






Spectral and non-linear optical properties of cyanine bases' derivatives of benzo[*c,d*]indole

O.I. Tolmachev^a, N.V. Pilipchuk^a, O.D. Kachkovsky^a  , Yu.L. Slominski^a, V.Ya. Gayvoronsky^b, E.V. Shepelyavy^b, S.V. Yakunin^b, M.S. Brodyn^b

Show more 

+ Add to Mendeley  Share  Cite

<https://doi.org/10.1016/j.dyepig.2006.01.048>

[Get rights and content](#)

Abstract

The complex investigation of the cyanine bases, containing benzo[*c,d*]indole as residue group was carried out by linear and non-linear optical spectroscopic and quantum-chemical modelling methods. It was found that non-linear optical properties were more sensitive to the nature of the varied donor terminal group than the absorption spectra; the increase of the donor strength in indolenine, benzothiazole, quinoline, and pyridine causes an increase of the second and third hyperpolarizabilities by a factor of 3.5, which is qualitatively in good agreement with the experimental data.