

Nanoparticle Composition And Methods Of Making The Same

Abstract

A method of fabricating copper nanoparticles includes heating a copper salt solution that includes a copper salt, an N,N'-dialkylethylenediamine, and a C6-C18 alkylamine in an organic solvent to a temperature between about 30°C to about 50°C; heating a reducing agent solution that includes a reducing agent, an N,N'-dialkylethylenediamine, and a C6-C18 alkylamine in an organic solvent to a temperature between about 30°C to about 50°C; and adding the heated copper salt solution to the heated reducing agent solution, thereby producing copper nanoparticles. A composition includes copper nanoparticles, a C6-C18 alkylamine and an N,N'-dialkylethylenediamine ligand. Such copper nanoparticles in this composition have a fusion temperature between about 100°C to about 200°C. A surfactant system for the stabilizing copper nanoparticles includes an N,N'-dialkylethylenediamine and a C6-C18 alkylamine.

Fig. 1