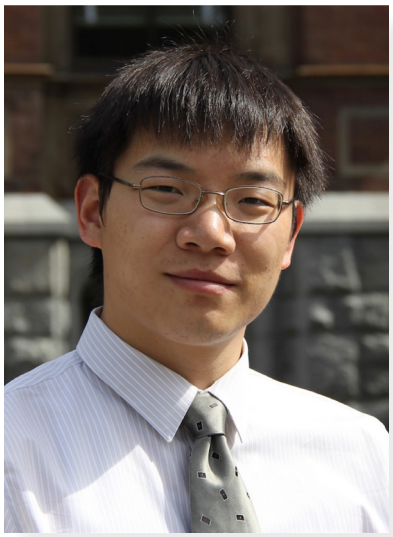

Rice University
Molecular and Nanotechnology
Seminar Series

Presents

Chong Liu, Ph.D.

Postdoctoral Fellow
Department of Chemistry & Chemical Biology
Harvard University

Tuesday, January 17, 2017 - 2:30 PM
Keck Hall 102

Artificial Photosynthesis: from Nano to Microbes

Artificial photosynthesis, a process that couples catalysis with semiconductor light harvesting, provides a direct solar-driven synthetic route to selectively produce fuels and commodity chemicals. One vital aspect to achieve high efficiency and selectivity in this process is the design of the solid/liquid interface where catalysis and energy transfer take place. This talk will describe my research efforts to understand, control, and design the solid/liquid interface in the context of artificial photosynthesis. The interface design principle
is illustrated with several examples, including integrated water-splitting nanostructures, efficient inorganic l microbial hybrids for CO2 reduction, as well as distributed ammonia synthesis from N2 and H2O at ambient conditions. Integrating the knowledge from chemistry, materials, and biology can establish a solar-to-chemical system that surpasses its natural counterparts.

About the Speaker

Chong Liu received his B.S. Degree in Chemistry from Fudan University, China. He then pursued his graduate research at University of California, Berkeley, working with Prof. Peidong Yang. At Berkeley his research focuses on the application of semiconductor nanomaterial's for artificial photosynthesis. After receiving his Ph.D. in chemistry at Berkeley, he continued his career at Harvard University, working with Prof. Daniel Nocera. At Harvard he combined the strengths of biology and inorganic chemistry, and developed inorganic/bio hybrid systems of solar-driven CO2 and N2 fixation with the efficiencies higher than natural counterparts.