

Synthesis and Electrocatalytic Activities of Au-Pt Paramecium Nanoparticles

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We describe a simple and effective route to synthesize bimetallic core-shell nanoparticles in aqueous solution by a two-step seed-mediated growth method using Au nanorods as cores. Au nanorods of about 2.5 in aspect ratio were first synthesized as the cores. Then the uniform Au-Pt paramecium nanoparticles prepared by overgrowth of Pt on the surface of the Au cores in high yield by reducing K_2PtCl_4 with ascorbic acid in presence of surfactant (cetyltrimethylammonium-bromide, CTAB). The Au-Pt paramecium Nanoparticles have been characterized by examining their morphologies, particles sizes, and catalytic activities by means of UV-vis spectroscopy, transmission electron microscopy (TEM), high-resolution TEM (HRTEM), energy-dispersive X-ray spectroscopy (EDS), X-ray diffraction (XRD), cyclic voltammetry (CV), and chronoamperometry.