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DISTINGUISHED SPEAKER SERIES

Sabatier Plot and Beyond: The Case of Catalyst Design for Hydrogen Fuel Cells

By Prof Yu Huang

Electrocatalysis plays a central role in diverse energy technologies that are of increasing importance for applications in mobile electronics, electric vehicles, as well as renewable energy industry. Despite considerable progress, many electrocatalytic systems, such as hydrogen fuel cells, are still plagued by insufficient catalytic efficiency, poor stability or high cost of the precious metal catalysts used. This presentation will introduce the development of experimentally attainable descriptor capable of predicting catalytic activity and stability of catalysts. At the end of the talk microenvironment modulation at the electrode-electrolyte interfaces and the structure design of catalyst design catering to overall catalyst activity and stability in operating fuel cells will be discussed.

Friday, 24 February 2023

9 to 10am (Singapore Time)

Via Zoom:
https://nus-sg.zoom.us/j/82008812877?pwd=dU85eVh4NnVlQnFwdGl6L2l1MHJIUT09

Meeting ID: 820 0881 2877
Passcode: 784465

Prof. Yu Huang, the Traugott and Dorothea Frederking Endowed Chair and the Department Chair in the Department of Materials Science and Engineering at University of California Los Angeles. She received her BS in Chemistry from University of Science and Technology of China, and her PhD in physical chemistry and MA in Chemistry from Harvard University. Before Huang embarked on her independent career at UCLA, she was awarded the prestigious Lawrence Fellowship and held a joint postdoctoral position with Lawrence Livermore National Lab and Massachusetts Institute of Technology.

Her research focuses on mechanistic understanding of nanoscale phenomena and on exploiting the unique properties of nanoscale materials for various applications. Taking advantage of the unique roles of nanoscale surfaces and interfaces, Huang is creating methodologies to apply the latest developments in nanoscale materials and nanotechnology for probing nanoscale processes that can fundamentally impact a wide range of technologies including materials synthesis, catalysis, fuel cells, and future electronics. Prof. Huang's achievements have gained her international and national recognitions including the International Precious Metal Institute Carol Tyler Award, the Presidential Early Career Award in Science and Engineering and the International Society of Electrochemistry Prize for Experimental Electrochemistry, to name a few. She is also recognized as a Highly Cited Researcher in Materials Science by Web of Science.