Conjugated Porous Polymers for energy applications
14:30 - 14:45 2.3-O3	Shreyas Harsha *(Photocatalytic Synthesis Group, MESA+ Institute for Nanotechnology, University of Twente, P.O. Box 217, 7500 AE Enschede, The Netherlands)*, Rakesh Sharma, Martin Dierner, Chris Baeumer, Guido Mul, Igor Makhotkin, Paolo Ghigna, Erdmann Spiecker, Johannes Will, Marco Altomare Dewetted Pt nanoparticles for electrochemical hydrogen evolution: Role of Pt structure and Pt-substrate-electrolyte triple-phase boundary
14:45 - 15:00	**Closing**

Poster Contribution

010	Nathália Costa *(Photocatalytic Synthesis Group, MESA+ Institute for Nanotechnology, University of Twente, P.O. Box 217, 7500 AE Enschede, The Netherlands)*, Annemarie Huijser, Georgios Katsoukis, Jitte Flapper, Guido Mul Catalytically Active Coatings for the Removal of Indoor Pollutants
015	Wissuta Boonta *(Department of Chemistry, Faculty of Science, Chulalongkorn University, Bangkok 10330, Thailand.)*, Teera Butburee, Junjuda Unruangsri Synergistically Enhancing Photoreduction of CO2 on CdS Quantum Dots Stabilized by Amphiphilic Metallopolymer
023	Alan Bowman *(Laboratory of Nanoscience for Energy Technologies, EPFL)*, Alvaro Rodrí guez Echarri, Fatemeh Kiani, Fadil Iyikanat, Ted Tsoulos, Joel Cox, Ravishankar Sundararaman, Javier García de Abajo, Milad Sabzehparvar, Can Karaman, Giulia Tagliabue Quantifying photochemistry at the nanoscale
025	Takumi Adachi *(Graduate School of Engineering, Nagoya Universtiy, Japan)*, Kazumi Yoshida, Naoki Katayama, Qian Wang Investigation of Reduced Graphene Oxide Incorporated Photocatalyst Sheets for Water Splitting
026	Nadine Schmaus *(Department of Chemistry, Technical University of Munich)* Metal-Organic Framework-Based Cathodes for Photoelectrochemical Fuel Production
027	Lewis Cousins *(School of Chemical and Physical Sciences, Keele University, UK)*, Charlie Creissen, Finley Lloyd Catalyst Optimisation for the Electrooxidation of 5-(hydroxymethyl)furfural to 2,5-furandicarboxylic Acid Under Acidic Conditions
028	George Creasey *(Department of Chemical Engineering, Imperial College London, SW7 2AZ, UK)*, Tristan McCallum, Liam O'Neil, John Wilman Rodriguez Acosta, Andreas Kafizas, Anna Hankin Demonstration of up-scalable BiVO4-based materials from aerosol-assisted chemical vapour deposition with 36 cm2 irradiation area in a prototype photoelectrochemical water splitting device
029	John Wilman Rodriguez Acosta *(Imperial College London, Department of Chemical Engineering, London SW7 2AZ, UK)*, George Creasey, Tristan McCallum, Andreas Kafizas, Anna Hankin Photoelectrocatalytic Water Splitting Using WO3/BiVO4-Mo/co-Catalyst Photoanodes
030	Vanessa Ramm *(Chair of Inorganic and Metal-Organic Chemistry, Department of Chemistry, Technical University of Munich, Garching Germany.)*, Philip M. Stanley, Julien Warnan, Roland A. Fischer Towards Artificial Photosynthesis - Solar Fuel Production in Metal-Organic Frameworks