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Spin polarization of doped II-VI nanocrystals SAVAS DELIKANLI, WILLIAM FALLS, MESUT YASAR, ATHOS PETROU, HAO ZENG, Department of Physics, University at Buffalo-SUNY — The photoluminescence of Mn²⁺ doped CdSe nanoparticles synthesized by solution phase method has been studied as a function of nanocrystal size and the circular polarization of the light emitted from Cd_{1-x}Mn_xSe nanoparticles has been investigated as a function of applied magnetic field in the 7-100 K temperature range. Spin polarized photoluminescence emission from Cd_{1-x}Mn_xSe was observed and strongly depends on the growth time of the nanoparticles. They show negatively spin polarized photoluminescence emission and the behavior of spin polarization strongly depends on the applied field. Spin polarization initially saturates between 1-3 Tesla and shows an unexpected linear increase beyond 3 Tesla. Magnetization of Cd_{1-x}Mn_xSe nanoparticles shows mostly paramagnetic behavior with some hysteresis at low temperatures.

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