

Neutron Scattering and Electrochemistry Workshop

30 Aug - 31 Aug
Oak Ridge National Laboratory, Oak Ridge, Tn

Day 1: August 30, 2023

08:30-09:00 Badging, Spallation Neutron Source (SNS) Bldg, 8600, Lobby Suzanne Reichert

09:00 – 09:10 Introduction/Welcome Luke Heroux Iran Thomas Auditorium

09:10 – 10:50 Seminars I Chair: Luke Heroux Iran Thomas Auditorium

9:10 AM Burcu Gurkan - Case Western Reserve University

[“Significance of Electrode-Electrolyte Interfaces for Energy Storage and Conversion Processes”](#)

9:50 AM Robert Sacci - Oak Ridge National Laboratory

[“Following material synthesis and processing with neutron scattering”](#)

10:30 AM Daniel Murray - Lawrence Berkeley National Laboratory

[“Conformational equilibria underlying electron bifurcation in Thermotoga maritima Fix/EtfABCX”](#)

10:50 – 11:00 Break Lobby

11:00 – 12:00 Seminars II Chair: Hanyu Wang Iran Thomas Auditorium

11:00 AM Yat Li - University of California-Santa Cruz

[“Structural and Compositional Engineered Electrochemical Materials for Energy Storage and Catalysis”](#)

11:40 AM Seunghoon Lee - Oak Ridge National Laboratory

[“In Situ Observation of Dynamic Changes in Structure and Product Selectivity of Cu-catalysts during Electrochemical CO₂ Reduction”](#)

12:00 – 01:00 Working Lunch Lobby

Discussion of “Benchtop to Beamline Measurements” and “Prospective Electrochemistry Measurements for Neutron Proposals”

01:00 - 02:00 Seminars III Chair: Hanyu Wang Iran Thomas Auditorium

1:00 PM Katie Browning - Oak Ridge National Laboratory

[“Using Neutron Reflectometry to Probe Electrode-Electrolyte Interfaces of Si Anodes”](#)

1:40 PM Ivan Popov - The University of Tennessee Oak Ridge Innovation Institute

[“The search for the Grotthuss mechanism.”](#)

2:00 PM Sarah Blair - National Renewable Energy Laboratory

[“Developing an understanding of dynamic SEI formation during electrochemical N₂ reduction via combined, time-resolved in situ neutron reflectometry and X-ray diffraction”](#)

2:40 – 3:00 Break Lobby

Neutron Scattering and Electrochemistry Workshop

03:00 - 04:00 Seminars IV Chair: Luke Heroux Iran Thomas Auditorium

3:00 PM Anne-Frances Miller - University of Kentucky

["Electron Transfer Bifurcation: A Mechanism for Energy Conservation at the level of Electrons."](#)

3:40 PM Dima Bolmatov - University of Tennessee

["Evidence for Long-Term Potentiation in Biological Membranes"](#)

04:00 – 05:00 Break Out Sessions Rms C-156/C-152

Session 1: Chair: Hugh O'Neill Bulk Solution Measurements (motivations and planning)

Session 2: Chair: Jim Browning Interface Structure Measurements (motivations and planning)

5:00-7:00 Dinner - Plenary Talk Chair: Luke Heroux Rm C-156 or Iran Thomas Auditorium

Benjamin Doughty (5:30)

["Ions and Soft Interfaces At and Away From Equilibrium"](#)

Day 2: August 31, 2023

08:55 – 09:00 Welcome Back Luke Heroux

09:00 - 10:00 Seminars V Chair: Hanyu Wang Iran Thomas Auditorium

9:00 AM Xiao Su - University of Illinois Urbana-Champaign

["In-situ Neutron Reflectometry Investigations for Redox-Mediated Electrochemical Separations"](#)

9:40 AM Sudhan Nagarajan - Wayne State University

["Understanding Depth-dependent Cathode Electrolyte Interphase on the Layered Li-ion Cathodes Operated at Extreme Environment"](#)

10:00 - 10:20 Break Lobby

10:20 - 11:20 Seminars VI Chair: Luke Heroux Iran Thomas Auditorium

10:20 AM Michael Ohl - Research Center Juelich

["Polymer/ Lithium Batteries Studied with MD Simulations and Dynamic Neutron Scattering"](#)

10:40 AM Yu Zhu - University of Akron

["Novel Metal Complex Catholytes for Aqueous Redox Flow Batteries"](#)

11:20 – 1:00 Working Lunch Lobby

Breakout Session 1 recap: Hugh O'Neill Bulk Solution Measurements

Breakout Session 2 recap: Jim Browning Interface Structure Measurements

1:00 Close out and Optional Tour of SNS Facilities