



3,4-Phenylenedioxythiophene (PheDOT): a novel platform for the synthesis of planar substituted pi-donor conjugated systems

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Auteur	Roquet, Sophie [1], Leriche, Philippe [2], Perepichka, Igor [3], Joussetme, Bruno [4], Levillain, Eric [5], Frère, Pierre [6], Roncali, Jean [7]
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Résumé en anglais	<p>3,4-Phenylenedioxythiophene (PheDOT), a benzenic analogue of 3,4-ethylenedioxythiophene (EDOT), has been synthesized using two different routes namely etherification of 2,5-dicarboethoxy-3,4-dihydroxythiophene with haloaromatics and transesterification of 3,4-dimethoxythiophene with catechols. Quantum calculations and electrochemical measurements show that replacement of the ethylene bridge of EDOT by a phenyl group leads to an increase of the HOMO level and to a stabilization of the cation radical, making electropolymerization of PheDOT more difficult than that of EDOT. The synthesis of several PheDOT derivatives is described together with preliminary results on their electrochemical polymerization and on the properties of the resulting polymers and copolymers.</p>
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[1] [http://okina.univ-angers.fr/publications?f\[author\]=2850](http://okina.univ-angers.fr/publications?f[author]=2850)

[2] <http://okina.univ-angers.fr/philippe.leriche/publications>

- [3] [http://okina.univ-angers.fr/publications?f\[author\]=18093](http://okina.univ-angers.fr/publications?f[author]=18093)
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