



Spiers Memorial Award 2017 Winner

Professor Omar M. Yaghi

University of California, Berkeley

Awarded for pioneering the conceptual and experimental basis of crystalline metal-organic frameworks and covalent organic frameworks with exceptional porosity and applications.



About the Winner

Omar M. Yaghi is the James and Neeltje Tretter Chair Professor of Chemistry at University of California, Berkeley. He is also the Founding Director of the Berkeley Global Science Institute, and the Co-Director of the Kavli Energy NanoSciences Institute, and the California Research Alliance by BASF.

His work encompasses the synthesis, structure and properties of inorganic and organic compounds and the design and construction of new crystalline materials. He is widely known for the discovery and for pioneering the development of several extensive classes of new materials he termed Metal-Organic Frameworks (MOFs), Covalent Organic Frameworks (COFs), and Zeolitic Imidazolate Frameworks (ZIFs). These materials have the highest surface areas known to date, making them useful in clean energy storage and generation, storage and separation of hydrogen, methane, and carbon dioxide, conversion of carbon dioxide to fuels and high value chemicals, capture of water from air and delivery of fresh water, supercapacitor devices, proton and electron conductive systems, and enzyme-inspired catalysis. The building block approach he developed has led to an exponential growth in the creation of new materials having a diversity and multiplicity previously unknown in chemistry. He termed this field 'Reticular Chemistry' and defines it as 'stitching molecular building blocks into extended structures by strong bonds'. This chemistry is now being practiced using methods developed by Yaghi since 1995 in hundreds of laboratories in academia and industry worldwide.

Yaghi has received many recognitions for his research contributions, including Solid-State Chemistry Award of the American Chemical Society and Exxon Co. (1998), the Sacconi Medal of the Italian Chemical Society (2004), 'Brilliant 10' scientists and engineers in the United States by Popular Science magazine (2006), US Department of Energy Hydrogen Program Award (2007), Materials Research Society Medal (2007), AAAS Newcomb Cleveland Prize (2007), American Chemical Society Chemistry of Materials Award (2009), Izatt-Christensen International Award (2009), Royal Society of Chemistry Centenary Prize (2010), China Nano Award (2013), King Faisal International Prize in Science (2015), Mustafa Prize in Nanoscience and Nanotechnology (2015), Turkish Academy of Sciences Prize in Basic and Engineering Sciences (2016). He is listed among the top five most highly cited chemists worldwide.

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