

Luminescence of $\text{Bi}_3\text{TeBO}_9\text{:Yb}^{3+}$ phosphors

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Investigated series of $\text{Bi}_3\text{TeBO}_9\text{:Yb}^{3+}$ μ -crystalline powders are bifunctional materials, exhibiting nonlinear optical properties of Bi_3TeBO_9 matrix [1] and effective luminescence of active Bi^{3+} and Yb^{3+} ions. $\text{Bi}_3\text{TeBO}_9\text{:Yb}^{3+}$ μ -crystalline powders were prepared using modified Pechini method. The hexagonal structure of $P6_3$ space group of Bi_3TeBO_9 μ -crystalline powders was confirmed using XRD measurements [2]. In this paper, we present the results of investigation of luminescence of $\text{Bi}_3\text{TeBO}_9\text{:Yb}^{3+}$ μ -crystalline powders studied by optical spectroscopy methods. The vibrational properties of investigated samples were studied using μ -Raman spectroscopy. The results indicate a potential use of $\text{Bi}_3\text{TeBO}_9\text{:Yb}^{3+}$ as spectral converters in new generation photovoltaic devices.

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