

SYNTHESIS AND CHARACTERIZATION OF CdSe COLLOIDAL QUANTUM DOTS IN ORGANIC SOLVENT

Ion Geru^{a*}, Olga Bordian^{a,b}, Constantin Loshmansky^c, Ion Culeac^{a,b}, Constantin Turta^a

^a*Institute of Chemistry of Academy of Sciences of Moldova, 3, Academiei str., Chisinau MD 2028, Republic of Moldova*

^b*Institute of Applied Physics of Academy of Sciences of Moldova, 5, Academiei str., Chisinau MD 2028, Republic of Moldova*

^c*University of the Academy of Sciences of Moldova, 3/2, Academiei str., Chisinau MD 2028, Republic of Moldova*

*e-mail: iongeru11@gmail.com

Abstract. In this paper we present experimental results on preparation and characterization of colloidal CdSe quantum dots in organic solvent. CdSe QDs were synthesized following a modified literature method. CdSe QDs were isolated by adding acetone to the cooled solution followed by centrifugation. CdSe QDs have been characterized by UV-Vis absorption and photoluminescent (PL) spectroscopy. The average CdSe particles size estimated from the UV-Vis absorption spectra was found to be in the range 2.28-2.92 nm which is in good agreement with PL measurements.

Keywords: colloidal quantum dots, semiconductor, cadmium selenide, nanocrystals, photoluminescence.