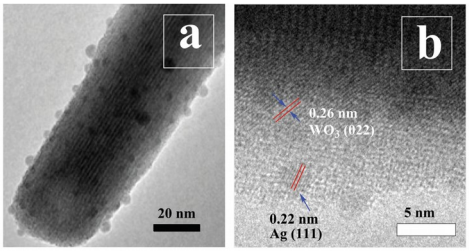
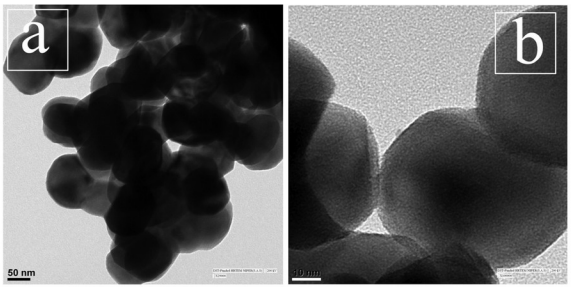
Adipic Acid synthesis over Ag-Cu / WOx Nanostructured catalyst:

Particles in the nanosize domain have attracted considerable attention not only for their fundamental scientific interest, but also for many technological applications including catalysis due to their very high accessible surface area and easy availability of a large number of active sites. Adipic acid (AA) is one of the most important compounds among all aliphatic dicarboxylic acids produced industrially. With the global annual production of over 3.5 million tons,adipic acid is used predominantly as a raw material in the production of a wide range of industrial and commercial products including synthetic fibers, nylon 6,6, polyurethanes, plasticizers,adiponitriles, low temperature synthetic lubricants and
so on. We report here the preparation of almost uniformly dispersed ~5 nm Ag nanoparticles (AgNPs) supported on WO3 nanorods with diameters between 40 and 60 nm and we found that this catalyst is highly active for selective oxidation of cyclohexene to adipic acid.



We synthesized Cu(II) nanoclusters supported on nanocrystalline W(VI) oxide with sizes 25–65 nm in the hydrothermal process, promoted by the cationic surfactant cetyltrimethylammonium bromide and this catalyst is highly active for the transformation of cyclohexane to adipic acid.



References:

1. Shankha Shubhra Acharyya, Shilpi Ghosh, Rajaram Bal* ; Green Chemistry 17 (2015) 3490 (Hot Article).
2. Shilpi Ghosh, Shankha, Shubhra Acharyya, Shubhadeep Adak, L. N. Sivakumar Konathala, Takehiko Sasaki, Rajaram Bal*; Green Chemistry, 16 (2014) 2826.