

Program GSS Summer School 2016

Tuesday, May 17

In Situ and Operando characterization of liquid-solid interfaces

Lectures in the new ZEMOS building at the Ruhr-University Bochum

08:00 – 08:30 Registration

Chair: Beatriz Roldan Cuenya, RUB

08:45 – 09:00 Prof. Beatriz Roldan Cuenya, Ruhr-University Bochum, GER
Opening remarks

09:00 – 10:00 Prof. Ib Chorkendorff, Technical University of Denmark, DK
Electrocatalysis for Energy Conversion

10:00 – 10:30 Coffee Break

10:30 – 11:30 Prof. Niels De Jonge, Leibniz Institute for New Materials, GER
Electron microscopy of cells, membrane proteins, and nano materials in liquid

11:30 – 12:30 Prof. Nenad Markovic, Argonne National Laboratory, USA
Interfacing Electrochemistry

12:30 – 13:45 Lunch

Chair: Beatriz Roldan Cuenya, RUB

13:45 – 14:45 Dr. Hendrik Bluhm, Lawrence Berkeley National Laboratory, USA
Liquid/solid interfaces investigated by X-ray photoelectron spectroscopy

14:45 – 15:45 Dr. Daniel Friebe, SLAC National Accelerator Laboratory, USA
In situ and operando x-ray and electron spectroscopy in electrocatalysis

15:45 – 16:15 Coffee Break

16:15 – 17:15 Dr. Vojislav Stamenkovic, Argonne National Laboratory, USA
Tailored Electrochemical Interfaces

17:15 – 18:00 Prof. Beatriz Roldan Cuenya, Ruhr-University Bochum, GER
In situ and Operando characterization of model nanostructured electrocatalysts with tunable activity and selectivity

Wednesday, May 18

Nanostructured Electrocatalysts - from fundamental understanding to solar fuels

Lectures in the new ZEMOS building at the Ruhr-University Bochum

Chair: Wolfgang Schuhmann, RUB

- 08:30 – 09:30 Prof. Marc Koper, Leiden University, NL
Proton-coupled electron transfer in the electrocatalysis of carbon dioxide reduction
- 09:30 – 10:30 Prof. Boon Siang Yeo, National University of Singapore, SG
Developing and understanding Cu-based catalysts for the selective electroreduction of carbon dioxide to C2 and C3 products
- 10:30 – 11:00 Coffee Break**
- 11:00 – 12:00 Prof. Andrew Peterson, Brown University, USA
Understanding electrocatalytic reactions from an atomistic viewpoint
- 12:00 – 12:45 Jun. Prof. Kristina Tschulik, Ruhr-University Bochum, GER
Nano-Electrochemistry - from Ensemble to Single Particle Studies
- 12:45 – 14:00 Lunch**
- Chair: Kristina Tschulik, RUB**
- 14:00 – 15:00 Prof. Jaeyoung Lee, Gwangju Institute of Science and Technology, KR
Electrode Build-Up of Metal-Oxidized Composites toward Achievable Electrochemical Conversion Process of CO₂
- 15:00 – 16:00 Prof. Juan Feliu Martinez, University of Alicante, ES
Pt(111)/water solution interfaces in absence of anion adsorption
- 16:00 – 16:30 Coffee Break**
- 16:30 – 17:30 Prof. Phil N. Bartlett, University of Southampton, UK
Electrochemistry in supercritical solution
- 17:30 – 18:15 Prof. Wolfgang Schuhmann, Ruhr-University Bochum, GER
Electrocatalysis and bioelectrocatalysis - distinction without a difference

Thursday, May 19

Lectures in Conference Center of the Ruhr-University Bochum

Theoretical Aspects of Solvation Thermodynamics

Chair: Matthias Heyden, MPI coal research

- 08:45 – 09:25 Dr. Matthias Heyden, Max Planck institute for coal research, GER
Solvent contributions to the free energy
- 09:25 – 10:35 Prof. Dor Ben-Amotz, Purdue University, USA
Water-Mediated Hydrophobic Interactions
- 11:00 – 11:30 **Opening ceremony of new ZEMOS building for Solvation Science**
- 11:30 – 13:30 **Lunch**
- 13:30 – 14:25 Dr. Richard Henchman, The University of Manchester, UK
Dissecting Solution Structure to Determine Solution Entropy
- 14:25 – 14:55 **Coffee Break**

Experimental Techniques for Studying Solvent Effects on Optical Activity.

Chair: Christian Merten, RUB

- 14:55 – 15:35 Dr. Christian Merten, Ruhr-University Bochum, GER
Solvent Effects on Vibrational Optical Activity
- 15:35 – 16:30 Prof. Patrick Vaccaro, Yale University, USA
Intrinsic Optical Activity and the Long Road to Solvation
- 16:30 – 17:25 PD Dr. Melanie Schnell, Max Planck Institute for the Structure and
Dynamics of Matter, GER
Chirality and (micro)solvation studied by broadband rotational spectroscopy
- 18:00 Barbecue in Beckmanns Hof at Ruhr-University

Friday, May 20

*Advanced Laboratory Modules at RESOLV's participating institutes
(whole day)*