Synthesis, Characterization, Morphology and Photovoltaic Properties of Aniline-Tiophene Based Polymers

Titre	Synthesis, Characterization, Morphology and Photovoltaic Properties of Aniline-Tiophene Based Polymers
Type de publication	Article de revue
Auteur	Zamora, P. P. [1], Camarada, M B [2], Jessop, I [3], Diaz, F.-R. [4], del Valle, M.-A. [5], Cattin, Linda [6], Louarn, Guy [7], Bernède, Jean Christian [8]
Editeur	Electrochemical Science Group
Type	Article scientifique dans une revue à comité de lecture
Année	2012
Langue	Anglais
Pagination	8276 - 8287
Volume	7
Titre de la revue	International Journal of electrochemical science
Mots-clés	conducting polymers [9], electrochemistry [10], Morphology [11], photovoltaic yield [12], XRD [13]
Résumé en anglais	Monomers composed of thiophene and aniline rings, 4-(2-thiophen)aniline and 4-(3-thiophen)aniline, were successfully synthetized through the Suzuki-Miyaura cross coupling reaction and then polymerized. The polymers poly 4-(2-tiophen)aniline and poly 4-(3-tiophen)aniline (P4,2TA and P4,3TA) were characterized via spectroscopycal NMR, optical and electrochemical methodologies. Subsequently the morphology of deposits were characterized using atomic force microscopy (AFM) and X-ray diffraction (XRD). The photovoltaic devices were constructed under the same conditions, observing differences in the photovoltaic yield of each polymer. P4,2TA exhibited higher photovoltaic yield in comparison with P4,3TA, indicating that the molecular geometry affects the crystallinity and surface morphology of the polymeric deposits, and the photovoltaic properties
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Lien vers le document	http://www.electrochemsci.org/papers/vol7/7098276.pdf [15]

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