ETH zürich

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chairman: Prof. Dr. Chih-Jen Shih

(INDUSTRIAL) CATALYSIS FOR THE ENERGY SUPPLY: SMALL MOLECULES – LARGE OPPORTUNITIES

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ETH Hönggerberg, HCI J 7
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Abstract: The chemistry and catalysis of small, C1 molecules, including methane and carbon dioxide, becomes more relevant because these molecules play an important role in the current supply of energy and materials, including chemicals. Likely, this becomes even more relevant because of the need to supply more energy (and more materials) for more people while simultaneously decarbonize fuels (shift from coal to natural gas) in line with CO2 capture and use to mitigate global warming, as well as a gradual shift on the supply side, from coal to natural gas. This presentation will focus on the opportunities for catalysis to provide solutions for these challenges and includes both recent industrial developments and new, scientific developments in chemistry & materials that may open novel connections between energy and materials.

Bio: Carl Mesters joined Shell in 1984 and currently works from the Shell Technology Center in Houston. He has been active in catalysis and process R&D across many areas, including selective catalytic reduction of NOx, ethylene oxide, gas-to-liquids, catalytic dewaxing, aromatic hydrogenation, xylene isomerization, etc. resulting in more than 70 patents filed. In 2005 he was appointed Shell's Chief Scientist for Chemistry & Catalysis. Today's main topics are in 'Gas to Chemicals' and chemistry & catalysis related to the energy transition. Carl has been Chairman of the Catalysis Society of the Royal Dutch Chemical Society. He holds a degree in Physical and Inorganic Chemistry from the University of Utrecht, the Netherlands, where he also completed a research Ph.D.