



Star-shaped conjugated systems derived from dithiafulvenyl-derivatized triphenylamines as active materials for organic solar cells

Submitted by Emmanuel Lemoine on Tue, 02/04/2014 - 16:12

Titre	Star-shaped conjugated systems derived from dithiafulvenyl-derivatized triphenylamines as active materials for organic solar cells
Type de publication	Article de revue
Auteur	Alévêque, Olivier [1], Leriche, Philippe [2], Cocherel, Nicolas [3], Frère, Pierre [4], Cravino, Antonio [5], Roncali, Jean [6]
Editeur	Elsevier
Type	Article scientifique dans une revue à comité de lecture
Année	2008
Langue	Anglais
Date	2008/09
Numéro	9
Pagination	1170 - 1174
Volume	92
Titre de la revue	Solar Energy Materials and Solar Cells
ISSN	0927-0248
Mots-clés	Solar cells [7], Star-shaped Systems [8], Tetrathiafulvalene [9], Triphenylamine [10]
Résumé en anglais	Hybrid conjugated systems consisting of a triphenylamine core substituted by three dithiafulvenyl moieties have been synthesized and tested as active materials in organic field-effect transistors and photovoltaic devices. UV-vis. spectroscopy studies demonstrate that, despite their amorphous character shown by X-ray diffraction and differential scanning calorimetry, strong interactions exist in these materials as an aggregative band is observed at low energies. A first evaluation of their potentialities as p semiconductor in organic field-effect transistors shows significant hole mobilities. For bilayer photovoltaic devices, a power conversion efficiency of 0.11% is observed and the external quantum efficiency of the cell under monochromatic irradiation shows a non-negligible contribution of the aggregative band.
URL de la notice	http://okina.univ-angers.fr/publications/ua1918 [11]
DOI	10.1016/j.solmat.2008.04.006 [12]
Lien vers le document	http://dx.doi.org/10.1016/j.solmat.2008.04.006 [12]

Liens

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