BULETINUL INSTITUTULUI POLITEHNIC DIN IAŞI
TOMUL LIV (LVIII), FASC. 3, 2008
ELECTROTEHNICĂ, ENERGETICĂ, ELECTRONICĂ

CHARGE EFFECT ON THE ELECTROCHEMICAL IMPEDANCE OF Poly (2,2 -diakyl-3,4-propylenedioxythiophene) COATED CARBON FIBRE ELECTRODE

BY

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Abstract. Poly(2,2-Dialky-3,4-propylenedioxythiophene) films have been cyclovoltametrically coated onto micron size carbon fiber microelectrodes. An electrochemical impedance spectroscopic study (EIS) on the prepared electrodes is reported in this work which electropolymerization performed with different applied charges in the nonaqueus electrolytic medium. The electrochemical impedance data fitted to equivalent circuit model, used to find out quantitative relationships between the suggested circuit components. Effect of the cycle number (total charge) on the capacitive behavior of the P(ProDOT-Bu_2) SCFME's and morphology of films were discussed.

Keywords: Electrochemical impedance spectroscopy, cycle effect, poly(3,4-alkylenedioxythiophene)'s , equivalent circuit,pseudo capacitor.