MOLECULAR FRONTIERS

LUND UNIVERSITY

KUNGL. FYSIOGRAFISKA SÄLLSKAPET I LUND

2024 LUND SYMPOSIUM

On Human Origins and the Future of Humanity

PROFESSOR OMAR M. YAGHI

James and Neeltje Tretter Chair Professor of Chemistry,
University of California, Berkeley
Elected member of the US National Academy of Sciences

TALK TITLE: Molecular Precision for Betterment of Humanity

Yaghi pioneered reticular chemistry, a new field of chemistry concerned with stitching molecular building blocks together by strong bonds to make open frameworks. His most recognizable work is in the design and production of new classes of compounds known as metal-organic frameworks (MOFs), zeolitic imidazolate frameworks (ZIFs), and covalent organic frameworks (COFs). MOFs are noted for their extremely high surface areas (5640 m2/g for MOF-177) and very low crystalline densities (0.17 g·cm−3 for COF-108). Yaghi also pioneered molecular weaving, and synthesized the world's first material woven at the atomic and molecular levels (COF-505). He has been leading the effort in applying these materials in clean energy technologies including hydrogen and methane storage, carbon dioxide capture and storage, as well as harvesting water from desert air. He recently co-founded the Bakar Institute of Digital Materials for the Planet where the vast materials space of reticular chemistry is being explored with artificial intelligence tools to speed up the discovery of materials and their applications in areas such as water, food, healthcare, climate and energy, with the aim of improving the quality of life for everyone.

CELEBRATING THE 50TH ANNIVERSARY
OF THE DISCOVERY OF LUCY

MOLECULAR FRONTIERS · FERRING PHARMACEUTICALS · next breath · World Scientific Connecting Great Minds · Berkeley Global Science Institute · PEREGRINE HOLDINGS INTERNATIONAL · EXPLORERS MUSEUM · atoco