10

Effect of Fe_3O_4 nanoparticle concentration on the luminescence of $AgInS_2/ZnS$ in hybrid complex $CaCO_3-Fe_3O_4@AgInS_2/ZnS$*

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In this paper, we studied the properties of a multifunctional system, in which the luminescent and magnetic properties are combined. The calcium carbonate microspheres are used as porous matrices for complexes combining luminescence properties of $AgInS_2/ZnS$ quantum dots and magnetic properties of Fe_3O_4 nanoparticles. The study investigates the effect of magnetic nanoparticles concentration on optical properties of quantum dots in $CaCO_3-Fe_3O_4@AgInS_2/ZnS$ complexes. It is shown that applying calcium carbonate microspheres as a matrix permits to reduce quenching of the quantum dots luminescence.

Keywords: hybrid system; ternary quantum dots; magnetic nanoparticles; iron oxide; calcium carbonate microspheres.

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