Production of Nanostructured Conjugated Polymers by Electropolymerization of Tailored Tetrahedral Precursors

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Résumé en anglais	3D conjugated architectures based on twisted quaterthiophene (4T) or spirobifluorene (SF) cores with 3,4-ethylenedioxythiophene (EDOT) or 3-methoxythiophene (MeOT) end-groups have been synthesized. Whereas the nature of the core has little effect on the absorption maximum of the molecule, replacement of 4T by the more rigid SF produces a large increase in the fluorescence quantum yield and a reduction in the Stokes shift accompanied by an increase in the oxidation potential. The highly reactive EDOT and MeOT end-groups allow these compounds to undergo straightforward and complete electropolymerization into stable electrode materials. Cyclic voltammetry and spectroelectrochemistry confirm the role of the precursor structure on the electrochemical properties of the polymers. Analysis of the relationships between the morphology of the polymers and the structure of the precursors, using various microscopy techniques, suggests that, with appropriate precursor design, electropolymerization can produce nanostructured electrode materials with long-range order.
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[1] http://okina.univ-angers.fr/publications?f[author]=3017

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[3] http://okina.univ-angers.fr/philippe.leriche/publications
[4] http://okina.univ-angers.fr/jean.roncali/publications
[5] http://okina.univ-angers.fr/publications?f[keyword]=5105
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