

UniCat Colloquium

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Lecturer: **Prof. John H. Enemark**, Department of Chemistry and Biochemistry, University of Arizona, Tucson, Arizona, USA

Title: **Changing SOX with a flash: Chemistry of a vital molybdenum enzyme**

Abstract: Sulfite oxidase (SO) is a vitally important molybdenum enzyme that catalyzes the oxidation of toxic sulfite to sulfate, and human SO deficiency is a fatal genetic disorder that leads to early death. The proposed catalytic mechanism of vertebrate SO involves intramolecular electron transfer (IET) from the molybdenum cofactor to the iron of the integral *b*-type heme. The IET kinetics observed by laser flash photolysis are much faster than theoretically predicted from the 32 Å distance between the Mo and Fe centers in the crystal structure of chicken SO. It has been proposed that the flexible polypeptide tether that links the Mo and heme domains facilitates conformational changes that bring these two centers closer together, thereby increasing the rate of IET. Site-specific mutagenesis has been used to alter the length and flexibility of the tether in human SO, as well as the nature of residues at the proposed interface between the Mo and heme domains. The reactivity of the resulting variants has been studied using laser flash photolysis and steady-state kinetics assays.

Date: **Thursday, September 1st, 2011**

Time: **11:15 am**

Location: **Universität Potsdam;
Institut für Biochemie und Biologie
Karl-Liebknecht-Straße 24-25,
14476 Potsdam-Golm
Haus 25 , Raum B2.01**

Organiser: **Prof. Silke Leimkühler (TUB)**

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