

Kronach Impedance Days 2009

Preliminary Program

May 27th – 29th, 2009

Management

Zahner-~~e~~lektrik 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
email : 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

Wednesday, May 27th : **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 **Photo-Electrochemical Techniques:**
Dynamic and Spectral Measurements on DSSC, OSC, OLED,
and Electrochromic Devices

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, May 28th : **Practical Courses**

Practical Courses (rotating through the courses in groups)

- Course 1: **EIS-Measurements and Data Processing Applied on a Fuel Cell Model** (Dr. Norbert Wagner)
- Course 2: **From Measurements to Physical Parameters - Interpretation and Modelling of Electrochemical Impedance Spectra on the Example of a Battery Model** (Prof. Dr. Rüdiger Kaus)
- Course 3: **Coating & Laminate Testing by Means of Combined AC & DC Methods** (Dr. Jochen Hollaender)
- Course 4: **Understanding Alternative Solar Cell Concepts – The Application of Intensity Modulated Photo Spectroscopy in Combination with EIS** (Carl-Albrecht Schiller)
- Course 5: **Appearance and Reality in Impedance Spectroscopy - Detection and Prevention of Artefacts in Impedance Measurements** (Dr. Werner Strunz)
- Course 6: **Combination and Automation of Electrochemical Techniques and Measurement Data Analysis with Script** (Dr. Burkhard Röseler)
- Course 7: **Extending the Scope of Electrochemical Experiments - Remote Control and the Implementation of Virtual Instruments** (Dr. Michael Multerer)
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09:00 **Organizing groups**

09:15 **Changing course**

10:00 **Changing course**

10:45 *Coffee Break*

11:05 **Changing course**

11:50 **Changing course**

12:35 *Lunch*

14:15 **Changing course**

15:00 **Changing course**

15:45 *Coffee Break*

16:05 **Changing course**

19:00 **Chamber Concert**

20:00 *Dinner*

21:30 **Live-Music with *Hearts of Gold* : Oldies & Goodies – Unplugged**

Friday, May 29th : Lectures

- 09:00 **Impedance Spectroscopy At Partially Blocked Electrodes**
Prof. Dr. Klaus Jüttner, DECHEMA, Frankfurt
- 09:30 **A Fundamental Milestone In The Development Of Impedance Technique**
Prof. Dr. Rüdiger Kaus, TU Niederrhein, Krefeld
- 10:00 **Theory And Application Of Porous Electrodes In Fuel Cell Characterization**
Dr. Norbert Wagner, DLR, Stuttgart
- 10:30 *Coffee Break*
- 11:00 **Methods To Determine Internal Resistance Of Ultra High Power Lithium Ion Cells For Hybrid Electric Vehicles**
Dr. Hans-Georg Schweiger, Continental, Berlin
- 11:30 **Dye- And Organic Solar Cells At Fraunhofer ISE / FMF**
Dr. Uli Würfel, Materialforschungszentrum Freiburg
- 12:00 *Lunch*
- 13:30 **Individual discussions**
- 15:00 *Coffee Break*
- 15:30 **End**