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Solvatochromic Study of Supramolecular Amphiphile Based on Calix[4]arene Connected to a Fluorescent Benzofurazan Moiety at Lower Rim: Evaluation of Ground and Excited State Dipole Moments*

© S. Joshi

Amity School of Applied Sciences, Department of Physics, Amity University,
Rajasthan, Jaipur, India

e-mail : sunita.joshi.2006@gmail.com

Received May 17, 2020

Revised May 17, 2020

Accepted August 27, 2020

Photophysical properties of a supramolecular amphiphile of calix[4]arene having benzofurazan moiety at the lower rim, **L** has been studied. Electronic absorption and fluorescence spectra of **L** have been recorded in wide range of solvents of different polarities and data were used to study solvatochromic properties. The ground state and the excited state dipole moment of **L** were estimated from the Bakhshiev's and Bilot-Kawaski's equations. High value of dipole moment is observed for excited state as compared to ground state value and this is attributed to more polar excited state of molecule. Also, fluorescence emission peak undergoes a bathochromic shift with increase in the polarity of the solvent, confirming $\pi \rightarrow \pi^*$ transition. Scanning electron microscopy reveals that the aggregation of **L** is increased on going from the polar to non polar solvents.

Keywords: solvatochromism, benzofurazan, dipole moment, quantum yield, absorption, fluorescence.

* Полный текст статьи опубликован в „Optics and Spectroscopy“
2020 V. 128. N 12.