Proton transfer reaction of a new orthohydroxy Schiff base in protic solvents at room temperature.

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Streszczenie

Ground and excited state inter- and intramolecular proton transfer reactions of a new *o*-hydroxy Schiff base, 7-ethylsalicylidenebenzylamine (ESBA) have been investigated by means of absorption, emission and nanosecond spectroscopy in different protic solvents at room temperature and 77 K. The excited state intramolecular proton transfer (ESIPT) is evidenced by a large Stokes shifted emission (~11 000 cm^{-1}) at a selected excited energy in alcoholic solvents. Spectral characteristics obtained reveal that ESBA exists in more than one structural form in most of the protic solvents, both in the ground and excited states. From the nanosecond measurements and quantum yield of fluorescence we have estimated the decay rate constants, which are mainly represented by nonradiative decay rates. At 77 K the fluorescence spectra are found to be contaminated with phosphorescence spectra in glycerol and ethylene glycol. It is shown that the fluorescence intensity and nature of the species present are dependent upon the excitation energy.

Słowa kluczowe

Proton transfer, o-Hydroxy Schiff base, Protic solvents

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