École polytechnique fédérale de Lausanne (EPFL) Valais/Wallis
Institute of Chemical Sciences and Engineering (ISIC)
Basic Science Faculty (SB)
Energypolis, Rue de l'Industrie 17, CH-1950 Sion, Switzerland

SEMINAR SERIES

HIGHLIGHTS IN ENERGY RESEARCH

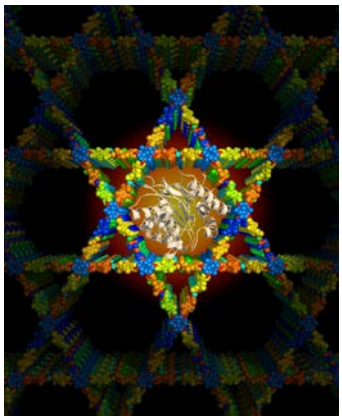
28.02.2019, 16:00 - 17:00, EPFL Valais, 4th floor, ZEUZIER room

Programmable Smart Bio-Inspired Sponges

Prof. Omar K. Farha

Department of Chemistry, Northwestern University, Evanston, USA

Host : Prof. Wendy Queen



Metal–organic frameworks (MOFs) are an emerging class of solid-state materials built up from metal-based nodes and organic linkers. They exhibit permanent porosity and unprecedented surface areas which can be readily tuned through coordination chemistry at the inorganic node and/or organic chemistry at the linkers. The high porosities, tunability, and stability are highly attractive in the context of catalysis. As exemplified by many catalytic enzyme assemblies in nature, site-isolation is a powerful strategy for performing catalytic reactions. MOFs provide an exciting platform for deploying catalysts in a site-isolated fashion and the cavities surrounding them can be engineered to conceptually mimic enzymes. This talk will address new advances in the synthesis and catalytic activity of MOF/Enzyme composite materials developed at Northwestern University.

Bio: ***Omar K. Farha*** is an associate professor of chemistry at Northwestern University, president of NuMat Technologies, and Associate Editor for ACS Applied Materials & Interfaces. His research accomplishments have been recognized by several awards and honors including the Royal Society of Chemistry "Environment, Sustainability and Energy Division Early Career" Award; the American Chemical society "The Satinder Ahuja Award for Young Investigators in Separation Science; and an award established by the Department of Chemistry at Northwestern University in his honor: the Omar Farha Award for Research Leadership "awarded for stewardship, cooperation and leadership in the finest pursuit of research in chemistry" and given annually to an outstanding research scientist working in the department. His current research spans diverse areas of chemistry and materials science ranging from energy to defense related challenges. Specifically, his research focuses on the rational design of metal–organic frameworks (MOFs) and porous-organic polymers for sensing, catalysis, storage, separations and light harvesting. Prof. Farha has more than 350 peer-reviewed publications, holds 14 patents, and has been named a "Highly Cited Researcher" by Thomson Reuters in 2014, 2015, 2016, 2017 and 2018.