

# UniCat Colloquium

**PROF. DR. BEREND SMIT**

Ecole Polytechnique Fédérale de Lausanne (EPFL)

*The Materials Genome in Action: understanding the mechanical properties of metal organic frameworks*

Metal Organic Frameworks (MOFs) have emerged as versatile materials for applications ranging from gas separation and storage, catalysis, and sensing. The attractive feature of MOFs is that by changing the ligand and/or metal, they can be chemically tuned to perform optimally for a given application. In most, if not all, of these applications one also needs a material that has a sufficient mechanical stability, but our understanding of how changes in the chemical structure influence mechanical stability is limited. In this lecture, we rationalize how the mechanical properties of MOFs are related to framework bonding topology and ligand structure. In addition, we show how these molecular insights can be used to develop strategies to systematically improve the mechanical stability of the materials.

**Tuesday, April 24, 2018 at 5:15 PM**  
C 230

**Prof. Dr. Sauer (HUB)**  
Organizer

Coffee and cake will be served 30 minutes before the lecture. Guests are cordially invited to attend!  
Prof. Dr. Matthias Driess - Chair of the Cluster of Excellence UniCat - [www.unicat.tu-berlin.de](http://www.unicat.tu-berlin.de)



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