

OPTICAL PROPERTIES OF CDS AND CDS/ZNS QUANTUM DOTS SYNTHESIZED BY REVERSE MICELLE METHOD", IOPELECTRONIC JOURNAL, JOURNAL OF PHYSICS

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TÓM TẮT:

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In this work, we report on the colloidal preparation (here reverse micelle method) and optical properties of CdS and CdS passivated by ZnS shell (CdS/ZnS) semiconductor nanocrystals quantum dots. The CdS quantum dots were produced ranging from about 2.5 to 3.6 nm in diameter depending on the concentration of surfactant agent. The absorption spectra of CdS QDs show the narrow size distribution. The photoluminescence spectra include two bands, the intrinsic emission of CdS nanocrystals and the emission of surface states. There is noticeable increase of the photoluminescence emission intensity and subsequent photostability in CdS/ZnS quantum dots samples compared with CdS quantum dots samples without the ZnS shell.