

Chemical Preparation of Ionic Liquid – stabilized Palladium NPs

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We have successfully synthesized Ionic Liquid (IL) – stabilized palladium nanoparticles (NPs) by chemical reduction. The particle size was controlled by adjustment of the current density. Transmission electron microscopic (TEM) images showed NPs with average size of 2.4, 3.2, and 3.5 nm were produced depending on the synthetic conditions. The particle size increased with a decrease in the current density and the length of the alkyl chain in the cations. Electron diffraction patterns of the resulting NPs indicated that the particles had a crystalline structure. Overall, the results showed that NPs can be finely tuned according to the kinds of ILs employed and via chemical reduction.