Synthesis via direct (hetero)arylation polymerization, electrochemical and optical properties of poly (3,4-disubstituted)thiophenes

Titre	Synthesis via direct (hetero)arylation polymerization, electrochemical and optical properties of poly (3,4-disubstituted)thiophenes
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Résumé en anglais	Some poly (3,4-disubstituted)thiophenes bearing both cyano and alkoxy or thioalkoxy groups have been synthesized by direct (hetero)arylation polymerization (DHAP) of 2-iodo-3,4-disubstituted thiophenes. The electron donor and acceptor properties of substituents in positions 3 and 4 allow to adjust the HOMO and LUMO levels. On the other hand, in order to avoid the polymer solubility problems, long branched or unbranched alkyl chains have also been introduced. Thus polymers with alkoxy groups have led to complete absorption in the wavelength range of the visible spectrum whereas in the presence of thioalkoxy groups, the absorption of the visible spectrum is only partial. Theoretical calculations have shown that sulphur creates torsions leading to a non-planar polymer chain.
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Liens

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[6] http://okina.univ-angers.fr/publications/ua20322
[7] http://dx.doi.org/10.1016/j.polymer.2019.121811
[8] https://www.sciencedirect.com/science/article/pii/S0032386119308171?via%3Dihub