

Nano Seminar

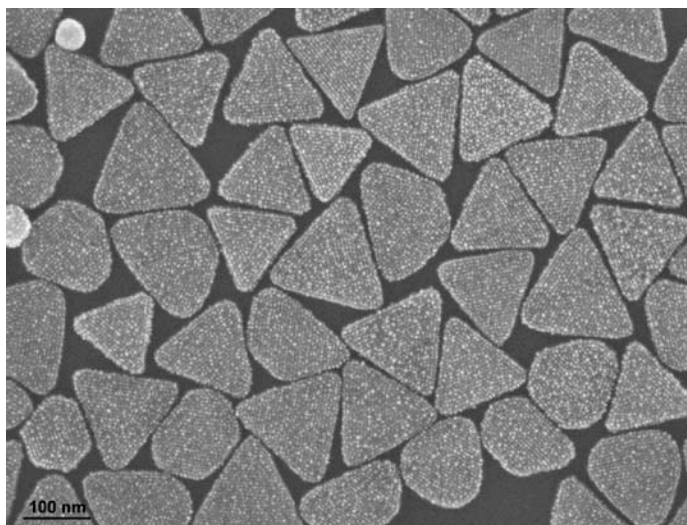
Metal-Ligand Chemistry in Multimetallic Nanoparticle Synthesis and Performance

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Abstract:

Metal-ligand chemistry is shown to be a pivotal tool in the control of metal nanoparticle formation, structure, and emergent properties. Specifically, small molecule ligand chemistry is used to mediate the incorporation and distribution of metals in and on discrete, colloidal nanoparticle substrates, as well as modulate their emergent optoelectronic features once formed. Here, we focus on cases of 3d transition metals in Au and Pt hosts. The resulting structures are characterized by a wide variety of methods including NMR spectroscopy, electron microscopy, and photoelectron spectroscopy techniques. Specifically, we demonstrate that nanoparticle ligand chemistry may be used to access previously unobserved mixtures of metals, unique distributions of metals at the surface of a colloidal particle, as well as composition-tunable and surface chemistry controlled photoemission. These results provide mechanistic platforms for the development of nanoscale alloys and other bimetallic architectures that are promising for a wide variety of applications ranging from light-driven catalysis to covert signaling.



Gathering & Refreshments at 10:50

Please contact Liron Dover at 6584919 if you are interested in meeting the lecturer.

Monday, Apr. 4th 2016, 11:00 at the Seminar Hall
Los Angeles Building, entrance floor.