

## Theory Monday, March 25<sup>th</sup>

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- 09:00 **Welcome**
- 09:30 **Voltage, Current, Time**  
Mathematical and Physicochemical Basics of EIS  
*Dr. C. A. Schiller*
- 10:30 *Coffee Break*
- 11:00 **The Connection Between Structure, Processes, and Impedance of Electrochemical Objects**  
*Dr. C. A. Schiller*
- The Contributions of Electrochemical Processes I:**  
Discrete and Distributive Impedance Models  
*Dr. C. A. Schiller*
- 12:30 *Lunch*
- 14:00 **The Contributions of Electrochemical Processes II:**  
Models for Processes with Mass Transport  
*Dr. W. Strunz*
- 14:30 **Theoretical Aspects for Testing Impedance Data**  
Basics of the Kramers-Kronig- and the Z-Hit Algorithms  
*Dr. W. Strunz*
- 15:00 **Photo-Electrochemical Techniques:**  
Dynamic and Spectral Measurements on DSSC, OSC, OLED, and Electrochromic Devices  
*Dr. M. Multerer*
- 15:30 *Coffee Break*
- 16:00 **Hands on EIS: Step by Step Demonstration**  
From Measurement Setup to Data Fitting, Practical Example on a Supercap  
*M.Eng. E. Schmidt & Dr. J. Odrobina*
- 19:00 *Dinner & Social Evening*

## Practical Courses Tuesday, March 26<sup>th</sup>

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### Practical Courses (rotating through the courses in groups)

- Course 1: **Understanding Alternative Solar Cell Concepts – The Application of Intensity Modulated Photo Spectroscopy in Combination with EIS + fitting**  
*Dr. M. Multerer*
- Course 2: **Artefacts in EIS Measurements of Low Impedance Samples**  
*Dr. C. A. Schiller*
- Course 3: **Combination and Automation of Measurements with Script**  
*Dr. B. Röseler*
- Course 4: **Artefacts in EIS Measurements of High Impedance Samples**  
*Dr. W. Strunz*
- Course 5: **EIS-Measurements and Data Processing Applied on a Fuel Cell Model**  
*Dr. N. Wagner*
- Course 6: **From Measurements to Physical Parameters - Interpretation and Modelling of Electrochemical Impedance Spectra on the Example of a Battery Model**  
*Prof. Dr. R. Kaus & M.Eng. E. Schmidt*
- 09:00 **Organizing Groups**
- 09:20 **First Course**
- 10:10 **Changing Course**
- 11:00 *Coffee Break*
- 11:30 **Changing Course**
- 12:20 *Lunch*
- 13:50 **Changing Course**
- 14:40 **Changing Course**
- 15:30 *Coffee Break*
- 16:00 **Changing Course**
- 19:00 *Dinner*

## Practical Courses Wednesday, March 27<sup>th</sup>

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### Practical Courses (rotating through the courses in groups)

- Course 7: **Photo Current Spectroscopy (CIMPS-pcs) Applied on Monolithic-, Organic-, and Dye Sensitized Solar Cells**  
*Dr. C. A. Schiller*
- Course 8: **Integration of Zahner Equipment into Battery and Fuel Cell Test Stands**  
*Dr. M. Multerer*
- Course 9: **Battery Cycling and Advanced Scripting**  
*Dr. B. Röseler*
- Course 10: **Handling Changing States During EIS Measurements**  
*Dr. W. Strunz*
- Course 11: **Coating & Laminate Testing by Means of Combined AC- & DC- Methods**  
*Dr. J. Hollaender*
- Course 12: **Parallel Measurements on Single Cells of Battery and Fuel Cell Stacks.**  
*Dipl. Ing. S. Fröba*
- 09:00 **First Course**
- 09:50 **Changing Course**
- 10:40 *Coffee Break*
- 11:10 **Changing Course**
- 12:00 **Changing Course**
- 12:50 *Lunch*
- 14:20 **Changing Course**
- 15:10 **Changing Course**
- 16:00 **End**

# Kronach Impedance Days 2019

Preliminary Program

March 25<sup>th</sup> – 27<sup>th</sup>, 2019

#### Management

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#### Seminar Location

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