



Inorganic Chemistry Seminar Series

Tuesday, September 11, 2018, 12:30 pm

Seaver Science Library, Room 150

SSC Auditorium next to the library

Professor Aaron Sadow

Department of Chemistry

Iowa State University

Rare Earth and Main Group Organometallic Compounds for Catalytic Hydroboration and Hydrosilylation

Reductive conversions of unsaturated oxygenates typically avoid oxophilic early metal species as catalysts; however, we sought to explore new transformations and new mechanisms potentially accessible with such metal centers as non-traditional organometallic catalysts. New organometallic and pseudo-organometallic ligands for rare earth, early transition metal, and main group metal centers have been studied to access new catalysts, new transformations, and new mechanisms for hydrosilylations and hydroborations.

Related oxophilic compounds catalyze hydroborations of carbonyls such as esters to give boron esters, and the mechanism for these reactions varies between metal centers and carbonyl moieties. Silica-supported zirconium catalysts, soluble magnesium catalysts, and rare earth catalysts each show distinct kinetics, distinguishing the mechanisms, for these hydroboration reactions.

Hosted by Professor Megan Fieser

The scientific community is invited

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