

UniCat Colloquium

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Lecturer: **Prof. Richard Eisenberg**, Department of Chemistry, University of Rochester, The College of Arts & Sciences, Rochester, NY, USA

Title: **The Reductive Side of Water Splitting and the Light Driven Generation of Hydrogen from Water: New Developments, Strategies and Results**

Abstract: The conversion of light to stored chemical energy in a molecularly-based system for artificial photosynthesis relies on light absorption, photoinduced charge separation, the accumulation of redox equivalents, and catalysis. Recent efforts are described that focus on the reductive side of water splitting and the visible light-driven generation of hydrogen from aqueous protons and an electron source. The light absorbers examined in these efforts include metal complexes with triplet charge transfer (CT) excited states and organic dyes containing heavy atom substituents to facilitate access to longer-lived triplet pi-pi* states for electron transfer. As catalysts for the light-driven generation of hydrogen, other metal complexes including Co bis(dimethylglyoximate) systems have been, and are being, examined. Several new metal complex catalysts will be described including one that exhibits higher turnovers per mole of catalyst than has been previously reported. The photosynthetic systems for hydrogen generation based on organic dye chromophores and cobaloxime catalysts are notable for both their early activity and their propensity to photodecomposition. Studies reveal that both catalyst and photosensitizer lifetime are coupled, which in turn reveals guidelines for further development. These will be described.

Date: **Wednesday, 21 September 2011**

Time: **5:15 pm - around 6:45 pm**

Location: **HU Berlin; Department of Chemistry
Walter-Nernst-Haus, Marie-Curie-Hörsaal, 0'05,
Brook-Taylor-Str. 2, 12489 Berlin-Adlershof**

Organiser: **Dr. Kallol Ray (HUB)**

**Attention !
Different
Location !!!**

Coffee and tea will be served thirty minutes prior to the lecture start.
Guests are cordially invited to attend!

Prof. Dr. Matthias Driess, Chair of the Cluster of Excellence UniCat