



Tuning of the Photovoltaic Parameters of Molecular Donors by Covalent Bridging

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Auteur	Demeter, Dora [1], Jeux, Victorien [2], Leriche, Philippe [3], Blanchard, Philippe [4], Olivier, Yoann [5], Cornil, Jérôme [6], Po, Riccardo [7], Roncali, Jean [8]
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Mots-clés	conjugated systems [9], molecular donors [10], Organic solar cells [11], rigidification [12]
Résumé en anglais	<p>The synthesis of donor-acceptor molecules involving triarylamine and dicyanovinyl blocks is described. Optical and electrochemical results show that rigidification of the acceptor part of the molecule by a covalent bridge leads to a ca. 0.20 eV increase of the band gap due to a parallel increase of the lowest unoccupied molecular orbital level. A preliminary evaluation of these compounds as donor materials in organic solar cells shows that although this structural modification reduces the light-harvesting properties of the donor molecule, it nevertheless induces an increase of the efficiency of the resulting solar cells due to a simultaneous improvement of the open-circuit voltage and fill factor.</p>
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Liens

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