

# Seminar and Training Course on Broadband Dielectric and Electrochemical Impedance Spectroscopy

March 13-15, 2023

**Novocontrol Technologies**  
**Montabaur, Germany**

## Including

- Basics of Ion and Electron Transport in Solids
- Ion Transport in Nanostructured Materials: Bulk and Interfacial Processes
- Dynamics in Geometrically Confined Systems
- Electrode Polarisation and Electrochemical Double Layer Formation
- Characterisation of Processes in Modern Electrochemical Cells (Batteries, Supercapacitors, Fuel Cells)
- Latest Developments in Instrumentation
- Hands-on Measurements

## Preliminary Schedule

Time	Lecturer	Topic
<b>Tuesday, March 13, 2023</b>		
12.30 – 13.30		Informal lunch and Welcome Coffee
13.30 – 13.45	B. Roling, F. Kremer	Introduction, Organisational Issues
13.45 – 15.45	B. Roling	Basic Introduction to Broadband Dielectric and Impedance Spectroscopy (for participants with little or no experience)
13.45 – 15.45	F. Kremer	Introduction to Broadband Dielectric Spectroscopy (for participants with more experience)
15.45 – 16.15		Coffee Break
16.15 – 18.00		Hands-on Experience and Discussions: Participants perform and evaluate their own experiments, if possible on their own samples.
19:00		Dinner
<b>Wednesday, March 14, 2023</b>		
8.30 – 10.00		Hands-on Experience and Discussions
10.00 – 11.00	F. Kremer	Glassy Dynamics in Low-Molecular Weight and Polymeric Systems
11.00 – 12.30		Hands-on experience and Discussions
12.30 – 13.30		Informal Lunch
13.30 – 14.30	B. Roling	Materials Characterisation: Analysis of Charge Transport and Electrochemical Processes
14:30 – 15.30		Hands-on Experience and Discussions
15.30 – 16.00		Coffee Break
16.00 – 17.00		Hands-on Experience and Discussions
17.00 – 18.00		Open Discussion
19.00		Dinner
<b>Thursday, March 15, 2023</b>		
8.30 – 10.00		Hands-on Experience and Discussions
10.00 – 11.00	D. Wilmer	New Developments in Instrumentation
11.00 – 12.30		Hands-on Experience and Discussions
12.30 – 12.45	B. Roling, F. Kremer	Closing Remarks
12.45		Informal Lunch and Farewell

## Organization

### Travelling to Montabaur

- By air via Frankfurt/Main (FRA) or via Cologne/Bonn (CGN) (85 km away)
- By train to Montabaur ICE (high-speed train) station.
- By car to Novocontrol Technologies (Aubachstr. 1, 56410 Montabaur).

### Accommodation

Attendants will have to book a hotel according to their convenience by themselves. Three lunches, coffee breaks and two dinners are included in the registration fee.

### Venue

The course will take place in the premises of Novocontrol Technologies in Montabaur/Germany. The Montabaur train station is within walking distance (600 m). Various hotels are nearby (800 m to 1300 m). Taxi transfers can be arranged if required.

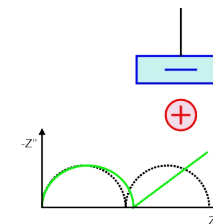
### Fees

1.800,00 € for industrial attendants

850,00 € for academic attendants

### Registration (deadline: February 17, 2023)

Please register using the [registration form](#). We also kindly ask you to fill our [questionnaire for attendees](#) and submit the filled form to the address given.



**novocontrol** Technologies

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