UniCat Colloquium

Please note updates of events on www.unicat.tu-berlin.de

Lecturer: **Prof. Peter Leadlay**, Department of Biochemistry, University of Cambridge, UK
Alexander von Humboldt Research Award 2011,

Title: *Towards sustainable chemistry: assembly-line biocatalysis as a route to new pharmaceuticals*

Abstract: Complex polyketide natural products from bacteria continue to play a significant role in drug discovery, for they provide a wide range of structural diversity, and this in turn is associated with varied and potent bioactivities. The construction of these molecules involves a remarkable paradigm for catalysis (shared with nonribosomal peptide synthetases) in which a giant modular assembly-line multienzyme uses a different set of enzymes to add each successive monomer unit to the growing polyketide chain.

This direct relationship between the polyketide synthase gene sequence and the chemical structure of the product makes it possible to predict the likely chemical structure of the resulting natural product. Whole-genome sequences of candidate bacteria can now rapidly be analysed for the presence of multiple pathways encoding potentially novel compounds ("genome mining"). The central challenge now is to better understand the design principles of these remarkable "nanomachines", if they are to become a realistic, scaleable and sustainable platform for production of chemical diversity. Recent progress towards this goal will be described, especially the production of specifically altered antibiotics by splicing together portions of the genes encoding natural polyketide synthases.

Date: **Wednesday,**
Time: **5:15 pm - around 6:45 pm**

> **Postponed to next winter term 2012/2013 !!!**

Location: **TU Berlin, Institute of Chemistry**
Straße des 17. Juni 115, 10623 Berlin
Building C, Lecture Hall C 264

Organizer: **Prof. Roderich Süßmuth (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