

Bulk synthesis of nano and micro-sized copper particles by green chemical reduction method

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Abstract

Bulk copper nano- and micro-particles have been synthesized under green chemical reduction method. Besides the function of capping agent, polyvinyl pyrrolidone (PVP) shows a capability of sized controlled agent for nano and micro-sized copper synthesis using copper metal and ascorbic acid as a copper source and reducing agent, respectively. The morphologies of synthesized copper particles were characterized by scanning electron microscope. The SEM photographs show various shapes and sizes of copper particle in the range of 0.2 – 5 μm . It was found that the mean diameter of Cu particles decreased when increasing PVP concentration. Herein, we have successfully synthesis bulk copper nano- and micro-particles under the green chemistry condition with a simple and low cost.

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