

## SEMINAR SERIES

# HIGHLIGHTS IN ENERGY RESEARCH

19. 04. 2018, 10:30 - 11:30, ENERGYPOLIS Sion, 4<sup>th</sup> floor, ZEUZIER room

## MOFs and COFs as porous crystals for clean energy and water from desert air

*Omar YAGHI*

*James and Neeltje Tretter Chair Professor of Chemistry, UC Berkeley*

This talk will be about the chemistry of constructing new metal-organic frameworks and covalent organic frameworks from molecular building blocks, and their applications in clean energy (carbon dioxide capture and conversion to fuels). MOFs capable of harvesting water from low humidity desert air will also be described and their water uptake properties presented including a MOF device tested in the laboratory and Arizona desert.



### CV : Prof. Omar YAGHI

Omar M. Yaghi is the James and Neeltje Tretter Chair Professor of Chemistry at the University of California, Berkeley, and a Senior Faculty Scientist at Lawrence Berkeley National Laboratory. He is the Founding Director of the Berkeley Global Science Institute, and a Co-Director of the Kavli Energy NanoSciences Institute, as well as the California Research Alliance by BASF.

He is known for making metal-organic frameworks with permanent porosity and pioneering the basic science and applications of these materials in hydrogen storage, methane storage, carbon capture, and harvesting water from air. He also developed the chemistry and methods to linking organic building units into crystalline covalent organic frameworks, thus expanding organic chemistry beyond molecules and polymers to 2D and 3D extended structures. He named the building block chemistry used to make MOFs and COFs as reticular chemistry, which is currently being practiced in hundreds of labs worldwide.

Yaghi has received many awards for his work, including the Sacconi Medal of the Italian Chemical Society (2004), the Materials Research Society Medal (2007), the American Chemical Society Chemistry of Materials Award (2009), United Kingdom's Royal Society of Chemistry Centenary Prize (2010), King Faisal International Prize in Science (2015), Royal Society of Chemistry Spiers Memorial Award (2017), the Albert Einstein World Award of Science conferred by the World Cultural Council (2017), the BBVA Foundation Frontiers of Knowledge Award (2018), and the Wolf Prize in Chemistry (2018). He published over 250 articles, which have received over 120,000 citations. He is listed among the top five most highly cited chemists worldwide.