Abstract Submitted
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Synthesis and characterization of Au/Pd core/shell bimetallic nanoparticles[1] NABRAJ BHATTARAI, University Of Texas at San Antonio, JESUS VELAZQUEZ-SALAZAR , GILBERTO CASILLAS GARCIA, MIGUEL J. YACAMAN — The structure of nanoparticles plays an important role in many applications of nanotechnology like plasmonics, catalysis, electronic, optical, sensing and others. Using the bimetallic nano particles the properties will be changed. The particles shape is equally important as the size of the particles. The production of high index facet nanoparticles changes the shape by increasing the kinks and density of atomic steps there by increasing the catalytic activity of the reactions. The structure of Au/Pd nanoparticles depends on the preparation methods. The structure might be the core shell, alloys or others. We synthesized Au-Pd core-shell cubic nanoparticle of size 30nm. The morphology is studied by STEM HITACHI S-5500. The HRTEM image, diffraction pattern, weak beam dark field image is obtained by JEOL 2010-F transmission electron microscope equipped with field emission gun and an ultra-high-resolution pole piece with STEM attachment. The micro analysis EELS and EDS spectra is obtained by ARM 200F. The distribution of nanoparticles is observed by EDS mapping. The strains from weak beam dark field image and the reconstructed image from tomography confirmed the nanocube structure. Also the EDS mapping and EELS spectrum confirmed the Au core and Pd shell structure.

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