

ETH CHEMICAL ENGINEERING MEDAL

Friday, 15 June 2018, 4 pm, HCI J 3
award ceremony and talk

In recognition of his outstanding achievements in
heterogeneous catalysis

Prof. Dr. Jens K. Nørskov

SUNCAT Center for Interface Science and Catalysis
Stanford University

will be awarded the 2018 ETH Zurich Chemical Engineering
Medal by the rector of ETH Zurich, Prof. Dr. Sarah Springman



Prior to the ceremony, the awardee will give a talk on

A MOLECULAR VIEW OF HETEROGENEOUS CATALYSIS

Abstract. The development of sustainable energy systems puts renewed focus on catalytic processes for energy conversion. We will need to find new catalysts for a number of processes if we are to successfully synthesize fuels and chemicals from solar or wind electricity. Insight into the way the catalysts work at the molecular level may prove essential to speed up the discovery process. The lecture will outline a theory of heterogeneous catalysis that allows a detailed understanding of elementary chemical processes at transition metal surfaces and singles out the most important parameters determining catalytic activity and selectivity. It will be shown how scaling relations allow the identification of descriptors of catalytic activity and how they can be used to construct activity and selectivity maps for both thermal and electro-catalytic processes. The maps can be used to define catalyst design rules and examples of their use will be given.



Professor Jens Nørskov is the Leland T. Edwards Professor in the School of Engineering, Stanford University. From July 2018 he will become the Villum Kann Rasumussen professor at the Technical University of Denmark. His research aims at developing theoretical methods and concepts to understand and predict properties of materials. He is particularly interested in surface chemical properties, heterogeneous catalysis, electrocatalysis, and applications in energy conversion. Jens Nørskov has received several awards and honors, most recently the European Inventor Award from the European Patent Office, the Murray Raney Award from the Organic Reactions Catalysis Society, the Carlsberg Prize from the Royal Danish Academy of Science and Letters, the Irving Langmuir Award from the American Physical Society, and the Michel Boudart Award from the American and European Catalysis Societies. He holds honorary doctorates at the Technical University of Eindhoven and at the Norwegian University of Science and Technology and is a

member of the Royal Danish Academy of Science and Letters, the Danish Academy of Engineering, and a foreign member of the US National Academy of Engineering.