

Department Seminar

Dear Colleagues & Students,
You are cordially invited to a special seminar on

Date: 01st July 2026, Wednesday

Time: 2:00pm - 3:00pm

Venue: E7-03-07 - Seminar Room 2, 15 Kent Ridge Cres, Singapore 119276 ([Map](#))

Single-molecule catalysis



By Prof. Peng Chen, Cornell University

Hosted by: Assistant Professor Ming Zhao

Abstract:

This presentation will first give a brief introduction to the single-molecule fluorescence approaches to image catalytic reactions on single nanoparticles at single-turnover and super-optical resolution. It will present applications of such approaches in gaining insights into the spatiotemporal reactivity patterns on single catalytic particle in (photo)(electro)catalysis. It will also describe the recent development of new approaches for super-resolution imaging of nonfluorescent processes on surfaces, including molecular adsorption and the formation of metal-hydrogen intermediates in (photo)electrocatalysis.

Biography:

Peng Chen is the Peter Debye Professor of Chemistry at Cornell University. He did his B.S. at Nanjing University, Ph.D. at Stanford University, and postdoc at Harvard University. His group pioneered the study of single-nanoparticle catalysis, electrocatalysis, and photoelectrocatalysis; of living polymerizations by single molecular catalysts; and of biological inorganic systems in vitro and in living cells; using single-molecule/particle imaging and manipulation methods. His current research interests are heterogeneous and homogeneous catalysis, bacterial metal homeostasis, and bioenergy conversion. He is a member of American Academy of Arts and Sciences and a fellow of American Association for the Advancement of Science. He has received many national and international awards and given many named, plenary, and keynote lectures.

Looking forward to seeing all of you!