


Optical study of CdS- and ZnS-passivated CdSe nanocrystals in gelatin films

A E Raevskaya *et al* 2007 *J. Phys.: Condens. Matter* **19** 386237 (9pp) doi: [10.1088/0953-8984/19/38/386237](https://doi.org/10.1088/0953-8984/19/38/386237) 

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Abstract. CdSe nanocrystals were synthesized in aqueous solutions using gelatin as a stabilizer. An appreciable improvement of photoluminescence efficiency of nanocrystal-containing polymeric films was achieved by passivation of as-formed nanocrystals in solutions with CdS and ZnS. The passivation-induced variation of the photoluminescence efficiency and its maximum position was found to be dependent on the total volume of the passivating material and the sequence of the reagents involved. The photoluminescence of both unpassivated and passivated nanocrystals was noticeably (~200 meV) red-shifted from the first absorption maxima. A possible origin of the emission observed is discussed.

Print publication: Issue 38 (26 September 2007)

Received 12 February 2007, in final form 24 May 2007

Published 6 September 2007