



Inorganic Chemistry Seminar Series

Tuesday, October 2, 2018, 12:30 pm

Seaver Science Library, Room 150

SSC Auditorium next to the library

Professor Jeffrey Rinehart

Department of Chemistry and Biochemistry

University of California San Diego

Designing molecular and nanoscale materials for bottom-up control of magnetism

Magnetic applications are ubiquitous in modern technology, yet the available materials are relatively limited in number and tunability. Bottom-up design is therefore appealing as it offers the possibility of atomic-level understanding and customization. Magnetic properties, however, often translate poorly between atomic, molecular, nano, and bulk scales. In this seminar, I will discuss our efforts to design magnetic systems with well-defined, robust magnetic parameters that translate across different size scales. Part one will focus on designing molecules that efficiently transfer the immense single-ion anisotropy of lanthanides into two-center anisotropy such that it can be preserved during the extension to multidimensional materials. The second part will utilize the weak interparticle coupling of colloidally prepared ferrite nanoparticles to explore magnetostructural correlations to design tunneling magnetoresistive materials.

Hosted by Professor Megan Fieser

The scientific community is invited

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