

UniCat Colloquium

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Lecturer: **Prof. Anne S. Ulrich**, Department of Organic Chemistry, Full Professor of Biochemistry, Director of the Institute for Biological Interfaces (IBG2), Karlsruhe Institute of Technology (KIT), Germany

Title: **Transport machineries in biomembranes utilizing electrostatic “charge zippers”**

Abstract: Membrane proteins are engaged in diverse transport processes of moving hydrophilic material across hydrophobic lipid bilayers, involving e.g. pore formation or more subtle catalytic mechanisms. We demonstrate here a new structural principle for the folding and self-assembly of membrane proteins, based on electrostatic interactions. In these so-called “charge zippers”, long ladders of salt bridges form between amphiphilic transmembrane segments, running all the way across the lipid bilayer. The role of this functionally important structural motif will be illustrated for two case studies with pharmaceutical and biotechnological relevance: (a) the biofilm-inducing peptide TisB, which enables the controlled passage of protons across bacterial membranes; and (b) the TatA translocase, which drives the export of fully folded proteins through a pore with variable diameter.

Find more about Prof. Ulrich on
<http://www.ibg.kit.edu/nmr/english/index.php>

Date: **Wednesday, April 24th, 2013**

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

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

Organizer: **Prof. Nediljko Budisa (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