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"Simplicity is the ultimate sophistication"
Leonardo da Vinci

Prof. Omar M. Yaghi

May 30, 2017 News Winner of the World Award of Science 2017 Winners of the World Award of Science

Professor Omar M. Yaghi, the James and Neeltje Tretter Chair Professor of Chemistry, University of California-Berkeley, USA, has been selected as the winner of the **2017 ALBERT EINSTEIN World Award of Science**.

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The prize is awarded for his ground-breaking scientific contributions in making materials by stitching organic and inorganic units through strong bonds into robust, porous crystalline metal-organic frameworks (MOFs) and covalent organic frameworks (COFs), and for establishing a new field of chemistry – Reticular Chemistry.

These original accomplishments, both theoretical and experimental, have spurred the creation of new fields of chemistry, developing new materials for application in clean energy, hydrocarbon separation, clean water production, catalysis and more recently electronics.

The World Cultural Council acknowledges **Prof. Yaghi's** leadership in research and mentoring emerging scholars in multiple countries around the world, along with his commitment to developing innovative solutions to problems that threaten world sustainability. Not only is this a precious service to mankind but it also inspires future generations.

Achievements

Omar Yaghi was born (February 9, 1965) and raised in Amman, Jordan. In third grade, he had an experience that would profoundly impact his life. One lunch break, he slipped into the school library and came across drawings of molecules, mysterious yet beautiful to him. Reflecting on the meaning of this discovery, he felt there was a wonderful secret held within him that he could not yet fully understand.

At the age of 15, Omar left Jordan for the USA. He received his BSc from State University of New York-Albany in 1985 and PhD from the University of Illinois-Urbana in 1990, before working as a NSF Postdoctoral Fellow at Harvard (1990-92). He has been on the faculties of Arizona State University, University of Michigan, and UCLA. He is currently the James and Neeltje Tretter Chair Professor of Chemistry at UC Berkeley and a Senior Faculty Scientist at Lawrence Berkeley National Laboratory. He is also the Founding Director of the Berkeley Global Science Institute, and Co-Director of both the Kavli Energy NanoScience Institute and the California Research Alliance by BASF.

Prof. Yaghi is noted for his contribution in introducing metal-oxide clusters as anchors for joining organic linkers into robust crystalline open frameworks with permanent porosity. These new metal-organic frameworks (MOFs) are numbered roughly in their chronological order of discovery. MOF-2 (reported in 1998) was the first MOF to exhibit a Type-I gas adsorption isotherm at low pressure and low temperature, the gold standard for proving that gases can move in and out of frameworks without structural collapse, thus proving their permanent porosity and opening the way for practical applications in gas storage and

separations, including carbon dioxide capture and conversion to fuels. Such frameworks are useful for making our world sustainable with great short and long-term benefits.

Professor Yaghi broke the historic world record of porosity in 1999 by developing MOF-5 and its congeners reaching the highest surface area: 6,500 m^2 /g. From 2000-2010, he was listed among the two most highly cited chemists worldwide (Thomas Reuters, February 10, 2011). He has won national and international awards including the: 2004 Sacconi Medal, Italian Chemical Society, Inorganic Chemistry Division; 2007 Materials Research Society Medal (Sole Recipient); 2009 American Chemical Society Award in the Chemistry of Materials; 2010 Royal Society of Chemistry Centenary Prize; 2015 King Faisal International Prize in Science; 2017 Royal Society of Chemistry Spiers Award, and 2017 King Abdullah II Order of Distinction of the First Class, among many others.

Prof. Yaghi is keen to foster science in other countries. He has founded several research centres in Vietnam, Korea, Japan, Jordan and Saudi Arabia, providing opportunities for young local researchers.

Omar Yaghi now understands the power of those molecular drawings in his school library. They have led him to make major breakthroughs and create new fields of research. His discoveries over the last 25 years have given rise to an explosive growth in materials chemistry with major impact worldwide.

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