

Challenges in Chemical Renewable Energy

ISACS17



8-11 September 2015
Rio de Janeiro, Brazil

Tuesday 8 September

12:00	Registration (Tea and coffee – Foyer)
14:30	Welcome and Introductions
	Session 1: Photovoltaics Session Chair: Ernesto Gonzalez
14:45	Charge carrier dynamics for solar energy conversion <u>James Durrant</u> <i>Imperial College London, UK</i>
15:30	Multiple Exciton Generation in Lead Selenide Nanorod Solar Cells with External Quantum Efficiencies Exceeding 120% <u>Nathaniel Davis</u> , Marcus Böhm, Maxim Tabachnyk, Florencia Wisnivesky-Rocca-Rivarolab, Tom Jellicoe, Caterina Ducati, Bruno Ehrler, Neil Greenham <i>University of Cambridge, UK</i>
15:55	Tea break
	Session 1 continued: Photovoltaics Session Chair: James Durrant
16:35	The effect of annealing on the electronic structure, morphology and charge transport in polymer:fullerene blends for photovoltaics <u>Maria Luiza Rocco</u> , Yunier Garcia-Basabe, Cleber Marchiori, Carlos de Moura, Alexandre Rocha, Lucimara Roman <i>Federal University of Rio de Janeiro, Brazil</i>
17:00	Photocromic Torsional Switches (PTS) for Organic Electronics <u>Giuseppe Sforazzini</u> , Alexis Claveau, Jan Maciejewski <i>École Polytechnique Fédérale de Lausanne (EPFL), Switzerland</i>
17:25	Singlet Fission for Perovskite Solar Cells <u>Luis Pazos</u> , Bruno Ehrler, Richard Friend <i>University of Cambridge, UK</i>
17:50	Welcome Reception
19:00	Close (Free evening)

Wednesday 9 September

08:00	Registration
	Session 2: Biofuels Session Chair: Elba P. S. Bon
09:00	Main challenges in the production of Biofuels and Bio-based products in Brazil <u>Eduardo Falabella</u> <i>Federal University of Rio de Janeiro and PETROBRAS, Brazil</i>
09:45	Low-cost ionic liquids for lignocellulose deconstruction Jason Hallett, <u>Agnieszka Brandt</u> <i>Imperial College London, UK</i>
10:10	Design of a one ton a day waste to liquid plant <u>Xinying Liu</u> , Jaco van der Walt, Diane Hildebrandt

	<i>University of South Africa, South Africa</i>
10:35	Coffee Break
	Session 2 continued: Biofuels Session Chair: Keith Waldron
11:15	Waste to energy - Catalysing the sustainable production of advanced bio-fuels <u>Karen Wilson</u> <i>Aston University, UK</i>
12:00	Deconstruction of sugarcane bagasse with ionic liquids in continuous process <u>Ayla Sant'Ana da Silva</u> , Ricardo Sposina S. Teixeira, Seung-Hwan Lee, Elba P.S Bon <i>Biocatalysis Laboratory, Catalys Division, National Institute of Technology, Brazil</i>
12:25	Aviation biofuel from biomass – catalytic conversion of citronellal to cycloalkanes <u>Marco Fraga</u> , Simone Canhaci, Luiz Borges <i>Instituto Nacional de Tecnologia, Brazil</i>
12:50	Lunch (Bossa Café 3rd floor)
	Session 2 continued: Biofuels Session Chair: Claudio Mota
14:00	Conversion of Lignocellulose to Biofuels and Chemicals: Maximising the value from agri-food chain biomass <u>Keith Waldron</u> <i>Institute of Food Research, UK</i>
14:45	Metabolic modification of <i>Yarrowia lipolytica</i> IMUFRJ 50682 culture for enhanced lipid production Subhasish Das, Maria Alice Zarur Coelho, Priscilla Amaral, Jayeeta Sil <i>Federal University of Rio de Janeiro, Brazil</i>
15:10	Nanoengineered solid acid/base catalysts for sustainable biodiesel production <u>Adam F. Lee</u> , Karen Wilson <i>Aston University, UK</i>
15:25	Flash Poster Session (by invitation only)
15:55	Coffee Break and Poster Session
	Session 3: Solar Fuels and Molecular Catalysis Session Chair: Erwin Reisner
17:30	The Artificial Leaf: From Hydrogen to Biomass to Liquid Fuels <u>Dan Nocera</u> <i>Harvard University, USA</i>
18:15	Molecular Solar Thermal Systems: Concepts, Solar Spectrum Matching and Catalysts for On-Demand Energy Extraction <u>Anna Roffey</u> , Karl Börjesson, Anders Lennartson, Victor Gray, Maria Quant, Ambra Dreos, Angelica Lundin, Kasper Moth-Poulsen <i>Chalmers University of Technology, Sweden</i>
18:40	Close (Free evening)

Thursday 10 September

	Session 3 continued: Solar Fuels and Molecular Catalysis Session Chair: Marc Fontecave
09.00	Re-wiring Photosynthesis for Efficient Solar Water Splitting <u>Erwin Reisner</u> <i>University of Cambridge, UK</i>
09:45	Plasmonic photocatalysis: role of electronic structure and interfacial morphology of Au/TiO₂ in the H₂ production and in the oxidation of formic

	<p>acid <u>Alberto Naldoni</u>, Francesca Riboni, Marco Altomare, Marco Malvestuto, Giacomo Ulisse, Aldo Di Carlo, Igor Pis, Silvia Nappini, Marcello Marelli, Rinaldo Psaro, Elena Selli, Vladimiro Dal Santo <i>CNR-Istituto di Scienze e Tecnologie Molecolari, Italy</i></p>
10:10	Coffee Break (Foyer area)
	<p>Session 3 continued: Solar Fuels and Molecular Catalysis Session Chair: Karen Wilson</p>
11:00	<p>New homogeneous and heterogeneous catalysts for (photo)electro-reduction of protons and carbon dioxide <u>Marc Fontecave</u> <i>Collège de France, France</i></p>
11:45	<p>Development of high performance hematite photoanode: lessons learned from the colloidal nanocrystal deposition (CND) process <u>Edson Leite</u>, Ricardo Gonçalves <i>Federal University of São Carlos, Brazil</i></p>
12:10	<p>Solar-driven Water Oxidation at Zero Bias with the aid of an Electron-Coupled-Proton Buffer <u>Leanne Bloor</u>, Renata Solarska, Pawel Kulesza, Mark Symes, Leroy Cronin <i>University of Glasgow, UK</i></p>
12:35	Lunch (Bossa Café 3rd floor)
	<p>Session 4: Battery technology/energy storage Session Chair: Hubert Girault</p>
14:00	<p>Vanadium and Chromium Molecular Cluster Batteries (MCBs): Li- /Na-storage and kinetic studies by electrochemical analysis <u>Julia Rinck</u> <i>Karlsruhe Institute of Technology, Germany</i></p>
14:25	<p>Electronic structure properties of nanohybrid supercapacitive materials comprising polyoxometalate Keggin-like structures deposited on graphene: A DFT study <u>Jesús Muñoz</u>, Ana Karina Cuentas-Gallegos, Miguel Robles, Maximiliano Valdez <i>Universidad Nacional Autónoma de México, Mexico</i></p>
14:45	Flash Poster Session (by invitation only)
15:10	Coffee Break and Poster Session (Foyer area)
	<p>Session 4 continued: Battery technology/energy storage Session Chair: Roberto Torresi</p>
16:20	<p>Redox flow batteries, Hydrogen production and photo-ionic cells <u>Hubert Girault</u> <i>École Polytechnique Fédérale de Lausanne, Switzerland</i></p>
17:05	<p>Controllable latent heat store charging rate by an innovative utilisation of expanded metal mesh <u>Ahmad Mustaffar</u>, David Reay, Adam Harvey <i>Newcastle University, UK</i></p>
17:30	<p>Effect of reducing the halide content of lithium amide halides on structure and hydrogen storage reactions <u>Rosalind Davies</u>, Paul Anderson <i>University of Birmingham, UK</i></p>
17:55	Close (Free evening)

Friday 11 September

	Session 5: Fuel cells Session Chair: Roberto Torresi
09:00	High temperature Direct Ethanol Proton Exchange Membrane Fuel Cells <u>Ernesto Gonzalez</u> <i>University of São Paulo, Brazil</i>
09:45	Determination of Transport Properties in Fuel Cell Porous Media: Experimentation and Simulations Sushanta Mitra, Lalit Pant, Marc Secanell <i>York University, Canada</i>
10:10	Electrocatalytic Oxygen Evolution For Fuel Cell Layers using New Ruthenium and Iridium Oxides Prepared by Hydrothermal Synthesis <u>Richard Walton</u> <i>University of Warwick, UK</i>
10:35	Coffee Break
	PANEL DISCUSSION Session Chair: Jennifer Newton, <i>Chemistry World</i>
11:05	Panel discussion
12:05	Closing Remarks

The Underline denotes the presenting author to whom the affiliation applies