【총회초청】

Catalysis by Supported Metal Nanoclusters

D. Wayne Goodman
Department of Chemistry, Texas A&M University, College Station, TX 77842-3012

Model catalysts consisting of metal clusters of varying sizes have been prepared on single crystal TiO_2 and ultra-thin films of TiO_2, Al_2O_3, and SiO_2.The morphology, electronic structure, and catalytic properties of these metal clusters have been investigated with emphasis on the unique properties of those clusters <5.0 nm in size. An array of surface techniques including scanning tunneling microscopy (STM) and polarization modulation infrared reflection absorption spectroscopy (PM-IRAS) have been used to study the metal cluster morphology, electronic properties, and chemistry. These studies illustrate the novel physical and chemical properties of nanosized metal clusters, and suggest that their catalytic properties may be tailored for specific chemical transformations.