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Optically Active Material Based on Bi_2O_3@Yb^{3+}, Nd^{3+} with High Intensity of Upconversion Luminescence in Red and Green Region

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Abstract : The synthesis and luminescent properties of Yb_2O_3, Nd_2O_3@Bi_2O_3 complex with upconversion generation are discussed in this work. The obtained samples were measured in the visible region of the spectrum under excitation with a wavelength of 980 nm. The studies showed that the obtained complexes have a high degree of stability and intense luminescence in the wavelength range of 400-750 nm. Consideration of the time dependence of the intensity of the upconversion luminescence allowed us to conclude that the enhancement of the intensity occurs in the time interval from 5 to 30 min, followed by the appearance of a stationary mode.

Keywords : lasers, luminescence, upconversion photonics, rare earth metals
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