

## Wednesday, April 09<sup>th</sup> : **Theory**

---

- 09:00 **Welcome**
- 09:30 **Voltage, Current, and Time**  
Mathematical and physicochemical basics of EIS
- 10:30 *Coffee Break*
- 11:00 **The Connection Between Structure, Processes, and Impedance of Electrochemical Objects**
- The Contributions of Electrochemical Processes I:**  
Discrete and Distributive Impedance Models
- 12:30 *Lunch*
- 14:00 **The Contributions of Electrochemical Processes II:**  
Models for Processes with Mass Transport
- 14:30 **Theoretical Aspects for Testing Impedance Data**  
Basics of the Kramers-Kronig- and the Z-Hit algorithms
- 15:00 **Alternative Electrochemical Testing Methods**  
Relaxation Voltammetry RV  
High-Current-Interrupt method HCI
- 15:30 *Coffee Break*
- 16:00 **Electro technical Aspects of the Impedance Spectroscopy**  
Background Information from the Technical Point of View
- 18:30 *Dinner*

## Thursday, April 10<sup>th</sup> : **Practice**

---

### **Practice Stations** (rotating through the stations in groups)

- Station 1: **Current Interrupt Techniques & RV** (Dr. Franz Richter)
- Station 2: **Measurement On a Simulated Fuel Cell** (Dr. Norbert Wagner)
- Station 3: **Analysis Of EIS Data (SIM, ZMan)** (Prof. Dr. Rüdiger Kaus)
- Station 4: **Remote Control, Data Acquisition, SCRIPT** (Dr. Burkhard Röseler)
- Station 5: **Artifacts** (Dr. Werner Strunz)
- Station 6: **CIMPS Measurements On a Graetzel Cell** (Carl-Albrecht Schiller)
- Station 7: **Coating & Laminate Test** (Dr. Jochen Hollaender)
- 

- 09:00 **Organizing groups**
- 09:05 **Changing stations**
- 09:50 **Changing stations**
- 10:35 *Coffee Break*
- 11:00 **Changing stations**
- 11:45 **Changing stations**
- 12:30 *Lunch*
- 14:00 **Changing stations**
- 14:45 **Changing stations**
- 15:30 *Coffee Break*
- 16:00 **Changing stations**
- 19:00 **Chamber Concert**
- 20:00 *Dinner*
- 21:30 *Hearts of Gold*  
**Oldies & Goodies - unplugged**

## Friday, March 11<sup>th</sup> : Lectures

---

- 09:00 ???  
???
- 09:30 **A proton pump concept - investigation of proton transport and electrode kinetics in High Temperature-PEMFC**  
Dr. Andreas Huth, Volkswagen AG, Wolfsburg, Germany
- 10:00 **Impedance Measurement On Porous Gas-Diffusion Electrodes During Oxygen Reduction Reaction In Alkaline Medium**  
Dr. Norbert Wagner, DLR Stuttgart, Germany
- 10:30 *Coffee Break*
- 11:00 **Investigation Of the Electron Transport In Nanoporous ZnO Electrodes Using Frequency-Resolved Photoelectrochemical Methods**  
Dr. Torsten Oekermann, University of Hannover, Germany
- 11:30 **Canned Stress**  
Dr. Jochen Hollaender, FHIVV Freising, Germany
- 12:00 *Lunch*
- 13:30 **Individual discussions**
- 15:00 *Coffee Break*
- 15:30 **End**

# Kronach Impedance Days 2008

**Preliminary Program**

**April, 09<sup>th</sup> - 11<sup>th</sup>, 2008**

### Management

Zahner-elektrik GmbH & Co. KG  
Thüringer Str. 12 - D-96317 Kronach  
Tel: +49-(0)9261-962119-0  
Fax: +49-(0)9261-962119-99  
Internet: [www.zahner.de](http://www.zahner.de)  
email : [hjs@zahner.de](mailto:hjs@zahner.de)

### Seminar Location

Bildungszentrum Kloster Banz  
D-96231 Bad Staffelstein, Germany  
Tel.: 09573-337-0  
Fax: 09573-337-33  
email: [banz@hss.de](mailto:banz@hss.de)