



# Academic Lecture



State Key Laboratory  
of Chemical Resource Engineering

## Heterogeneous Catalyst Design Principles for Clean Water Applications



**报告人:** Prof. Michael S Wong (Rice University)

**时间:** 2017-09-20 (周三) 上午 9:30-10:30

**地点:** 图书馆一层多功能厅

### 报告简介:

One of the central tenets in the field of heterogeneous catalysis is the surface catalytic properties of a material are controlled by its nanostructure. By understanding the structure-property connection at increasingly fine detail, one can create materials to improve our understanding of chemical reactions at the molecular level, and to imbue them with enhanced catalytic performance (i.e., the three S's of speed, selectivity and stability). Through a synthesis-structure-property approach, recalcitrant contaminants of water can be degraded or even upgraded successfully. To illustrate the developments in this growing genre of heterogeneous catalysis, I discuss several clean-water reaction systems from established and new work from my research program, including nitrate reduction using In-on-Pd nanoshapes. These learnings provide insights into another class of water-phase chemical reactions relevant to clean energy, e.g., biomass upgrading via glycerol oxidation.

### 报告人简介:

Dr. Michael S. Wong is Professor and Chair of the Department of Chemical and Biomolecular Engineering at Rice University. His research program broadly addresses chemical engineering problems using the tools of materials chemistry, with a particular interest in energy and environmental applications ("catalysis for clean water") and an emphasis on understanding synthesis-structure-property relationships in heterogeneous catalysis. He has received numerous honors over the years, including the MIT TR35 Young Innovator Award, the American Institute of Chemical Engineers (AIChE) Nanoscale Science and Engineering Young Investigator Award, Smithsonian Magazine Young Innovator Award, Guest Professorship at Dalian Institute of Chemical Physics (DICP), and in 2015, the North American Catalysis Society/Southwest Catalysis Society Excellence in Applied Catalysis Award. He is Chair of the ACS Division of Catalysis Science and Technology (CATL), and serves on the Appl. Catal. B editorial board. Previous service includes Chairmanship of the AIChE Nanoscale Science and Engineering Forum and Chem. Mater. editorial board membership.

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