

**Title** Biomimetic Diiron Catalysts for Hydrogen Production**Speaker** Dr. Richard GlassProfessor of Chemistry  
University of Arizona  
U.S.A.**Date & Time** Friday, May 18, 2012 3:00 p.m.**Place** INAMORI Hall, Ito campus, Kyushu University**Abstract**

H<sub>2</sub> is an ideal storable form of energy. Splitting water produces H<sub>2</sub> and burning it, or even better using it in fuel cells, regenerates water and releases the chemical energy stored in H<sub>2</sub>. Thus H<sub>2</sub> can serve as a recyclable alternative energy source which avoids CO<sub>2</sub>, a major contributor to global warming. Electrolysis of water to produce H<sub>2</sub> and H<sub>2</sub> fuel cells require catalysis by Pt, a rare and expensive metal. Nature uses cheap and readily available metals (Fe, Ni) for production and utilization of H<sub>2</sub> in exceptionally efficient hydrogenase enzymes. Inspired by Nature's catalysts organometallic complexes with Fe<sub>2</sub>S<sub>2</sub> cores are synthesized and used as catalysts for electrochemical production of H<sub>2</sub> from weak acids. The mechanism for such production is discerned from computational studies to help in designing improved catalysts.

**About the Speaker**

Dr. Richard Glass is Professor of Chemistry in the Department of Chemistry and Biochemistry at the University of Arizona in Tucson, Arizona, U.S.A. His main interests are in organoiron and chalcogen chemistry and the chemical biology of selenium and their impact on energy research, materials science and biological redox states. He has over 175 peer-reviewed publications and 5 patents. He is a fellow of the American Association for the Advancement of Science and a member of the American Chemical Society and the International Society of Heterocyclic Chemistry. He is a member of the International Committees for the International Conferences of Heteroatom Chemistry and the International Symposia on the Organic Chemistry of Sulfur and on the Editorial Boards of the Journal of Sulfur Chemistry and Arkivoc. He serves on government panels (U.S. National Science Foundation and National Institutes of Health) and as an industrial consultant.

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