

Accepted Manuscript

New [4]helicene derivatives: Synthesis, characterization and photophysical properties

Nesrine Hafedh, Faouzi Aloui, Sondes Raouafi, Vincent Dorcet, Béchir Ben Hassine



PII: S0167-7322(17)35905-6
DOI: doi:[10.1016/j.molliq.2018.04.083](https://doi.org/10.1016/j.molliq.2018.04.083)
Reference: MOLLIQ 8986
To appear in: *Journal of Molecular Liquids*
Received date: 9 December 2017
Revised date: 13 April 2018
Accepted date: 16 April 2018

Please cite this article as: Nesrine Hafedh, Faouzi Aloui, Sondes Raouafi, Vincent Dorcet, Béchir Ben Hassine , New [4]helicene derivatives: Synthesis, characterization and photophysical properties. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Molliq(2017), doi:[10.1016/j.molliq.2018.04.083](https://doi.org/10.1016/j.molliq.2018.04.083)

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 proof before it is published in its final 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.

New [4]helicene derivatives : Synthesis, characterization and photophysical properties

Nesrine Hafedh^a, Faouzi Aloui^{a,*}, Sondes Raouafi^a, Vincent Dorcet^b, Béchir Ben Hassine^a

^aUniversity of Monastir, Laboratory of Asymmetric Organic Synthesis and Homogenous Catalysis (UR11ES56), Faculty of Sciences, Avenue of Environment, 5019 Monastir, Tunisia.

^bInstitut des Sciences Chimiques de Rennes, UMR 6226, Campus de Beaulieu 263, CNRS-Université de Rennes 1, 35042 Rennes Cedex, France.

* Corresponding author: Tel.: 0021673500279, fax: 0021673500278, e-mail address: aloui.faouzi@laposte.net

ABSTRACT

The design and synthesis of new [4]helicene derivatives were carried out by incorporating well-defined electron donor and acceptor groups at selected positions of the aromatic nuclei, aiming to use them in optical applications. Helicenes have been obtained in good overall yields through a five-step sequence involving mild experimental conditions and easy purification. Photophysical properties of these tetracyclic systems have been evaluated by UV-visible absorption and fluorescence spectroscopies and an emission in the visible region was observed.

Keywords: Helicenes; Photolysis; Cyclization; Photooxidation; Optical properties.

1. Introduction

Polycyclic aromatic hydrocarbons (PAHs) represent an important class of organic compounds which have two or more fused benzene rings. These compounds have received considerable attention due to their fascinating chemistry [1] and unique physical properties [2-3].

Owing to their specific structure and photoelectric properties, polycyclic aromatic hydrocarbons (PAHs) have led also to applications in electronic devices. They have proven to be one of the most important semiconductors [4-7]. Acenes, for example, represent highly attractive compounds with good performance as semiconductors and good emission properties, and they have been widely used in various fields, such as inorganic field-effect transistors [8-9], organic light-emitting diodes (OLEDs) [10] and organic photovoltaics [11-12].

Download English Version:

<https://daneshyari.com/en/article/7842357>

Download Persian Version:

<https://daneshyari.com/article/7842357>

[Daneshyari.com](https://daneshyari.com)