

Energy-level calculations for Pr^{3+} in K_2LaBr_5 host. Study of excited state dynamics.Autorzy

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A series of potassium lanthanum praseodymium ternary bromides, $\text{K}_2\text{La}_{1-x}\text{Pr}_x\text{Br}_5$ ($0.02 \leq x \leq 1$) single crystals was grown by the Bridgman technique. The high resolution absorption, luminescence and excitation spectra were measured at 4, 77 and 293 K under different excitation sources, including VUV synchrotron radiation. The Stark components determined from the absorption and emission spectra were simulated by using a phenomenological crystal-field model for $4f^2$ configuration of the Pr^{3+} ion in K_2PrBr_5 . The comparison is made with earlier reported data for Pr^{3+} in K_2PrCl_5 crystal. The decay times of the emission from the $^1\text{D}_2$ and $^3\text{P}_0$ levels were measured and excited states dynamic is analysed.

Słowa kluczowe

Potassium lanthanum ternary bromide, Crystal-field

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