

CADMIUM SULFIDE–POROUS SILICON NANOCOMPOSITE STRUCTURES

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S u m m a r y

Optimum conditions for the formation of cadmium sulfide nanoparticles in a porous silicon matrix have been determined. The mechanisms of charge transfer in the formed heterostructures and their dependences on the porous layer properties and conditions of CdS nanoparticle synthesis have been studied. The spectral distribution and the intensity of photoluminescence are demonstrated to be governed by the concentration and the size of synthesized CdS nanocrystallites, as well as the efficiency of radiation recombination at deep centers bound with defects.