

**Europe – US Workshop**  
***Solar Fuels: Light Capture and Electron Flow***  
**23-26 May 2011**

**J. Heyrovský Institute of Physical Chemistry, Dolejškova 3, Prague**

**Monday, 23 May 2011**

18:00-19:00	<b>Registration, Hotel Troja, lobby</b>
19:00	<b>Welcome party, Hotel Troja, Panorama room</b>

**Tuesday, 24 May, morning**

08:30-09:00	<b>Registration</b>	
09:00-09:15	<b>Opening</b>	
	<i>Setting the stage</i> <i>Chair: Tony Vlček</i>	
09:15-9:45	<b>Harry B. Gray</b> <i>Caltech, USA</i>	21st Century Solar Army
09:45-10:15	<b>Rich Eisenberg</b> <i>Rochester, USA</i>	The Reductive Side of Water Splitting and the Light Driven Generation of Hydrogen From Water: New Developments, Strategies and Results
10:15-10:45	<b>Villy Sundström</b> <i>Lund, Sweden</i>	Solar energy converting materials – the primary steps for light to charge
10:45-11:15	<b>Siddharth Dasgupta</b> <i>Caltech, USA</i>	Global Centers for Solar Fuel and Artificial Photosynthesis
11:15-11:45	<i>Coffee Break</i>	
	<i>Electron transfer</i> <i>Chair: Jay Winkler</i>	
11:45-12:05	<b>Spiros Skourtis</b> <i>Nicosia, Cyprus</i>	Electron Transfer Pathway Control in Biomolecular and Small Molecule Assemblies: The Role of Bridge Motion
12:05-12:25	<b>Stanislav Zálíš</b> <i>Prague, Czech Rep.</i>	Quantum Chemical Modeling of Electron Transfer Processes
12:25-12:45	<b>Jeff J. Warren</b> <i>Caltech, USA</i>	Moving Protons and Electrons Within Proteins: Electron Transfers Assisted by Tyrosine
12:45-13:50	<i>Buffet Lunch</i>	

**Tuesday 24 May, afternoon**

<i>Electron transfer</i> <i>Chair: Harry B. Gray</i>		
13:50-14:10	<b>Andy Benniston</b> <i>Newcastle, UK</i>	Sunlight Capture and Storage: Electron and Energy Transfer in Molecular Dyads and Tetrads
14:10-14:30	<b>Oliver Wenger</b> <i>Göttingen, Germany</i>	Barrier Heights and Widths in Electron Tunneling
14:30-14:50	<b>Dario Bassani</b> <i>Bordeaux, France</i>	Supramolecular Control of Excited-State Interactions for Solar Energy Conversion
14:50-15:10	<b>Winfried Leibl</b> <i>Saclay, France</i>	Molecular Complexes for Artificial Photosynthesis. Spectroscopic Studies of Light-Induced Charge Separation and Electron Transfer
15:10-15:30	<b>Electron transfer: General discussion</b>	<b>Electron transfer: General discussion</b>
15:30-16:00	<i>Coffee break</i>	
<i>Semiconductor-based solar materials</i> <i>Chair: Chris Pickett</i>		
16:00-16:20	<b>Bruce Brunshwig</b> <i>Caltech, USA</i>	Passivation of Silicon Surfaces for Solar Energy Conversion
16:20-16:40	<b>Shannon Boettcher</b> <i>Univ. of Oregon, USA</i>	Structured Inorganic Semiconductors for Solar Energy Conversion and Storage
16:40-17:00	<b>Kyoung-Shin Choi</b> <i>Purdue Univ., USA</i>	Construction of semiconductor electrodes with optimum compositions and morphologies for use in solar water splitting
17:00-17:20	<b>Markéta Zúkalová</b> <i>Prague, Czech Rep.</i>	Electrochemical and Photoelectrochemical Behavior of Nanocrystalline TiO <sub>2</sub> (Anatase) with Exposed (001) Facets
17:20-17:40	<b>Elizabeth Gibson</b> <i>Nottingham, UK</i>	<i>p</i> -Type Photocathodes for Solar Energy Conversion
17:40-18:00	<b>Stephen Maldonado</b> <i>Ann Arbor, USA</i>	Aqueous Dye-Sensitized Hole Injection into <i>p</i> -Type Phosphides From Organic Chromophores: An Alternative Design for Photoelectrochemical Solar Energy Conversion/Storage
18:00-18:20	<b>Ladislav Kavan</b> <i>Prague, Czech Rep.</i>	Optically Transparent Cathode for Dye Sensitized Solar Cells Based on Graphene Nanoplatelets

Optional "working dinner" in a local pizzeria about collaboration possibilities.

Wednesday, 25 May, morning

<i>Semiconductor-based solar materials</i> <i>Chair: Neil Robertson</i>		
08:40-09:00	<b>James Durrant</b> <i>London, UK</i>	Charge Photogeneration in Nanostructured Photoelectrodes for Water Oxidation
09:00-09:20	<b>Peidong Yang</b> <i>Berkeley, USA</i>	Semiconductor Nanowires for Solar Fuel Generation
09:20-09:40	<b>Yogesh Surendranath</b> <i>MIT, USA</i>	Formation and Oxygen Evolution Kinetics of a Cobalt-Based Thin-Film Electrocatalyst
09:40-10:00	<b>Petr Krtil</b> <i>Prague, Czech Rep.</i>	Selectivity of the (electro)catalytic water splitting
10:00-10:20	<b>Solar materials: General discussion</b>	
10:20-10:50	<i>Coffee break</i>	
<i>Molecular solar materials</i> <i>Chair: Bill Rutherford</i>		
10:50-11:10	<b>Jay Winkler</b> <i>Caltech, USA</i>	Mechanisms of Hydrogen Formation
11:10-11:30	<b>Chris Pickett</b> <i>Norwich, UK</i>	Electrochemical and Photoelectrochemical Reduction of Protons and Small Molecules Catalysed by Transition Metal Centres
11:30-11:50	<b>Chris Chang</b> <i>Berkeley, USA</i>	Molecular Catalysts for Generating Hydrogen from Water
11:50-12:10	<b>Han Vos</b> <i>Dublin, Ireland</i>	Design and Optimisation of Dinuclear Photocatalysts For Hydrogen Production from Water
12:10-12:30	<b>Christiana Mitsopoulou</b> <i>Athens, Greece</i>	New Mixed Bimetallic Diimine-Dithiolate Chromophores Used for Solar Hydrogen Production
12:30-12:50	<b>Jeffrey Long</b> <i>Berkeley, USA</i>	Hydrogen Storage in Metal-Organic Frameworks
12:50-13:50	<i>Buffet Lunch</i>	

**Wednesday, 25 May, afternoon**

<i><b>Molecular solar materials</b></i> <i><b>Chair: Rich Eisenberg</b></i>		
13:50-14:10	<b>Ally Aukauloo</b> <i>Paris, France</i>	Steps Towards Water Splitting?
14:10-14:40	<b>Franti Hartl</b> <b>Sofia Derossi</b> <i>Reading, UK</i>	Supramolecular Photocatalysis: New Hydrogen-Evolving Systems Based on Fe-Only Hydrogenase
14:40-15:00	<b>Charles McCrory</b> <i>Caltech, USA</i>	Evaluating Electrocatalytic Activity for Hydrogen Evolving Cobalt and Nickel Complexes in Solution
15:00-15:20	<b>Robin Perutz</b> <i>York, UK</i>	Towards CO <sub>2</sub> Reduction with Visible Light
15:20-15:50	<i><b>Coffee break</b></i>	
<i><b>Molecular solar materials</b></i> <i><b>Chair: Tomas Torres</b></i>		
15:50-16:20	<b>John Kely</b> <b>Annemarie O'Toole</b> <i>Dublin, Ireland</i>	Fixation, Storage and Activation of CO <sub>2</sub> Using Iminodiacetic Acid-Based Coordination Complexes
16:20-16:40	<b>Bill Rutherford</b> <i>Saclay, France</i>	Artificial Photosynthesis: What Can Be Learnt from the Biological Kind?
16:40-17:00	<b>Sebastiano Campagna</b> <i>Messina, Italy</i>	Photoinduced Water Oxidation Using Dendritic Ru(II) Complexes as Photosensitizers and Polyoxometalated Species as Catalysts
17:00-17:20	<b>David Britt</b> <i>Davis, USA</i>	An EPR Picture of Cobalt and Manganese Water Oxidation Catalysts
17:20-17:40	<b>Molecular solar materials: General discussion</b>	
<b>19:15</b>	<b>Conference Dinner</b>	

**Thursday, 26 May**

<i>Sensitizers and dye nanostructures</i> <i>Chair: Robin Perutz</i>		
09:00-09:20	<b>Neil Robertson</b> <i>Edinburgh, UK</i>	Sensitiser Design for Nanocrystalline Metal Oxides
09:20-09:40	<b>Maria Abrahamsson</b> <i>Chalmers U., Sweden</i>	Influence of Ligand Structures on Interfacial Electron Transfer Dynamics
09:40-10:00	<b>Majed Chergui</b> <i>Lausanne, Switzerland</i>	Structural Dynamics of Dye Sensitizers
10:00-10:20	<b>Pavel Chábera</b> <i>Lund, Sweden</i>	Sum Frequency Generation and Ultrafast Spectroscopy of CN-Labeled Zn-Porphyrin/TiO <sub>2</sub> Electrodes for Dye Sensitized Solar Cells Reveal Binding Geometry
10:20-10:40	<b>Fabrice Odobel</b> <i>Nantes Univ., France</i>	New concepts for the development of dye-sensitized solar cells
10:40-11:10	<i>Coffee Break</i>	
<i>Sensitizers and dye nanostructures</i> <i>Chair: Bruce Brunshwig</i>		
11:10-11:30	<b>Dirk Guldi</b> <i>Erlangen, Germany</i>	Towards Long-Lived Radical Ion Pairs in Carbon Nanostructures - Empty Fullerenes versus Endohedral Metallofullerenes
11:30-11:50	<b>Tomas Torres</b> <i>Madrid, Spain</i>	On the Significance of Phthalocyanines in Solar Cells
11:50-12:10	<b>Frank Würthner</b> <i>Würzburg, Germany</i>	Self-Assembled Dye Nanosystems for Solar Energy Conversion
12:10-12:45	<b>Sensitizers and dye nanostructures: General discussion</b>	
	<b>Solar fuels: Final remarks and discussion (Harry Gray)</b>	
12:45	<b>Closing</b>	

**Thursday afternoon:**

Discussions with JH Institute scientists and lab visits can be arranged individually.

**POSTERS (to be displayed throughout the conference and discussed during the breaks):**

**Christopher Windle**, *York, UK*

Supramolecular Photocatalysts for CO<sub>2</sub> Reduction

**Megumi Kayanuma**, *Strasbourg, France*

Spectroscopy and photophysics of Re(I) complexes : Theoretical Study

**Eugenia Kotsouri**, *Athens, Greece*

Bridged Bimetallic Complexes of Re-Pt and Pt-Pt: Synthesis, Characterization and their Application in Hydrogen Production

**Annemarie O'Toole**, *Dublin, Ireland*

Fixation, Storage and Activation of CO<sub>2</sub> Using Iminodiacetic Acid-Based Coordination Complexes

**Olga Trukhina**, *Madrid, Spain*

Phthalocyanine-fullerene conjugates

**Fausto Puntoriero**, *Messina, Italy*

Photophysical Properties of Ru(II) and Os(II) Molecular Dyads for Charge Separation