

FORMATION OF NANO-STRUCTURED
CdSe COMPOSITES IN POROUS SiO_x LAYERS

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S u m m a r y

A possibility to fabricate nanocomposite structures using various techniques—in particular, the implantation of CdSe nanoparticles into a por-SiO_x matrix and the formation of CdSe nanoparticles in a por-SiO_x matrix as a result of the chemical deposition—has been studied. The deposition of CdSe nanoparticles was shown to result in the formation of several fractions of nanoparticles in the porous near-surface layer Si-SiO_x, with nanoparticle dimensions being about 1.2 and 2.5 nm for their deposition from a colloid solution, and about 1.9 and 2.3 nm at the chemical deposition. The properties of nano-structured composites obtained by those two methods are found to be controllable by varying the regimes of additional treatments and the time of nanoparticle synthesis, respectively.