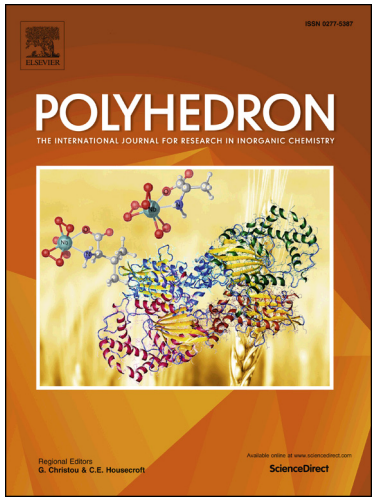


Enhancement of the photovoltaic performance in D_3A porphyrin-based DSCs by incorporating an electron withdrawing triazole spacer

Vasilis Nikolaou, Asterios Charisiadis, Sofia Chalkiadaki, Ioannis Alexandropoulos, Sourava C. Pradhan, Suraj Soman, Manas K. Panda, Athanassios G. Coutsolelos

PII: S0277-5387(17)30601-0
DOI: https://doi.org/10.1016/j.poly.2017.09.024
Reference: POLY 12834

To appear in: *Polyhedron*

Received Date: 17 August 2017
Revised Date: 13 September 2017
Accepted Date: 14 September 2017

Please cite this article as: V. Nikolaou, A. Charisiadis, S. Chalkiadaki, I. Alexandropoulos, S.C. Pradhan, S. Soman, M.K. Panda, A.G. Coutsolelos, Enhancement of the photovoltaic performance in D_3A porphyrin-based DSCs by incorporating an electron withdrawing triazole spacer, *Polyhedron* (2017), doi: https://doi.org/10.1016/j.poly.2017.09.024

Graphical Abstract (TOC)

To create your abstract, type over the instructions in the template box below.
Fonts or abstract dimensions should not be changed or altered.

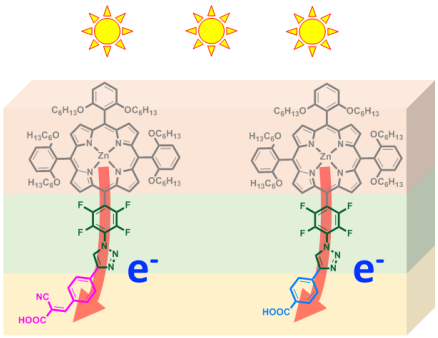
Enhancement of the photovoltaic performance in D_3A porphyrin-based DSCs by incorporating an electron withdrawing triazole spacer.

Leave this area blank for abstract info.

Vasilis Nikolaou,[a,‡] Asterios Charisiadis,[a,‡] Sofia Chalkiadaki,[a] Ioannis Alexandropoulos,[a] Sourava C. Pradhan,[b] Suraj Soman,[b,c,d,*] Manas K. Panda[b,c,*] and Athanassios G. Coutsolelos[a,*]

[a] *Department of Chemistry, University of Crete, Laboratory of Bioinorganic Chemistry, Voutes Campus, P.O. Box 2208, 70013 Heraklion, Crete, Greece.*
[b] *Photosciences & Photonics Section, Chemical Sciences & Technology Division, CSIR-National Institute for Interdisciplinary Science and Technology, Thiruvananthapuram, Kerala-695 019, India.*
[c] *Academy of Scientific and Innovative Research (AcSIR), New Delhi 110025, India.*
[d] *CSIR-Network of Institutes for Solar Energy (CSIR-NISE), India.*

∗ Corresponding author Tel.: +302810545045; fax: +302810545161; e-mail: coutsole@uoc.gr
∗ Corresponding author. Tel.: +91-471-253-5608; e-mail: manas.panda@niist.res.in
∗ Corresponding author. Tel.: +91-471-251-5436; e-mail: suraj@niist.res.in
‡ These authors have equally contributed.



Two novel zinc-porphyrin derivatives (**ZnP-3DoH-click-CNCOOH** and **ZnP-3DoH-click-COOH**) bearing an electron withdrawing spacer was incorporated between the porphyrin ring and each anchoring group, have been studied as sensitizers in DSCs. Following this strategy four-fold and eight-fold increase of the device performance was observed compared to their reference complexes (**ZnP-3DoH-COOH** and **ZnP-3DoH-CNCOOH**).