Photo- and cathodoluminescence properties of $Lu_2O_3:Tb^{3+}$ nanocrystallites embedded in TiO_2 films on silicon and quartz substrates.

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The sol–gel derived synthesis of TiO_2 films doped with $Lu_2O_3:Tb^{3+}$ nanocrystallites and deposited on quartz or silicon substrates has been described. Their morphology have been determined by the SEM techniques. The transmission, photoluminescence and cathodoluminescence spectra have been measured. The emission decays have been measured and lifetimes for starting nanocrystalline powders and embedded nanocrystallites have been determinated. A strong influence of TiO_2 matrix on the emission properties of embedded $Lu_2O_3:Tb^{3+}$ nanocrystallites was found.

Słowa kluczowe

Nanocomposite, Photoluminescence, Cathodoluminescence, Sol–gel, Films

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