

Hydrazine free synthesis of Cu nanostructures: Exploring vitamin-C as environmental benign reducing agent to synthesize Cu nanowires

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Among the other syntheses procedures, Cu nanowires synthesized using hydrazine as reducing agent and ethylene diamine (EDA) as shape directing agent are well established for the fabrication of transparent conducting electrodes and for the large scale production. In this article, we explore the synthesis Cu nanowires by above method without using hydrazine, a highly toxic chemical reagent. Our investigation shows that vitamin-C (L-ascorbic acid) can be used as efficient alternative to hydrazine to produce Cu nanowires. Varying the EDA/Cu molar ratio resulted Cu nanowires and micron size flower like dendritic structures of copper.

Keywords: Cu nanowires, EDA, hydrazine, ascorbic acid, vitamin-C, green procedure.