

# James McKone



**Graduate Institution:** Caltech

**Location:** Pasadena, CA

**Graduate Discipline:** Inorganic/Materials Chemistry

**Hometown:** Mason City, Iowa

## **Research Interests:**

*I am broadly interested in photochemistry and electrochemistry, especially related to the conversion and storage of solar energy. My other interests include solid-state reactions and crystal growth, fundamental electrochemistry and electrocatalysis, and emergent properties at the nano-scale.*

## **About me:**

*I am a PhD candidate co-advised by Nate Lewis and Harry Gray at the California Institute of Technology. I am highly motivated by the idea that fundamental and applied chemistry, physics, and engineering can be used synergistically to solve big problems. My research is focused around making abundant, cheap heterogeneous electrocatalysts for splitting water into hydrogen and oxygen. In particular, I am exploring techniques to couple such catalysts directly to semiconductor devices in order to convert solar energy directly to chemical fuel without the need for intermediate connections (e.g. wires). I expect to complete my PhD work in the Spring/Summer of 2013, and then I hope to move on to post-doctoral research and eventually become a professor at a small college or research university.*

*I have been involved in several teaching opportunities at Caltech, including developing a new undergraduate chemistry lab course and building an after-school program geared toward high school age students from various socioeconomic backgrounds. Both of these are focused around problems related to solar energy and have thus far been both popular and successful.*

*My hobbies include reading (especially nonfiction and current events), playing and listening to music, spending time outdoors, board games, movies, and simple do-it-yourself projects.*



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