

Electrogenerated Low Band Gap Polymers Based on the 3-Cyano-4-methoxythiophene Building Block

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R�sum� en anglais	<p>Two position isomers precursors involving 3-cyano-4-methoxythiophene and EDOT (2, 3) have been synthesized. UV-vis and electrochemical data show that the relative position of the methoxy and cyano groups in the structure has dramatic consequences for the reactivity of the precursor and thus for the structure of the resulting polymer. Introduction of the cyano group at the outer β-position of thiophene deactivates the neighboring coupling site, thus leading to the electrodeposition of a material with limited conjugation length. In contrast, when grafted at the inner β-position, the cyano group exerts a stronger effect on the energy gap while the presence of the external methoxy group leads to the straightforward electrodeposition of a low band gap polymer with broad absorption band.</p>
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