

EIS Workshop

Goal

Aim of the workshop is to give an introduction into electrochemical impedance spectroscopy (EIS):

- Gain fundamental understanding of EIS
- Understand the physical origins of impedance (as opposed to resistance)
- Use electric components to describe electrochemical processes (equivalent circuits)
- Learn good-practice for analysis and presentation of electrochemical impedance spectra
- Raise awareness of the complexity of impedance spectroscopy in electrochemistry and battery research in particular.
- Increase knowledge about the potential and the restrictions of the method

We will spare you as much math as possible for this lecture series and provide you with qualitative knowledge.

Preliminary Schedule

	Time	Session	Contents
17 Apr	09:00 – 12:00	Lecture 1	General Aspects of EIS Electrochemical Basics for EIS Basics of Electronic Circuit Components Impedance spectra of Electrical Circuits
	12:00 – 13:00	Lunch break	
	13:00 – 14:00	Lecture 2	Conductivity Measurements
	14:00 – 16:00	Practice group 1	Hands-on Training EIS on Biologic instruments
	16:00 – 18:00	Practice group 2	Simulating your Experimental Data
18 Apr	09:00 – 12:00	Lecture 3	Electrochemical Circuit Components EIS for Batteries
	12:00 – 13:00	Lunch break	
	13:00 – 14:00	Lecture 4	Introduction to EIS data evaluation
	14:00 – 16:00	Practice group 3	Hands-on Training EIS on Biologic instruments
	16:00 – 18:00	Practice group 4	Simulating your Experimental Data
Day 3	Additional practice groups if needed		

Place

Materialwissenschaftliches Zentrum für Energiesysteme (MZE)

Karlsruher Institut für Technologie (KIT)

Campus Süd

Straße am Forum 7, Geb. 30.48

Workshop Instructor

Dr. Fabian Jeschull, KIT, IAM-EES

Registration

The four practice groups for the hands-on training are planned for max. 5 members each.

These will be preferentially filled with participants travelling to the MZE. If needed, there will be additional practice groups on day 3 for participants from the KIT.

Participants of this EIS workshop can gain 0,5 CP for “Scientific Training” in the GS-EES qualification program.

Register [online](#) until 10 March 2023