Author's Accepted Manuscript

New core-substituted with electron-donating group 1,8-naphthalimides towards optoelectronic applications

Ewa Schab-Balcerzak, Mariola Siwy, Michal Filapek, Slawomir Kula, Grzegorz Malecki, Katarzyna Laba, Mieczyslaw Lapkowski, Henryk Janeczek, Marian Domanski



PII: S0022-2313(15)00216-1 DOI: http://dx.doi.org/10.1016/j.jlumin.2015.04.025 Reference: LUMIN13307

To appear in: Journal of Luminescence

Received date: 13 December 2014 Revised date: 25 March 2015 Accepted date: 22 April 2015

Cite this article as: Ewa Schab-Balcerzak, Mariola Siwy, Michal Filapek, Slawomir Kula, Grzegorz Malecki, Katarzyna Laba, Mieczyslaw Lapkowski, Henryk Janeczek and Marian Domanski, New core-substituted with electron-donating group 1,8-naphthalimides towards optoelectronic applications, *Journal of Luminescence*, http://dx.doi.org/10.1016/j.jlumin.2015.04.025

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

ACCEPTED MANUSCRIPT

New core-substituted with electron-donating group 1,8-naphthalimides towards optoelectronic applications

Ewa Schab-Balcerzak^{1,2*}, Mariola Siwy¹, Michal Filapek², Slawomir Kula², Grzegorz Malecki², Katarzyna Laba^{1,3}, Mieczyslaw Lapkowski^{1,3}, Henryk Janeczek¹, Marian Domanski¹

¹Centre of Polymer and Carbon Materials, Polish Academy of Sciences,

34 M. Curie-Sklodowska Str., 41-819 Zabrze, Poland

²Institute of Chemistry, University of Silesia, 9 Szkolna Str., 40-006 Katowice, Poland ³Faculty of Chemistry, Silesian University of Technology, 9 Strzody Str., 44-100 Gliwice,

Poland

Abstract: New 1,8-naphthalimides with thiophene or bithiophene structure attached by a imine linkage to naphthalene core were synthesized. The structures of obtained compounds were characterized by FTIR, ¹H NMR spectroscopy, elemental analysis and for elected compounds by HRMS (ESI) spectrometry. Thermal, optical and electrochemical properties of obtained 1,8-naphthalimides were investigated. Most of them exhibited glass-forming properties with glass transition temperatures in the range of 73–278 °C. Optical properties of the prepared compounds were examined by UV–Vis and photoluminescence (PL) measurements. They emitted light in chloroform solution with emission maximum at ca. 500 nm with the highest quantum yield of fluorescence around 0.46 and green one in NMP solution. In blend with PMMA blue emission was observed with the

*corresponding author. Tel.:+48 32 2716077; fax: +48 32 2712969. E-mail address: eschab-balcerzak@cmpw-pan.edu.pl; ewa.schab-balcerzak@us.edu.pl Download English Version:

https://daneshyari.com/en/article/5398714

Download Persian Version:

https://daneshyari.com/article/5398714

Daneshyari.com