Electropolymerization kinetics of o-aminophenol and characterization of the obtained polymer films

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Poly(ortho-ammophenol) has been synthesized electrochemically from a previously deoxygenated acid medium. The initial rate of electropolymerization reaction on platinum electrode is small and the rate law is: Rate = k(2) [D](0.50)[HCl](1.125)[M](1.29). The apparent activation energy (Ea) was found to be 68.63 kJ mol(-1). The polymer films obtained have been characterized by cyclic voltammetry, X-ray diffraction, elemental analysis, TGA, scanning electron microscopy, H-1 NMR, UV-visible, and IR spectroscopy. The mechanism of the electrochemical polymerization reaction has been discussed. (c) 2006 Wiley Periodicals, Inc.

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