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ABSTRACTS

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tell about the molecular composition of the substance without resorting to additional tools. However, most of the substances that must be investigated, have a dull fluorescence, or do not have it at all. For such cases were synthesized fluorescent probes.

The fluorescent probe binds to the molecule under investigation, and after exciting radiation transmits information about the environment in which it is located. Since the medium in which the fluorophore is located strongly affects the intensity of the fluorophore emission, the decay time of the fluorescence and the maximum of the spectrum, we can understand the composition of the solution by changing these parameters. Depending on which probe was used in the study, data on solution viscosity, temperature and polarity can be obtained.

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Y-16

INVESTIGATION OF SHG IN NEW SCANDIUM BORATE WITH THREE CATIONS BY THE KURTZ-PERRY METHOD

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Nowadays, lasers are widely used in various technologies from medicine to space. This has created constantly growing needs to improve the efficiency of laser systems, increase their power, and expand their spectral ranges of generation. The development of new materials for converting laser radiation using methods of nonlinear crystal optics is an urgent problem, as well as the study of their optical properties. Much interest is being directed towards the study of oxide crystals, in particular complex borate crystals. Such crystals, which have been intensively studied in recent years, include huntite-type scandium borate with three cations [1].

This work is dedicated to study the optical properties of scandium borates with the general formula $RE_xPr_ySc_{2+z}(BO_3)_4$ ($x + y + z = 2$, RE = Nd, Sm, Tb, Tm, Yb), grown by the TSSG method. The structure, absorption and luminescence of these crystals have been investigated. The efficiency of second harmonic generation (SHG) of a nanosecond Nd:YAG laser radiation (1064 nm, 6 ns) was studied using the Kurtz-Perry powder technique [2]. The effective nonlinear optical coefficient is estimated at $d_{eff} = 0.34, 0.74, 0.82, 0.85, 0.84$ pm/V for R = Nd, Sm, Tb, Tm and Yb respectively. The influence of the composition and linear optical properties on the efficiency of SHG has been discussed.

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1. Kokh A.E., Kuznetsov A.B., Pstryakov et. al. // Cryst. Res. Tech. 2017. V. 52, No. 8. 160037.
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Y-17

INDUCED ABSORPTION SPECTRA OF CRYSTAL VIOLET IN VARIOUS SOLVENTS

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The study of the triplet triplet absorption capacity of crystal violet (CV) in various solvents was carried out by the pump probe method. Water, dimethyl sulfoxide, isopropyl alcohol and ethyl alcohol were selected as solvents. The formation of triplet states in various CV solvents was revealed upon excitation by nanosecond radiation of the 4th and 3rd harmonics of a Nd:YAG laser