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# (54) THE POLYMER BLEND PDA-PPY OF POLYDOPAMINE (PDA) AND POLYPYRROLE (PPY) ON A CONDUCTIVE SUBSTRATE AND THE METHOD OF ITS PREPARATION

(57) The subject of the invention is a blend material consisting of a conductive polydopamine fraction doped with chloride ions and a conductive polypyrrole fraction doped with chloride ions, deposited on a conductive surface (i.e. substrate electrodes).

The essence of the present invention is also the deposition procedure of the PDA-PPy blend, which consists in the fact that the process of potentiodynamic deposition of a polymer layer is carried out preferably on glassy carbon by electrochemical polymerization from a dopamine solution as a functional monomer in the form of a dopamine-containing solution with a concentration of $10^{-10}$ M - 1 M in the supporting electrolyte $10^{-3}$ M - 1 M KCl / NaCl / LiCl, with a potential linearly changed in the range from - 0.8 V to + 0.65 V, preferably in the range from - 0.5 V to + 0.5 V (vs. $Ag/AgCl/Cl_{aq}^-(3M)$). On the prior obtained polydopamine layer on the conductive surface, pyrrole electropolymerization is carried out by potentiostatic method from a solution of pyrrole as a functional monomer in the supporting electrolyte $10^{-3}$ M to 1 M KCl / NaCl / LiCl, with a constant potential from the range of + 0.45 V to + 1.2 V.

The essence of the present invention is also the deposition procedure of the PDA-PPy blend on the conducting surface. On polydopamine layer on the conducting surface, pyrrole electropolymerization is carried out by a potentiodynamic method from the pyrrole solution as a functional monomer in the supporting electrolyte $10^{-3}$ M to 1 M KCl / NaCl / LiCl, with a potential linearly changed in the range from of - 0.8 V do + 1.20 V.

The essence of the present invention is also the deposition procedure of the PDA-PPy blend, which consists in the fact that the process of the potentiostatic deposition of a polymer layer is carried out preferably on glassy carbon by electrochemical polymerization from a dopamine solution as a functional monomer in the form of a dopamine-containing solution with a concentration of $10^{-10}$ M - 1 M in the supporting electrolyte $10^{-3}$ M - 1 M KCl / NaCl / LiCl, with a constant potential from the range of + 0.12 V to + 0.65 V. On the thus obtained polydopamine layer on the conductive surface, pyrrole electropolymerization is carried out by potentiostatic method



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from a solution of pyrrole as a functional monomer in the supporting electrolyte $10^{-3}$ M to 1 M KCl / NaCl / LiCl, with a constant potential from the range of + 0.45 V to + 1.2 V.

The essence of the present invention is also the deposition procedure of the PDA-PPy blend on the conducting surface. On polydopamine layer on the conducting surface, pyrrole electropolymerization is carried out by a potentiodynamic method from the pyrrole solution as a functional monomer in the supporting electrolyte $10^{-3}$ M to 1 M KCl / NaCl / LiCl, with a potential linearly changed in the range from of - 0.8 V do + 1.20 V.

The essence of the present invention is also the deposition procedure of the PDA-PPy blend, which consists in the fact that the process of deposition of a polymer layer is carried out preferably on glassy carbon by a chemical method, from a solution of dopamine as a functional monomer in the supporting electrolyte 3 M - 0.00001 M KCl / NaCl / LiCl. On the thus obtained polydopamine layer on the conductive surface, pyrrole electropolymerization is carried out by potentiostatic method from a solution of pyrrole as a functional monomer in the supporting electrolyte $10^{-3}$ M to 1 M KCl / NaCl / LiCl, with a constant potential from the range of + 0.45 V to + 1.2 V.

The essence of the present invention is also the deposition procedure of the PDA-PPy blend on the conducting surface. On polydopamine layer on the conducting surface, pyrrole electropolymerization is carried out by a potentiodynamic method from the pyrrole solution as a functional monomer in the supporting electrolyte $10^{-3}$ M to 1 M KCl / NaCl / LiCl, with a potential linearly changed in the range from of - 0.8 V do + 1.20 V.

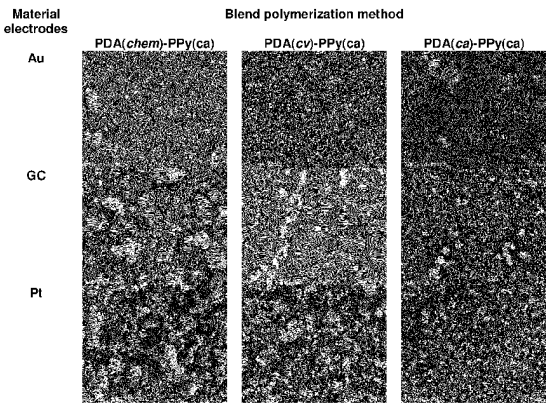


Fig. 6