

Synthesis of silver dendritic nanoparticles protected by Poly acrylic acid

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In this study, silver nanoparticles of uniform size and shape have been synthesized by chemical reduction of silver nitrate at room temperature using poly acrylic acid(PAA) as protective agent. Here, reducing agent is ascorbic acid. The shapes and sizes of silver nanoparticles were controlled by changes in the ratio of concentration of the PAA to the concentration of silver nitrate and controls of pH. The prepared silver nanoparticles display 'dendritic' nanostructure. Namely, silver nanoparticles have numerous protuberances. The BET surface area of obtained silver nanoparticles is larger than spherical silver nanoparticles. The morphology of obtained products was characterized by scanning electron microscope(SEM) and transmission electron microscope(TEM) observation. And absorption spectra of the obtained silver colloid were measured using UV-visible spectroscope. These Ag nanoparticles with unusual nanostructures may have important applications in catalysis.