

Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

In-situ process for synthesis of monodispersed semiconducting nanoparticle in polyelectrolyte matrix VIVEK MAHESHWARI, RAVI SARAF
— The properties of Nanoparticles (NP) are influenced by their interaction with the surroundings. These interactions can result in enhancement or quenching of the luminescence from nanoparticles. We present a simple method for synthesis of Cadmium sulfide (CdS) nanoparticles in a polyelectrolyte (PE) matrix at room temperature. The final product is 100 micron PE particles embedded with CdS nanoparticles. Absorption studies indicate a uniform size of 3-4nm for CdS NP. This allows a single step assembly of NP/PE into a layered structure from the solution, atomic force microscopy studies of assembled layers will be presented. Also presented will be the electroluminescence properties of films prepared from these composite particles and optical studies of the colloid solution. A 430% increase in photoluminescence is observed from the composite in comparison to the nascent particles extracted from the same.

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Date submitted: 04 Dec 2004

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