Synthesis, optical spectra and radiative properties of Sm_2O_3:PbO:P_2O_5 glass materials.

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Streszczenie

The paper presents the synthesis and spectroscopic properties of $46PbO:53P_2O_5:Ln_2O_3$ glasses, where Ln = Sm or 0.1Sm + 0.9Gd. The glasses show intense luminescence dominated by the orange $^4G_{5/2} \rightarrow {}^6H_{7/2}$ transition. The luminescence branching ratios and quantum yields have been computed using the Judd–Ofelt analysis of relevant absorption spectra and the observed luminescence lifetimes; the maximum found quantum yield was 69%. The lifetimes and the quantum yields depended on the time of heating the samples at high temperature and on the samarium concentration.

Słowa kluczowe

Lead–phosphate glass, Samarium, f–f intensity analysis, Luminescence, Quantum yield

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