

## Optically Active Material Based on $\text{Bi}_2\text{O}_3@Yb^{3+}$ , $\text{Nd}^{3+}$ with High Intensity of Upconversion Luminescence in Red and Green Region

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**Abstract :** The synthesis and luminescent properties of  $\text{Yb}_2\text{O}_3$ ,  $\text{Nd}_2\text{O}_3@Bi_2O_3$  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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