

New fullerene derivatives for the photovoltaic application

Submitted by Pietrick Hudhomme on Fri, 04/24/2015 - 22:50

Titre	New fullerene derivatives for the photovoltaic application
Type de publication	Article de revue
Auteur	Derbal-Habak, Hassina [1], Bergeret, C�line [2], Cousseau, Jack [3], Simon, Jean-Jacques [4], Escoubas, L. [5], Nunzi, Jean-Michel [6]
Pays	Etats-Unis
Editeur	Society of Photo-Optical Instrumentation Engineers
Ville	Bellingham
Type	Article scientifique dans une revue � comit� de lecture
Ann�e	2011
Langue	Anglais
Date	Jan. 2011
Num�ro	1
Pagination	011120-011120-7
Volume	1
Titre de la revue	Journal of Photonics for Energy
ISSN	1947-7988
Mots-cl�s	conversion rate [7], current density [8], fill factor [9], fullerene compounds [10], fullerenes [11], Heterojunction [12], open circuit voltage [13], Optoelectronic device [14], photovoltaic system [15], plastics [16], quantum yield [17], Solar cells [18], thiophene derivative polymer [19]
R�sum� en anglais	Cyclopropano[70]fullerenes have been synthesized in the aim of being used as acceptors in blends based on regioregular poly (3,5-Hexylthiophene) RR-P3HT for photovoltaic (PV) plastic cells. These molecules used with RR-P3HT in bulk heterojunction (BHJ) configuration provided interesting characteristics: 1.5% solar conversion efficiency, 9.29 mA/cm ² current density, 0.51 V open circuit voltage, and 0.34 fill factor. The IPCE spectrum for P3HT: cyclopropano[70]fullerene cells shows a peak around 430 nm with 71% external quantum efficiency. This result justifies the increased current density.
URL de la notice	http://okina.univ-angers.fr/publications/ua10332 [20]
DOI	10.1117/1.3576907 [21]
Lien vers le document	http://dx.doi.org/10.1117/1.3576907 [21]
Titre abr�g�	J. Photon. Energy

Liens

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- [21] <http://dx.doi.org/10.1117/1.3576907>

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