

Monday, 13 May 2013

Opening

14:00-14:15 Prof. Capasso; **Introduction to the Kepler Workshop**

14:15-14:30 Prof. Hahn; **Opening of the Kepler Workshop**

Materials processing and characterization techniques

14:30-16:10 Chair: J. Rupp

14:30-15:05 Invited lecture: David Muñoz-Rojas (Cambridge, UK)

“Atmospheric Atomic Layer Deposition: fast and scalable fabrication of high quality energy materials”

15:05-15:40 Invited lecture: Helena Téllez (Imperial College London, UK)

“Low Energy Ion Scattering and SIMS: Application to advanced materials for energy conversion and storage”

15:40-16:10 Discussion

Nano-ionics and Devices based on Functional Nanomaterials I

16:10-17:50 Chair: J. Rupp

16:10-16:45 Invited lecture: Albert Tarancón (Catalonia Institute for Energy Research (IREC), Spain) **“Nanoionics, nanophonics and integration of functional nanomaterials for micropower generation”**

16:45-17:20 Invited lecture: Carsten Korte (Forschungszentrum Jülich GmbH Institut für Energie- und Klimaforschung (IEK). Jülich, Germany)

“Fast ionic conduction and diffusion along interfaces - significant problem or new perspective for the application of functional ceramics”

17:20-17:50 Discussion

Tuesday 14 May 2013

Nano-ionics and Devices based on Functional Nanomaterials II

9:00-10:40 Chairs: M. Burriel and A. Tarancón

9:00-9:35 Invited lecture: Daniele Pergolesi (Paul Scherrer Institute, Villigen, Switzerland)

“Probing the strain by multi-beam optical stress sensor in thin film pulsed laser deposition”

9:35-10:10 Invited lecture: Michel Renz (ITQ, Valencia, Spain)

“Well defined materials as Taylor-made catalysts in chemical reactions for the production of organic energy carrier”

10:10-10:40 Invited lecture: Montse Casas-Cabanas (CIC energigune, Spain)

“Crystal chemistry of inorganic materials for battery applications”

Nano-materials for Solid Oxide Fuel Cell (SOFC) cathodes

11:10-12:50 Chairs: M. Burriel and A. Tarancón

11:10-11:45 Invited lecture: Markus Kubicek (TU Vienna, Austria)

“Lanthanum Strontium Cobaltite as model system to study intermediate temperature SOFC cathodes”

11:45-12:20 Invited lecture: Jan Hayd (Karlsruhe Institute of Technology (KIT), Germany)

Nanoscaled $\text{La}_{0.6}\text{Sr}_{0.4}\text{CoO}_{3-d}$ thin-films as high performance SOFC cathodes for reduced operating temperatures”

12:20-12:50 Discussion

Tuesday 14 May 2013

Nano-materials for Solid Oxide Fuel Cell (SOFCs)

14:00-15:40 Chairs: C. Solís and M. Renz

14:00-14:35 Invited lecture: Giuliano Gregori (Max Planck, Stuttgart, Germany)

“Boundary effects on the functional properties of nanocrystalline SrTiO_3 ”

14:35-15:10 Invited lecture: Mark Tham (University of St Andrews, Scotland, UK)

“Germanium Oxide Phosphate, a Novel Interstitial Oxide Ion Conductor for IT-SOFC”

15:10-15:40 Invited lecture: Anna Magrasó Sola (University of Oslo, Oslo, Norway)

“Lanthanum tungstate: a mixed proton conducting oxide with a fluorite-related structure”

Ceramic membranes for green chemical production and clean power generation

16:10-17:50 Chairs: C. Solís and M. Renz

16:10-16:45 Invited lecture: María Balaguer (ITQ, Valencia, Spain)

“Oxygen separation membranes based on fast ionic conductors: principles and applications”

16:45-17:20 Invited lecture: J. M. Serra (ITQ, Valencia, Spain)

“New trends in hydrogen separation at high temperatures through mixed conducting membranes”

17:20-17:50 Invited lecture: J. Eiberger (Forschungszentrum Jülich GmbH, Institut für Energie- und Klimaforschung, Germany)

“Testing of microporous membranes in the flue gas of a post-combustion coal fired power plant”

Wednesday 15 May 2013

Photonic Crystals & Optics, Optical Nanomaterials and Solar Fuels I

14:00-15:40 Chair: E. Redel

14:00-14:35 Invited lecture: Hikmet Sezen (KIT, Karlsruhe, Germany)

“Dynamic XPS for Photoinduced Voltage Changes on Semiconductor Materials”

14:35-15:10 Invited lecture: Peter Thissen (KIT, Karlsruhe, Germany)

“From one-way chemistry to surface structuring: The equilibrium of methanol induced nanopatterning on Si”

15:10-15:40 Invited lecture: Stefan Walheim (KIT, Karlsruhe, Germany)

“Nano Phase Separation in Polymer Blend Films - Optical Properties and Pattern-Induced Structure Formation”

Photonic Crystals & Optics, Optical Nanomaterials and Solar Fuels II

16:10-17:50 Chair: E. Redel

16:10-16:45 Invited lecture: Wolfram Pernice (KIT, Karlsruhe, Germany)

“Harnessing light for mechanical actuation in nanophotonic circuits”

16:45-17:20 Invited lecture: Christof Wöll (KIT, Karlsruhe, Germany)

“From nanoparticles to single crystals: New insights into solar fuel synthesis by novel approaches in IR spectroscopy”

17:20-17:50 Discussion

18:00 **END**