Jordan James Stracke

Graduate Institution: Colorado State University

Graduate Discipline: Inorganic Chemistry

Hometown: St. Cloud, MN

Relevant SC Research: Basic Energy Sciences

Research Interest:

I am interested in a broad range of research areas including catalysis, electrochemistry, photochemistry, and synthesis. By combining knowledge from these disciplines, I aim to solve basic research problems in the field of renewable energy. Currently I am investigating fundamental aspects of water oxidation catalysis while developing methods to more easily distinguish homogeneous from heterogeneous catalysis. Since all catalytic properties derive from the identity of the true catalyst, proper identification of the catalyst is of utmost importance. Understanding how these water oxidation catalysts work at a fundamental level will contribute towards the development of highly efficient artificial photosynthetic devices.

About Me:

My interest in renewable energy and catalysis research derives from my educational background as well as a love for the outdoors. I received my B.A. in chemistry from Luther College in 2008. While attending Luther and under the direction of Professor Chamberlain, I investigated catalysts used to produce bio-based polymers. I am currently working towards my Ph.D. under the supervision of Professor Finke at Colorado State University. My current research involves distinguishing homogeneous and heterogeneous water oxidation catalysis when beginning with discrete polyoxometalates. I am also developing an artificial photosynthetic system in collaboration with Dr. Brian Gregg of the National Renewable Energy Laboratory. When not at work I enjoy hiking and spending time with my wife, children, and dogs. After graduate school I wish to pursue an academic career so I can teach others and continue my energy related research.

important to understand the fundamental mechanistic properties of water oxidation catalysts (WOCs) in order to produce more efficient, cheaper, and longer-lasting catalysts. In pursuit of this goal, many discrete metal complexes have been reported to catalyze water oxidation *homogeneously*. In particular, a recent *Science* paper (Yin et al. *Science* **2010**, 328, 342) reported that the cobalt containing