ABSTRACT

Master's thesis Tovkach L. on "Electrochemical synthesis and study of copolymers and 3-methylthiophene 3,4-etylendioksotiophene properties of "- K .: NTUU "KPI", 2015. – 78 p., 25 fig., 9 tab., Literature – 72 sources.

This work is devoted to investigation of influence the relative concentrations of monomers in the electrochemical copolymerization of 3-methylthiophene and ethylendioksitiophen on spectral, electrochemical and spektroelektrochemical properties of synthesized copolymers.

The object of research - the properties of copolymers synthesized in the electrochemical copolymerization of 3-methylthiophene and ethylenedioxythiophene.

The subject of research - the impact of the concentration ratio of monomers in solution on the properties of copolymers formed.

As a result of studies the possibility of electrochemical copolymerization of 3-methylthiophene and ethylenedioxythiophene and the influence of monomer concentration on spectral, electrochemical and spectraelectrochemical properties of synthesized copolymers. It was established that the synthesized copolymers has highly stable electrochemical potentials ranging from -700 to 850 mV Rel. Ag/Ag^{+} for at least 100 cycles. It was demonstrated that the introduction of even small quantities of EDOT affects on the spectral characteristics and response time of received copolymers.

Key words: 3-methylthiophene, 3,4-ethylendioxythiophene, polythiophene, copolymerization, cyclic voltammetry, spectrophotometry, polaron, bipolaron.