

Wurtzite ZnSe quantum dots: synthesis, characterization and PL properties

ABSTRACT

A facile method for synthesis of monodispersed, starch-capped ZnSe nanoparticles at room temperature is being reported. The nanoparticles exhibited strong quantum confinement effect with respect to the bulk ZnSe. The transmission electron microscopy image indicated that the particles were well dispersed and spherical in shape. The X-ray diffraction analysis showed that the ZnSe nanoparticles were of the wurtzite structure, with average particle diameter of about 3.6 nm. The Fourier transform infrared spectrum confirmed the presence of starch as passivating agent.

Keyword: ZnSe nanoparticles; Starch; Starch-capped; Quantum confinement effects