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EU-CONCERT WEBINAR SERIES

SEPT. WEBINAR

TIMESCALES, (THERMO)DYNAMICS, AND KINETICS IN ATOMISTIC ELECTROCHEMISTRY

DATE
30 Sept. 2026
Wednesday

TIME
14:00 CEST
(60 min)

SPEAKER
Dr. Marko Melander
University of Jyväskylä

ABSTRACT

Electrochemical interfaces involve processes occurring across a wide range of timescales, from sub-femtosecond electron motion to microsecond double-layer dynamics. Correctly accounting for these timescales is essential for understanding electrode potential fluctuations, reaction kinetics, solvent effects, and atom-scale dynamics, as well as for developing reliable simulation methods.

This presentation will introduce timescales and relaxation, discuss their theoretical treatment through dynamics, thermodynamics, and rate theory, and explore their practical role in computational electrocatalysis, focusing on thermodynamics, kinetics, dynamics, and spectroscopy.

ABOUT THE SPEAKER

Marko M. Melander is a Senior Lecturer and Academy of Finland Research Fellow at the University of Jyväskylä, Finland, and holds an Adjunct Professorship in physical electrochemistry.

He obtained his Doctor of Science from Aalto University in 2015 and conducted postdoctoral research at Denmark Technical University and the University of Jyväskylä. In 2021, he was awarded an Academy of Finland Fellowship and started his independent research group.

His research develops and applies computational and theoretical methods based on quantum mechanics, statistical mechanics, thermodynamics, and rate theory to understand electrochemical systems at the atomic scale.

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Registration closes on 29 September 2026 at 14:00 CEST

The Microsoft Teams access link will be sent by email to all registered participants.

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