Getting the Basics Right: Capacitance, Entropy and Stress of Electrified Solid/Liquid Interfaces

854. WE-Heraeus-Seminar

03 - 06 May 2026

at the Physikzentrum Bad Honnef, Germany

WILHELM UND ELSE
HERAEUS-STIFTUNG

Program

Sunday, 03 May 2026

16:00 - 20:00	Registration	
18:00 – 19:30	*BUFFET SUPPER and informal get-together*	
19:30 – 20:00	Jun Huang, Aliaksandr Bandarenka, Kathleen Schwarz	**Welcoming Note & Video Presentation: "About the Wilhelm and Else Heraeus Foundation"**
20:00 - 20:45	Jörg Weißmüller	**Electrocapillary Coupling – Surface Phenomena and Implications for Materials Behavior**

Program

Monday, 04 May 2026

07:30 - 08:45	*BREAKFAST*	
08:45 – 09:30	Galina Tsirlina	**Thermodynamics of the perfectly polarizable electrodes: complicating and less known issues**
09:30 - 10:00	Michael Eikerling	**Cracking the interface problem: going deep and wide with (almost classical) analytical theory**
10:00 – 10:30	Marcel Risch	**Measurement of Enthalpy and Entropy of the Cobaltite-Water Interface**
10:30 – 10:35	Conference Picture	
10:35 - 11:00	*COFFEE BREAK*	
11:00 - 11:30	Victor Climent	**Thermodynamic Characterization of Electrochemical Interphases on Noble Metal Single-Crystal Electrodes Using Temperature-Dependent and Laser-Induced Techniques**
11:30 - 11:50	Nicci Fröhlich	**The electric double layer structure of bare and ad-atom modified stepped platinum electrodes**
11:50 - 12:10	Jinwen Liu	**Multiscale Modeling of Surface Heterogeneity and Adsorbates effects on Electrochemical Interfaces**
12:10 – 12:30	Sudarshan Vijay	**Quantifying Electrical Double Layer Thermodynamics via 2D Periodic DFT and Machine Learning Interatomic Potentials**
12:30 – 14:00	*LUNCH*	

Program

Monday, 04 May 2026

14:00 - 14:30	Jun Cheng	**AI acceleration of AIMD simulation of electrochemical interfaces**
14:30 - 15:00	Olaf Magnussen	**X-ray scattering studies of the molecular structure of the aqueous electrolyte near platinum electrodes**
15:00 – 15:30	Marko Melander	**Thermodynamics of water-metal interface formation from DFT-MD Simulations**
15:30 – 16:00	*COFFEE BREAK*	
16:00 – 16:30	Manuel Landstorfer	**Thermodynamic modelling of the electrode–electrolyte interface — Double-layer capacitance, solvation number, and validation**
16:30 – 17:00	Tao Wang	**EDL Structure at Potentials Significantly Deviated from the PZC**
17:00 – 18:30	POSTER FLASH	
18:30 – 20:00	*DINNER*	
From 20:00	POSTER SESSION	

Program

Tuesday, 05 May 2026

07:30 - 08:45	*BREAKFAST*	
08:45 - 09:30	Tamas Pajkossy	**How to measure the double layer capacitance of electrocatalytic interfaces?**
09:30 – 10:00	Yitao Long	**Confinement controlled electrochemistry**
10:00 – 10:30	Jahan Dawlaty	**Dissecting the Electrochemical Response of the Double Layer into Spectroscopically Resolvable Molecular Dynamics**
10:30 - 11:00	*COFFEE BREAK*	
11:00 – 11:30	Vanessa J. Bukas	**Entropy-enthalpy compensation in electrocatalytic rates**
11:30 – 11:50	Xinwei Zhu	**Understanding Cation effects in Alkaline Hydrogen Evolution Reaction: An Electrostatic Perspective**
11:50 – 12:10	Alfred Larsson	**Anomalous charging of platinum seen by X-ray spectroscopy**
12:10 – 12:30	Albert Engstfeld	**A Step Towards FAIR Electrochemical Data: A Database of Cyclic Voltammograms for Metal Single-Crystals**
12:30 – 14:00	*LUNCH*	

Program

Tuesday, 05 May 2026

14:00 – 14:30	Guang Feng	**Interfacial Structure, Ion Transport, and Heat Generation in Electrified Solid/Liquid Interfaces**
14:30 – 15:00	Marco Schoenig	**Measuring the entropy of interface formation at Au(111)**
15:00 – 15:30	Nicolas G. Hörmann	**Charging, Chemisorption, and Water Structure at applied potential conditions: Insights from Atomistic Simulations**
15:30 – 16:00	*COFFEE BREAK*	
16:00 - 16:30	Chris-Kriton Skylaris	**Large-scale atomistic simulations of battery materials and interfaces**
16:30 – 17:00	Peter Dunne	**Magnetic Field Effects in the Electrochemical Double Layer**
17:00 – 18:00	Moderator: Aliaksandr Bandarenka	**PANEL DISCUSSION:** **Today's education and supervision in electrochemistry** **Panelists: Galina Tsirlina, Olaf Magnussen, Jörg Weißmüller, Jun Cheng**
18:30	*HERAEUS DINNER & Poster Award Ceremony* *(social event with cold & warm buffet with complimentary drinks)*	

Program

Wednesday, 06 May 2026

07:30 - 08:45	*BREAKFAST*	
08:45 - 09:30	David Raciti	**Probing the Electrified Solid–Liquid Interface with Surface Stress, Spectroscopy, and Mass Spectrometry**
09:30 – 10:00	Jan Rossmeisl	**Electrocatalysis on alloys**
10:00 – 10:30	Matthew Gebbie	**Exploring how ionic correlations impact electric double layer formation and electrocatalytic activity**
10:30 – 11:00	*COFFEE BREAK*	
11:00 – 11:30	Katharina Doblhoff-Dier	**Potential of zero (free) charge: Why we should care**
11:30 – 11:50	Xiao Yu Li	**The Breath of Solid-Liquid Interface during Electrocatalysis**
11:50 – 12:10	Alexander von Rueden	**Electrochemical free energy barriers from first principles**
12:10 – 12:30	Fabiola Dominguez Flores	**From Solvation to Capacitance: How Divalent-Ion Partial Charge Transfer Shapes the Compact Laye**
12:30 – 12:35	Scientific Organizers	**Closing Remarks**
12:35 - 14:00	*LUNCH*	

End of the seminar and departure