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Electrochemical Copolymerization of Thiophene Containing Pseudo-Polyether Cages with Pyrrole

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Abstract: Conducting copolymers were synthesized via the electrochemical oxidation of pyrrole (Py) in the presence of the monomer 1,12-bis(2-thienyl)-2,5,8,11-tetraoxadodecane (I). The presence of monomer I in the electrolytic solution greatly changed the CV behavior of Py during its potensiodynamic polymerization. The electroactivity of poly(I-co-Py) increased with the increasing amount of I in the comonomer mixture. Copolymer films were prepared via constant potential electrolysis in an electrolytic solution containing 0.1 M tetrabutylammonium hexafluorophosphate ($TBAPF_6$) dissolved in acetonitrile. The spectroelectrochemical properties of the films were investigated using UV-VIS spectroscopy.

Key Words: Electrochemical polymerization, spectroelectrochemistry, polymer containing pseudo-polyether cages

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