455
Accession number:WOS:000305473100022
Title:Synthesis, characterization of poly-2-(2-hydroxybenzylideneamino)-6-phenyl-4,5,6,7-tetrahydrobenzo[b]thiophene-3-carbonitrile: Investigation of antibacterial activity and optical properties
Authors:Kaya, E. (1); Turan, N. (2); Gunduz, B. (1); Colak, N. (3); Korkoca, H. (4)
Author affiliation:(1) Univ Mus Alparslan, Sci Educ Program, Fac Educ, TR-49100 Mus, Turkey; (2) Univ Mus Alparslan, Dept Chem, Fac Arts & Sci, TR-49100 Mus, Turkey; (3) Univ Hitit, Dept Chem, Fac Arts & Sci, TR-19000 Corum, Turkey; (4) Univ Mus Alparslan, Dept Nursing, Sch Hlth, TR-49100 Mus, Turkey
Source title:POLYMER ENGINEERING AND SCIENCE
Abbreviated source title:POLYM ENG SCI
Volume:52
Issue:7
Issue date:JUL 2012
Pages:1581-1589
Language:English
ISSN:0032-3888
Document type:Article
Publisher:WILEY-BLACKWELL, 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
Abstract:The oxidative polycondensation reaction conditions of 2-(2-hydroxybenzylideneamino)-6-phenyl-4,5,6,7-tetrahydrobenzo[b]thiophene-3-carbonitrile were examined. The magnitude of the reflectance of the polymer decreases sharply with increasing of wavelength up to 524 nm, then reflectance of the polymer increases slowly with increasing of wavelength. The refractive index values of the polymer vary from 1.474 to 2.350. The Ep and Ed values of the polymer were found to be 4.56 and 7.068 eV, respectively. Absorption coefficient K of the polymer is of the order 817.0621434.77 m-1. Angle values of incidence and refraction of the polymer vary from 57.36 to 66.95 degrees and from 23.05 to 32.65 degrees, respectively. The film-phase thickness of the polymer increases with increasing photon energy. The thickness, d, of the polymer was of the order 439.34184.7 angstrom for 190 and 1100 nm, respectively. The real part of dielectric constant of the polymer decreases slowly with increasing of frequency up to about 600 THz, then the real part of dielectric constant of the polymer increases sharply with increasing of frequency. The real and imaginary parts of dielectric constant of the polymer vary from 2.17 to 5.52 and from 5.81 x 10(-5) to 3.58 x 10(-4), respectively. Finally, polymer was tested for antibacterial activities against some bacteria. POLYM. ENG. SCI., 2012. (C) 2012 Society of Plastics Engineers
Number of references:39
Main heading:Engineering; Polymer Science
DOI:10.1002/pen.23207