

Photoluminescence Properties of CdSe Quantum Dots

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Abstract:

In this report, we study the photoluminescence properties of CdSe quantum dots. The dispersed nanoparticles under study have a diameter of 3.4nm and a bandgap of 2.23eV which is much higher than that of their bulk. The measured photoluminescence has a maximum intensity at 525nm and a full width at half-maximum of 9.5nm. The quantum yield of such quantum was calculated using the relative quantum yield method and found to be around 95% well within the expected range. The ability of quantum dots to produce high photoluminescence quantum yield along with a narrow emission band is essential for a variety of applications.

Keywords: Quantum Dots, Quantum Yield, Photoluminescence.