

## Future Energy: Chemical Solutions

12 – 14 September 2007

University of Nottingham, UK

### Programme

#### Wednesday 12 September 2007

11:00	<b>Registration (Exchange Building, Foyer)</b>
12.15	Lunch ( <i>Ticket Only</i> ) - C33
13:25	<b>Welcome</b> - Dr Mercedes Maroto-Valer Conference, Co-Chair
	<b>Session 1: Energy Materials</b> <b>Session Chair: Dr Mercedes Maroto-Valer</b> <b>University of Nottingham, UK</b>
13.30	<b>Keynote</b> <b>Future energy materials: a challenge for materials chemistry</b> Peter Edwards, FRS <i>University of Oxford, UK</i>
14.10	<b>Keynote</b> <b>Molecular semiconductor photovoltaic devices</b> Sir Richard Friend FRS <i>University of Cambridge, UK</i>
14.50	<b>Electrochemical energy storage: beyond the horizon</b> Yuri G. Andreev <i>University of St Andrews, UK</i>
15.20	<b>High H<sub>2</sub> adsorption by porous co-ordination framework materials</b> Xiang Lin, Junjia Jia, Alexander J Blake, Claire Wilson, Neil R Champness, Peter Hubberstey, Gavin Walker and Martin Schröder* <i>University of Nottingham, UK</i>
15.50	Afternoon Coffee – C33
	<b>Session 1: Energy Materials (Continued)</b> <b>Session Chair: Professor Paul Rutter</b> <b>Imperial College London, UK</b>
16.20	<b>Atomic-scale insight into solid state materials for fuel cells and lithium ion batteries</b> M Saiful Islam*, Craig A J Fisher and Peter R Slater <i>University of Bath, UK</i>
16.50	<b>New complex light hydrides for potential hydrogen storage</b> Paul A Anderson* and Philip A Chater <i>University of Birmingham, UK</i>
17.20	<b>Hydrogen storage in novel nitrides</b> Catherine M Jewell, Jinhan Yao and Duncan H Gregory* <i>University of Glasgow, UK</i>
17:50	Close of session
18:15	Dinner ( <i>Ticket only</i> ) – Catering Atrium
19:30	Poster session and Drinks Reception – C33
20:30	Poster session closes

**Thursday 13 September 2007**

08.45	<b>Plenary</b> <b>Technologies for secure and sustainable energy</b> Steve Koonin <i>Chief Scientist, BP, UK</i>
	<b>Session 2: Energy Innovation and Policy</b> <b>Session chair: Dr Matthew Leach</b> <i>Imperial College London, UK</i>
09.25	<b>Keynote</b> <b>Energy innovation and policy to deliver our future energy needs</b> David Vincent <i>The Carbon Trust, UK</i>
10.05	<b>Keynote</b> <b>The links between transport, air quality and climate change</b> David Carslaw <i>University of Leeds, UK</i>
10:45	Morning Coffee – C33
11.15	<b>Supergen-bioenergy</b> A Bridgewater*, J M Jones, Alan Williams, G Kelsall and I Sheild <i>Aston University, UK</i>
11:45	<b>Unlocking the petroleum-chemical complex: the relevance of chemical production in the transition to sustainable energy systems</b> Simon J Bennett* and Peter J G Pearson <i>Imperial College London, UK</i>
	<b>Session 3: Fuel Cells</b> <b>Session Chair: Dr Dennis Lewis</b>
12.15	<b>Understanding bioelectricity generation and biodiversity in microbial fuel cells</b> S B Velasquez Orta*, K P Katuri, I M Head, T Curtis and K Scott <i>University of Newcastle, UK</i>
12:45	<b>Microbial fuel cells extract sustainable energy from wastewater</b> H Hu* and John Andresen <i>University of Nottingham, UK</i>
13.15	Lunch (No tickets required) – Catering Atrium
	<b>Session 4: Carbon Capture and Storage</b> <b>Session Chair: Professor Mike Pilling</b> <i>University of Leeds, UK</i>
14:30	<b>Keynote</b> <b>Burning fossil fuels – how do we evaluate their net impact on climate?</b> Keith Shine <i>University of Reading, UK</i>
15:10	<b>Understanding the chemical transformations in ferric iron containing sediments during carbon dioxide sequestration</b> Susana Garcia* and Mercedes Maroto-Valer <i>University of Nottingham, UK</i>
15:40	Afternoon Coffee – C33
16:10	<b>Amine scrubbing for CO<sub>2</sub> capture from power plant flue gas</b> N J Booth <i>Power Technology, UK</i>

16:40	<b>Development of adsorbent technologies for pre and post-combustion CO<sub>2</sub></b> T C Drage*, A Arenillas, C Pevida, K M Smith and C E Snape <i>University of Nottingham, UK</i>
	<b>Session 5: Nuclear Waste Management</b> <b>Session Chair: Professor Mike Pilling</b> <i>University of Leeds, UK</i>
17.10	<b>Keynote</b> <b>Nuclear fuel cycle and waste management: status, prospects and challenges</b> Bernard Boullis <i>CEA, France</i>
17.50	Close of sessions
18:30	Pre-Dinner Drinks – <i>Catering Atrium</i>
19:00	Conference Dinner (Ticket only) – <i>Catering Atrium</i> Including presentation by Professor David Garner CChem FRSC FRS <i>University of Nottingham &amp; President Elect of the RSC</i>

Friday 14 September 2007

	<b>Session 6: Bio-Energy</b> <b>Session chair: Dr Dennis Lewis</b>
08.45	<b>Keynote</b> <b>Fuels chemistry: history, trends and challenges for alternative fuels</b> John Griffiths <i>University of Leeds, UK</i>
09.25	<b>Cofiring of coal and biomass- a major contribution to carbon dioxide reduction</b> L Ma, J M Jones, M Pourkashanian and Alan Williams <i>University of Leeds, UK</i>
09.55	<b>Bio-diesel from refining wastes of crude vegetable oil</b> V Madhusudhan Rao* and P Ashok Kumar <i>Vignans Engineering College Vadlamudi, India</i>
10.25	Morning coffee – C33
	<b>Session 7: Catalysts for Energy</b> <b>Session Chair: Professor Alan Williams</b> <b><i>University of Leeds, UK</i></b>
10.55	<b>Compact and safe hydrogen storage in solid metal ammines</b> Rasmus Zink Sorensen*, Asbjorn Klerke, Jacob Birke Reves, Ulrich Quaade, Jens Kehlet Norskov and Claus Hviid Christensen <i>Technical University of Denmark</i>
11.25	<b>High throughput nanoceramics discovery; efficient methods for making energy materials</b> Jawwad A Darr <i>University College London, UK</i>
11.55	<b>Development of new nano-catalysts for cleaner energy provisions</b> Edman Tsang <i>University of Reading, UK</i>
12.25	<b>New insight into the reactivity of <math>\text{LiNH}_2</math> with <math>\text{LiH}</math></b> J H Yao, K F Aguey-Zinsou* and X. Guo <i>Queen Mary University of London, UK</i>
12.55	<b>Closing Remarks</b> - Professor Mike Pilling Conference, Co-Chair
13:00	Lunch– C33

\*denotes presenter to whom affiliation applies