Omar M. Yaghi

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Omar M. Yaghi received his Ph.D. in Chemistry from University of Illinois at Urbana-Champaign, and was an NSF Postdoctoral Fellow at Harvard University. He is the James and Neeltje Tretter Chair Professor of Chemistry at University of California, Berkeley. He is the Founding Director of the Berkeley Global Science Institute whose mission is to build centers of research in developing countries and provide opportunities for young scholars to discover and learn. He is also the co-director of the Kavli Energy NanoSciences Institute focusing on the basic science of energy transformation on the molecular level, the co-director of the California Research Alliance by BASF supporting joint academia-industry innovations, as well as the co-director of Bakar Institute of Digital Materials for the Planet which aims to develop cost-efficient, easily deployable versions of two classes of ultra porous materials – known as metal-organic frameworks (MOFs) and covalent organic frameworks (COFs) – to help limit and address the impacts of climate change.

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 pioneering several extensive classes of new materials: 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 for hydrogen and methane storage, carbon capture and conversion, water harvesting from desert air, and catalysis, to mention a few. 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'. His work on MOFs, COFs, and ZIFs led to over 300 published articles, which have received a total of more than 210,000 citations. He has an h-index of 175 and ranked as the second most impactful chemist worldwide (Top 100 Chemists, Thomson Reuters, 2011).

Yaghi is an elected member of the U.S. National Academy of Sciences, American Academy of Arts and Sciences, and the German National Academy of Sciences Leopoldina. He has also been honored with many awards, including the Sacconi Medal of the Italian Chemical Society (2004), Materials Research Society Medal (2007), American Chemical Society Award in the Chemistry of Materials (2009), Royal Society of Chemistry Centenary Prize (2010), King Faisal International Prize in Science (2015), Albert Einstein World Award of Science (2017), BBVA Foundation Frontiers of Knowledge Award in Basic Sciences (2017), Wolf Prize in Chemistry (2018), Eni Award for Excellence in Energy (2018), Gregori Aminoff Prize by the Royal Swedish Academy of Sciences (2019), August-Wilhelm-von-Hofmann-Denkmünze of the German Chemical Society (2020), Royal Society of Chemistry Sustainable Water Award (2020), Belgium's International Solvay Chair in Chemistry (2021), and VinFuture Prize for Emerging Science and Technology (2021).