**Abstract**

In the present work, a systematic study has been carried out to understand the influence of Ag doping on the structural and optical properties of CdS nanoparticles. CdS and Ag doped CdS nanoparticle have been prepared by chemical method. The X-ray diffraction method analysis reveals that both undoped and Ag doped CdS nanoparticle exhibit hexagonal structure. The surface morphology of CdS and Ag doped CdS nanoparticle have been studied using scanning electron microscope (SEM). The optical absorption spectra of Ag doped CdS nanoparticles also exhibit red shift with respect to that of CdS nanoparticle.