EU-CONCERT Electrochemistry School

Preparation and measurements of single crystals

27–29 January 2027 | Ljubljana, Slovenia | Proposed agenda

Location: National Institute of Chemistry, Hajdrihova 19, 1000 Ljubljana, Slovenia

School leaders: Yvonne Grunder and Dušan Strmčnik

Up to 20 students in four groups of five, with four demonstrators and four workstations. Morning lectures on the first two days introduce the afternoon practical work. The third day includes a morning experimental session only.

Day 1 27 January

Single crystal electrodes and experimental preparation

Time	Session
09:30–10:30	**Lecture 1 Introduction to electrochemistry with single crystal electrodes** Model surfaces, crystallographic orientation and the role of surface quality in electrochemical measurements.
10:30–10:45	Coffee break
10:45–12:00	**Lecture 2 Preparing clean surfaces and electrochemical cells** Electrode preparation, annealing and sample transfer; cleanliness, cell components and hanging meniscus and rotating disk electrode (RDE) configurations.
12:00–13:00	Lunch
13:00–17:00	**Practical session Preparation and assembly** Cell preparation and assembly; annealing and sample transfer; hanging meniscus and RDE assembly; initial voltammetric checks of surface quality and cleanliness.

Day 2 28 January

Probing electrochemical interfaces with single crystal electrodes

Time	Session
09:30–10:30	**Lecture 3 What single crystal electrodes reveal about electrocatalysis** Using defined surfaces to investigate surface structure, adsorption and electrochemical reactivity.
10:30–10:45	Coffee break
10:45–12:00	**Lecture 4 Voltammetry and polarization curve measurements** Interpreting voltammetric features and polarization curves; scan rate, mass transport, resistance correction and reproducibility.
12:00–13:00	Lunch
13:00–17:00	**Practical session Voltammetry and polarization curves** Acquire and interpret voltammograms and polarization curves in hanging meniscus and RDE configurations; examine the influence of surface preparation and measurement conditions.

Day 3 29 January

Reproducibility and good experimental practice

Time	Session
09:00–13:00	**Practical session Reproducibility** Repeat electrode preparation and selected measurements, compare group results and discuss troubleshooting and good experimental practice.
13:00-14:00	Lunch and group photo

Participation support for EU-CONCERT members

Category	Daily allowance	Maximum Travel Reinbursements
Trainers	EUR 180	EUR 400
Trainees	EUR 130	EUR 400