

Materials Science Lecture Series

Surface Science and Surface Reaction Fundamentals



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Date & Venue

July 10, 2017

2:00-3:00 pm

Seminar Room 414

Institute of Inorganic Chemistry

“Life at the edge” - Surfaces are where the action is!

Our research involves investigating and understanding chemical reactions at surfaces. Interfacial processes and surface chemistry are at the heart of a wide range of technologies, including those associated with the chemical and petroleum industries, functioning of batteries and fuel cells, production of microelectronic devices, and design and fabrication of sensors and diagnostic devices. Surfaces play key roles in heterogeneous processes in environmental and atmospheric chemistry. By discovering novel methods to alter and control surface chemistry, we seek to develop new catalysts for specialty chemical synthesis, make advanced materials with novel properties, and build functional nanostructures. Surfaces are central to nanoscience and technology, modifying and controlling important properties of nanoparticles and electrical contacts. We employ a wide array of surface analytical techniques in our work, including scanning tunneling microscopy (STM), high-resolution X-ray photoelectron spectroscopy (HR-XPS), low energy ion scattering (LEIS), and infrared reflection-absorption spectroscopy (IRAS).