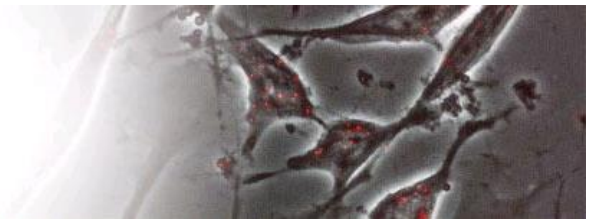
UCLA Engineering

Chemical and Biomolecular Engineering



SEMINARS IN CHEMICAL AND BIOMOLECULAR ENGINEERING

Friday, May 3, 2019
10:00am - 11:00am
Boelter Hall 3400

Susannah Scott

Distinguished Professor
Chemical Engineering
UC Santa Barbara

"Influence of solvent-surface interactions on heterogeneous catalysis in porous inorganic oxides"

Liquid phase transformations in porous materials experience strong kinetic effects caused by partitioning of solvents, reactants, and products between the bulk liquid phase and the pores. We probe these effects by measuring the molecular composition of the solid-liquid interface, while simultaneously observing the kinetics of catalytic reactions using operando magic-angle-spinning NMR spectroscopy. The findings shed light on the origin of non-monotonic activity and selectivity trends, as well as changes in mechanism for solid base-catalyzed carbohydrate isomerization and metal-catalyzed hydrogenolysis reactions.

Susannah Scott is a Distinguished Professor at the University of California, Santa Barbara, where she is the Duncan and Suzanne Mellichamp Chair in Sustainable Catalysis. She holds joint faculty appointments in the Departments of Chemical Engineering and Chemistry & Biochemistry, and she leads UC Santa Barbara's Mellichamp Academic Initiative in Sustainable Manufacturing. In her research, Scott investigates, designs and reengineers catalysts for chemical transformations including the valorization of biomass, the energy efficient manufacturing and end-of-life upcycling of synthetic polymers, and the remediation of environmental contaminants.