

Structural and Magnetic Properties of Undoped and Ni Doped CdZnS

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Abstract : In this study, CdZnS and Ni-doped CdZnS quantum dots(QDs) were prepared by the wet-chemical method at room temperature using mercaptoethanol as a capping agent. The structural and magnetic properties of the CdZnS and CdZnS doped with different concentrations of Ni QDs were examined by XRD and magnetic susceptibility measurements, respectively. The average particles size of cubic QDs obtained by full-width half maxima (FWHM) analysis, increases with increasing doping concentrations. The investigation of the magnetic properties showed that the Ni-doped samples exhibit signs of ferromagnetism, on the other hand, un-doped CdZnS is diamagnetic.

Keywords : un-doped and Ni doped CdZnS Quantum Dots (QDs), co-precipitation method, structural and optical properties of QDs, diluted magnetic semiconductor materials (DMSMs)

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