

UCSD NANOENGINEERING/CHEMICAL ENGINEERING  
*Virtual* **SEMINAR SERIES**

Wednesday March 30th, 2022  
Seminar Presentation: 11:00am - 12:00pm PDT



*“ Probing buried interfaces in energy storage”*

**Dr. Gabriel Veith, PhD**

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**Abstract:** In this presentation I will describe experiments to probe the electrode-electrolyte interfaces in situ for silicon anodes, high voltage cathodes, and solid electrolytes. Using neutron scattering I will show you that this interfacial layer is highly dynamic. It changes in thickness and composition with cycling and time behaving as if it is breathing. This “breathing” is influenced by electrolyte chemistry and state of charge. Furthermore, I will describe what we are doing to mitigate the failure processes. No prior knowledge of neutron scattering is required to understand this presentation.

**Biosketch:** Gabriel Veith is a Distinguished Staff Scientist within the Chemical Sciences Division at ORNL. His research focuses on the development of new materials and processes related to energy storage/conversion applications as well as fundamental studies of liquid-solid interfaces. Particular areas of focus include solid state batteries, sodium ion battery chemistry, using neutrons to probe reactive interfaces, physical vapor deposition processes to coat vacuum stable materials, and kinetics of interfacial reactions. He has 245 published papers, 13 patents, 8 patents submitted, and two R&D 100 awards. He is also the honorary scientific advisor for the Charlotte-Mecklenburg Police Department (Burglary Division).