



Inorganic Chemistry Seminar Series

Tuesday, October 16, 2018, 12:30 pm

Seaver Science Library, Room 150

SSC Auditorium next to the library

Professor Daniel Shoemaker

Department of Materials Science and Engineering

University of Illinois

In Situ Synthesis and Discovery of Functional Inorganic Materials

Uncovering new physical phenomena and functional materials is often an exercise in navigating nature's collection of stable, or near-stable, crystal structures. We are interested in exploring this space experimentally to make new phases, examine old ones, and understand how known compounds respond to dopants. We are often guided by theory and computation, while our experimental work utilizes a unique in-situ X-ray diffraction platform that allows us to watch a wide variety of synthesis reactions. I will present recent results from our searches for entirely new compounds, including: the frustrated magnet Cu_4O_3 , transparent conducting oxides, and semiconducting sulfides. With windows into how materials form, we can critically evaluate computational predictions and explore novel reactions that tilt chemistry in our favor—usually toward the unknown.

Hosted by Professor Brent Melot

The scientific community is invited

USC Department of Chemistry

chem.usc.edu