

Modeling the Complexities of Heterogeneous Catalysts

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In the past several decades, surface science methodologies have contributed significantly to our understanding of reaction mechanisms of heterogeneous catalysts. From fundamental studies on metal single crystals to investigations of metal oxide supported metal clusters, the relative complexities of model catalyst systems have continued to evolve in complexity and likeness to industrial catalysts. These model systems are useful for carrying out kinetic investigations, yet are amenable to surface spectroscopic techniques, thus enabling investigations under realistic pressures and at working temperatures. This talk will describe recent studies of catalytic reactions on metal clusters supported on planar oxide and carbon (graphene) supports.