

Chemical Science Symposium 2021: Biohybrid Approaches to Sustainable Energy Conversion

Programme

Day 1 – 13th September 2021 (Times given for UK BST)

12:00	Welcome and introduction to day 1	
Session 1: Chair – Vincent Artero <i>University Grenoble Alpes & CEA, France</i>		
12:15	Building an artificial chloroplast drop-by-drop using synthetic biochemistry, microfluidics and machine learning Tobias Erb, <i>Max Planck Institute for Terrestrial Microbiology, Germany</i>	Inv.1
12:35	Biohybrid energy transduction platforms inspired by natural photosynthesis and respiration Chan Beum Park, <i>Korea Advanced Institute of Science and Technology, South Korea</i>	Inv.2
12:55	Bioinspired molecular catalysts for the (Photo)Electrochemical Reduction of CO₂ to C1 products with 2, 4, 6 and 8 Electrons. From Mechanistic Studies to Hybrid Systems Marc Robert, <i>University of Paris, France</i>	Inv.3
13:15	Session 1 Discussion	
13:55	Networking demo & Break	
Networking & Discussion		
14:10	Publishing for Impact and Meet the <i>Chemical Science</i> Editorial Team May Copsey & members of the <i>Chemical Science</i> Editorial Board	
15:00	Break	
Session 2: Chair – Nicolas Plumeré <i>Technical University Munich, Germany</i>		
15:10	Developing versatile modular biohybrid materials for light-driven chemistry Julea Butt, <i>University of East Anglia, United Kingdom</i>	Inv.4
15:30	Distributed Fischer-Tropsch and Haber Bosch Cycles from Sunlight, Air and Wastewater Daniel Nocera, <i>Harvard University, United States</i>	Inv.5
15:50	Session 2 Discussion	
16:20	Break	

Poster Session		
16:30	Poster Session 1	
17:30	Happy hour & general networking	

Day 2 – 14th September 2021 (Times given for UK BST)

12:00	Welcome and introduction to day 2	
Session 3: Chair – Erwin Reisner <i>University of Cambridge, UK</i>		
12:10	Mechanism of photosynthetic water oxidation and implications in artificial photosynthesis Jian-Ren Shen, <i>Okayama University, Japan</i>	Inv.6
12:30	Water splitting in natural and artificial photosynthesis Licheng Sun <i>Westlake University, China</i>	Inv.7
12:50	Session 3 Discussion	
Poster Session & Networking		
13:30	Themed Networking Session: Challenges and opportunities for early career researchers in the field of biohybrid sustainable energy conversion	
14:00	Poster Session 2	
15:00	Break	
Session 4: Chair – Shelley Minteer <i>University of Utah, United States</i>		
15:10	Semi-synthetic [FeFe] hydrogenases – <i>in vitro</i> and <i>in vivo</i> applications Gustav Berggren, <i>Uppsala University, Sweden</i>	Inv.8
15:30	Understanding the contribution of the protein scaffold of an artificial enzyme on catalysis Wendy Shaw, <i>Pacific Northwest National Laboratory, United States</i>	Inv. 9
15:50	TBC Alfred Spormann, <i>Stanford University, United States</i>	Inv. 10
16:10	Session 4 Discussion	
16:50	Break	
Networking & Discussion		

17:00	Building an academic research career in a multidisciplinary environment: The skills you need and how to approach your career strategically Robert Bowles, Careers and Professional Development Adviser <i>Royal Society of Chemistry</i>	
17:50	Happy hour, general networking & poster session 3	

Day 3 – 15th September 2021 (Times given for UK BST)

12:00	Welcome and introduction to day 3	
Session 5: Chair – Leif Hammarström <i>Uppsala University, Sweden</i>		
12:10	From H₂ production to CO₂ reduction with the same bio-inspired NiFe complexes Carole Duboc, <i>Grenoble Alpes University/CNRS, France</i>	Inv.11
12:30	Selectivity in CO₂ reduction Abhishek Dey, <i>Indian Association for the Cultivation of Science (IACS), India</i>	Inv.12
12:50	Session 5 Discussion	
Networking & Discussion		
13:20	Inclusion & diversity in the chemical sciences: Driving change in research culture and scholarly publishing Laura Norton, Senior Programme Manager, Inclusion & Diversity <i>Royal Society of Chemistry</i>	
14:10	Break	
Session 6: Chair – Jenny Zhang <i>University of Cambridge, UK</i>		
14:20	Reversibility and efficiency in electrocatalytic and biological energy conversion: what can we learn from enzymes? Judy Hirst, <i>University of Cambridge, United Kingdom</i>	Inv.13
14:40	Sustainable energy conversion with electroactive Microbes and/or their protein nanowires Derek Lovley, <i>University of Massachusetts Amherst, United States</i>	Inv.14
15:00	Synthetic biology approaches to green chemistry Michelle Chang, <i>University of California: Berkeley, United States</i>	Inv.15

How can chemistry and biology inspire new energy technologies?

CHEMICAL SCIENCE SYMPOSIUM 2021

Fundamental questions
Elemental answers

13–15 September
2021

15:20	Session 6 Discussion	
16:00	Final remarks, poster prize awardees and symposium close	