

Workshop Program

Capture and conversion of CO₂ into sustainable hydrocarbon fuels

http://www.risoe.dtu.dk/Conferences/HyFC_Academy_2011/workshop.aspx

Workshop, Thursday & Friday April 14 & 15, 2011

Hotel Comwell, Roskilde, Denmark

Day 1 – April 14th

<u>Time</u>	<u>Event</u>
8:30	Coffee
9:00	Welcome and Introduction Søren Linderoth, Professor, Head of Fuel Cell and Solid State Chemistry Division, <i>Risø National Laboratory for Sustainable Energy, DTU, Denmark</i>
9:20	Routes to Synthetic Fuels Mogens Mogensen, <i>Research Professor, and Director of Strategic Electrochemistry Research Center, Risø National Laboratory for Sustainable Energy, DTU, Denmark</i>
10:00	Closing the Fuel Cycle: Air Capture of Carbon Dioxide Klaus Lackner, <i>Ewing-Worzel Professor of Geophysics, Head of Earth & Environmental Engineering Dept., and Director of Lenfest Center of Sustainable Energy, Columbia University, USA</i>
10:40	Coffee break
11:00	US Nuclear Powered High Temperature Electrolysis: Past, Present, and Future Carl Stoots, <i>Research Engineer, Thermal Fluids and Heat Transfer Dept., Idaho National Laboratory, USA</i>
11:40	Performance and Durability of Solid Oxide Electrolysis Cells Sune D. Ebbesen, <i>Scientist, Fuel Cells & Solid State Chemistry Division, Risø National Laboratory for Sustainable Energy, DTU, Denmark</i>
12:20	Synthetic Fuel Production by Recycling CO₂ via Electrolysis John Bøggild Hansen, <i>Senior Scientist and Advisor to Chairman, Haldor Topsøe A/S, Lyngby, Denmark</i>
13:00	Lunch (to be served)
14:30	Solar-Driven Thermochemical Dissociation of CO₂ and H₂O using Non-stoichiometric Ceria Sossina Haile, <i>Professor of Materials Science and of Chemical Engineering, California Institute of Technology, USA</i>
15:10	Solar Thermal Electrochemical Photo (STEP) Carbon Capture and Fuel Production Stuart Licht, <i>GW Professor of Chemistry, George Washington University, USA</i>
15:50	CO₂ capture from air: developments from a high-temperature to a low-temperature cyclic process Jan Wurzbacher ¹ , Aldo Steinfeld ² , ¹ Doctoral student, ² Prof. of Renewable Energy Carriers, <i>Inst. of Energy Technology, ETH Zurich, and Head of Solar Technology Laboratory, Paul Scherrer Institute, Switzerland</i>
16:30	Poster session
-18:00	
19:00	Dinner

Day 2 – April 15th

Time Event

8:30 **Coffee**

9:00 **Breaking the biomass bottleneck of the fossil free society**

Henrik Wenzel, *Professor, Institute for Chemical, Bio and Environmental Technology, University of Southern Denmark, Odense, Denmark*

9:40 **Learning curves for fuel cells and hydrogen technologies**

Bob van der Zwaan, *Senior Scientist, Energy research Centre of the Netherlands; Senior Scientist, Lenfest Center for Sustainable Energy, Columbia University, USA; Adjunct Professor of International Relations, Johns Hopkins University, USA*

10:20 **Reversible electrochemical power plants for 100% renewable electricity and fuels**

Christopher Graves, *Post-doc, Fuel Cells & Solid State Chemistry Division, Risø National Laboratory for Sustainable Energy, DTU, Denmark*

11:00 **Coffee break**

11:20 **Synthetic fuel production using pressurized solid oxide electrolysis cells**

Søren Højgaard Jensen, *Scientist, Fuel Cells & Solid State Chemistry Division, Risø National Laboratory for Sustainable Energy, DTU, Denmark*

12:00 **Conversion of CO₂ to CO by Electrolysis of Molten Lithium Carbonate**

Igor Lubomirsky, *Associate Professor, Department of Materials and Interfaces, Weizmann Institute of Science, Israel*

12:40 **Lunch (to be served)**

14:00 **Artificial photosynthesis – solar fuels: current status and future prospects**

Leroy Cronin, *Professor, Department Chemistry, University of Glasgow, UK*

14:40 **Photoelectrocatalytic water and CO₂ splitting – potential and problems**

Søren Dahl, *Professor, Director of CASE, DTU Physics, Technical University of Denmark*

15:20 **Final comments**

15:30 **Lab tour**