“Designing Catalysts: A very old idea finally starts to blossom”

Wednesday
October 18, 2017
3:00 pm
Wu and Chen Auditorium
Levine Hall

Reception to Follow

Susannah Scott

Distinguished Professor of Chemical Engineering
University of California – Santa Barbara

Abstract

The concept of the catalytic active site is over 100 years old, but the practice of identifying, characterizing, and creating these sites to achieve precise chemical transformations at scale is still a highly erratic pursuit. Industrial chemical processes usually operate with “heterogeneous" catalysts consisting of a transition metal component dispersed on the surface of a mechanically robust support, and the catalysts may generate their active sites only once inside the reactor. Finding these sites requires the ability to observe them in challenging environments, and then to create them on purpose. My research explores ligand and support effects on the reactivity and stability of dispersed metal ions under reaction conditions, in order to understand and engineer more successful catalysts.

Bio

Scott received her B.Sc.(Hons.) from the University of Alberta (Canada) in 1987, and her Ph.D. from Iowa State University in 1991. She was a NATO Postdoctoral Fellow at the Institut de recherches sur la catalyse (CNRS) in Lyon, France, before joining the faculty of the University of Ottawa (Canada) in 1994. There, she held an NSERC Women's Faculty Award, a Cottrell Scholar Award, a Union Carbide Innovation Award, and was named a Canada Research Chair in 2001. She moved to the University of California, Santa Barbara in 2003, where she currently holds the Duncan and Suzanne Mellichamp Chair in Sustainable Catalysis, with joint faculty appointments as a Distinguished Professor in both Chemical Engineering and in Chemistry & Biochemistry. Scott is an Associate Editor for the journal ACS Catalysis and was named the 2017-2018 Vladimir N. Ipatieff Lecturer by the Center for Catalysis and Surface Science at Northwestern University. Her research interests include surface organometallic chemistry, catalytic olefin transformations, dynamic nanomaterials, biomass conversion, environmental catalysis and the development of new kinetic and spectroscopic methods to probe reaction mechanisms at surfaces.

Fall 2017 Grace Hopper Lecture

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