ETH zürich

ETH CHEMICAL ENGINEERING MEDAL

Wednesday, 31 May 2023, 5 pm, HCI J 7
award ceremony and talk

In recognition of his outstanding achievements in Catalysis Engineering

Prof. Dr. Avelino Corma

Universitat Politécnica de Valencia

will be awarded the 2020 ETH Zurich Chemical Engineering Medal

After the ceremony, the awardee will give a talk on

CATALYSIS DESIGN FOR MORE SUSTAINABLE CHEMICAL PROCESS

Chemistry and chemical process are at the bases of the development of our society. They have direct implications on energy, sustainability, health and food sectors. Society demands for more sustainable chemical process that avoid formation of subproducts, as well as new process to produce goods and materials from renewable resources. We will present that catalysis plays as a key role on chemical sustainability and to minimize CO2 print. Catalysis allows to select new production routes with higher atom efficiency, minimize sub-product formation, to achieve process intensification and minimize energy consumption. Finally, catalysis allows to activate and convert CO2 into synthetic fuels and chemicals. In the presentation, we will concentrate on solid catalysts and, more specifically on well-structured solid catalyst, with well-defined single or multiple sites. Meanwhile, we will present the benefits that can be achieved on activity and selectivity, by introducing the active sites in predesigned confined spaces. The last will be an approximation to the way enzymes work to achieve their remarkable selectivity.

Prof. Dr. Avelino Corma, professor and founder of the Instituto de Tecnología Química (CSIC-UPV) in Valencia (Spain), has been carrying out research in heterogeneous catalysis in academia and in collaboration with companies for nearly 40 years. He has worked on fundamental aspects of acid-base and redox catalysis with the aim of understanding the nature of the active sites, and reaction mechanisms. With these bases has developed catalysts that are being used commercially in several industrial processes. He is an internationally recognized expert in solid acid and bifunctional catalysts for energy chemicals, and for making more sustainable chemical processes, especially in the synthesis and application of zeolite catalysts. He has published more than 1'400 research papers, and inventor on more than 180 patents. Has an H-Index of 181 and has received more than 170'000 citations (google shoolar). Corma earned his BS in Chemistry at Valencia University, PhD at Madrid under direction of Prof. Antonio Cortes, and spent two years postdoc at Queen´s University.

ICB Institute for Chemical and Bioengineering

DCHAB Department of Chemistry and Applied Biosciences