

Web of Science

Search

Search Results

My Tools ▾

Search History

Marked List

82 of 723

NCBI

 Look Up Full Text

Save to EndNote online ▾

Add to Marked List

Investigation of Spectroscopic Behaviors of Newly Synthesized (2E)-3-(3,4-Dimethoxyphenyl)-1-(2,5-dimethylthiophen-3-yl)prop-2-en-1-one (DDTP) Dye

By: Asiri, AM (Asiri, Abdullah M.)^[1,2]; Marwani, HM (Marwani, Hadi M.)^[1,2]; Khan, SA (Khan, Salman A.)^[1]; El-Daly, SA (El-Daly, Samy A.)^[1,3]

[View ResearcherID and ORCID](#)

JOURNAL OF FLUORESCENCE

Volume: 23 Issue: 6 Pages: 1271-1278

DOI: 10.1007/s10895-013-1260-4

Published: NOV 2013

[View Journal Impact](#)

Abstract

This study introduced spectroscopic properties, physicochemical parameters, and polarity and photostability behaviors of a newly prepared chalcone dye. The chalcone dye, (2E)-3-(3,4-Dimethoxyphenyl)-1-(2,5-dimethylthiophen-3-yl)prop-2-en-1-one (DDTP), was synthesized by the reaction of 3,4-dimethoxybenzaldehyde with 3-acetyl-2,5-dimethylthiophene. Results of FT-IR, H-1-NMR, C-13-NMR and elemental analysis were in conformity with chemical structure of newly prepared DDTP. Data of thermal gravimetric analysis revealed that DDTP has good thermal stability. Increases in fluorescence intensities of DDTP with cetyltrimethyl ammonium bromide (CTAB) were observed. In comparison of fluorescence intensities for DDTP with CTAB, reductions in fluorescence intensities for DDTP with sodium dodecyl sulphate (SDS) were observed under the same experimental and instrumental conditions. Moreover, Benesi-Hildebrand method was applied to determine stoichiometric ratios and association constants of DDTP with CTAB and SDS. The stoichiometric ratio and association constant obtained from Stern-Volmer plot strongly supported those obtained from Benesi-Hildebrand plot of DDTP with SDS. Physicochemical parameters, such as, singlet absorption, molar absorptivity, oscillator strength, dipole moment and fluorescence quantum yield of DDTP were also estimated. Fluorescence steady-state measurements ultimately displayed that DDTP has a high photostability against photobleaching. Fluorescence polarity study revealed that DDTP was sensitive to the polarity of the microenvironment provided by different solvents.

Keywords

Author Keywords: DDTP; Stoichiometric ratios; Physicochemical parameters; Fluorescence; Photostability

KeyWords Plus: NONLINEAR-OPTICAL PROPERTIES; SOLVENT POLARITY PARAMETER; STATE DIPOLE-MOMENTS; CHALCONE DERIVATIVES; BIS-CHALCONE; FLUORESCENCE; MECHANISM; PRODUCTS

Author Information

Reprint Address: Khan, SA (reprint author)

King Abdulaziz Univ, Dept Chem, Fac Sci, POB 80203, Jeddah 21589, Saudi Arabia.

Organization-Enhanced Name(s)

King Abdulaziz University

Addresses:

[1] King Abdulaziz Univ, Dept Chem, Fac Sci, Jeddah 21589, Saudi Arabia

Organization-Enhanced Name(s)

Citation Network

3 Times Cited

30 Cited References

[View Related Records](#)

 [Create Citation Alert](#)

(data from Web of Science Core Collection)

All Times Cited Counts

3 in All Databases

3 in Web of Science Core Collection

0 in BIOSIS Citation Index

0 in Chinese Science Citation Database

0 in Data Citation Index

0 in Russian Science Citation Index

0 in SciELO Citation Index

Usage Count

Last 180 Days: 0

Since 2013: 3

[Learn more](#)

Most Recent Citation

Zayed, Mohie E. M. [Microwave Assisted Synthesis, Spectrofluorometric Characterization of Azomethine as Intermediate for Transition Metal Complexes with Biological Application](#). JOURNAL OF FLUORESCENCE, MAY 2016.

[View All](#)

This record is from:

Web of Science Core Collection
- Science Citation Index Expanded

Suggest a correction

If you would like to improve the quality of the data in this record, please [suggest a correction](#).

King Abdulaziz University

[-] [2] King Abdulaziz Univ, Ctr Excellence Adv Mat Res CEAMR, Jeddah 21589, Saudi Arabia

Organization-Enhanced Name(s)

King Abdulaziz University

[+] [3] Tanta Univ, Fac Sci, Dept Chem, Tanta, Egypt

E-mail Addresses: sahmad_phd@yahoo.co.in

Publisher

SPRINGER/PLENUM PUBLISHERS, 233 SPRING ST, NEW YORK, NY 10013 USA

Categories / Classification

Research Areas: Biochemistry & Molecular Biology; Chemistry

Web of Science Categories: Biochemical Research Methods; Chemistry, Analytical; Chemistry, Physical

Document Information

Document Type: Article

Language: English

Accession Number: WOS:000325949600018

PubMed ID: 23846302

ISSN: 1053-0509

eISSN: 1573-4994

Journal Information

Table of Contents: [Current Contents Connect](#)

Impact Factor: [Journal Citation Reports](#)

Other Information

IDS Number: 238MB

Cited References in Web of Science Core Collection: 30

Times Cited in Web of Science Core Collection: 3