



Single Material Solar Cells: the Next Frontier for Organic Photovoltaics?

Submitted by Emmanuel Lemoine on Thu, 02/06/2014 - 11:25

Titre Single Material Solar Cells: the Next Frontier for Organic Photovoltaics?
Type de publication Article de revue
Auteur Roncali, Jean [1]
Editeur Wiley
Type Article scientifique dans une revue à comité de lecture
Année 2011
Langue Anglais
Date 03/2011
Numéro 2
Pagination 147-160
Volume 1
Titre de la revue Advanced Energy Materials
ISSN 1614-6832

Résumé en anglais

An overview of various approaches for the realization of single-material organic solar cells (SMOCs) is presented. Fullerene-conjugated systems dyads, di-block copolymers, and self-organized donor-acceptor molecules all represent different possible approaches towards SMOCs. Although each of them presents specific advantages and poses specific problems of design and synthesis, these different routes have witnessed significant progress in the past few years and SMOCs with efficiencies in the range of 1.50% have been realized. These performances are already higher than those of bi-component bulk heterojunction solar cells some ten years ago, demonstrating that SMOCs can represent a credible approach towards efficient and simple organic solar cells. Possible directions for future research are discussed with the aim of stimulating further research on this exciting topic.

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DOI 10.1002/aenm.201000008 [3]

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[3] <http://dx.doi.org/10.1002/aenm.201000008>

Publié sur *Okina* (<http://okina.univ-angers.fr>)