

Abstract Details

Title: Optical Properties and Synthesis of CuO Nanoparticles by Co-Precipitation Method

Author: Rajesh Kumar, Ashwani Sharma, Nawal Kishore

Abstract: In the development of nano size materials of metal and metal oxides nanoparticles are intensively pursued because of their important properties in different fields of applications in science and technology. In all the transition metal oxides, CuO is a potential material for anti-bacterial product, magnetic storage devices, solar energy transfer, sensors, and super capacitors and especially it acts as a good catalyst in some of the chemical reactions. CuO Nano particles are prepared by novel co-precipitation technique. In this technique $\text{CuCl}_2 \cdot 6\text{H}_2\text{O}$ is added with deionised water with ammonia solution as precipitating agent with continuous stirring. Control the pH of solution, ammonia is added to the solution till pH reaches desired value. The color of the solution changed from blue to black with precipitation. The black precipitation was washed 3-4 times with distill water and ethanol. Finally it was filtered and dried in air for one day. The CuO Nano particles were characterized for the studying of their structure and composition from X-ray diffraction, FTIR Spectroscopy for the morphology test SEM and TEM carried out.

Keywords: CuO Nano-particles, Co-precipitation method, Novel applications.