SYNTHESIS OF AG AND CUNI NANOPARTICLES AND THEIR CHARACTERIZATION

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Abstract

Ag nanoparticles were synthetized by a one-pot thermolysis approach in acetonitrile using silver nitrate and dodecylamine as precursors. The silver nitrate and the dodecylamine formed a complex precursor, which was decomposed at higher temperature. The silver nanoparticles were released into the solution that reveals a blue metallic color. The dodecylamine acts as a reductant of the precursor and also as a cover of the silver nanoparticles. The CuNi nanoalloy was synthesized also by the way of the one-pot thermolysis under inert nitrogen atmosphere using acetylacetonates of copper and nickel as precursors. The precursors were dissolved by oleylamine. The solution was transferred into mixed solvent of oleylamine and 1-octadecene. The reaction mixture was heat up and the precursors reduced. The dispersion of the CuNi nanoalloy was formed. The both nano-products were characterized by means of SEM, TEM, DSC and XRD methods.

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Keywords: nanosilver, synthesis, characterization, nanoalloy, nickel, copper

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