

MODIFICATION OF CARBON WITH CARBACYLAMIDOPHOSPHATES FOR ADSORPTION OF Cu(II) AND La(III) METAL IONS

The article is devoted to investigation of adsorption properties of activated carbon, modified by carbacylamidophosphate. Carbacylamidophosphates (CAPH) are structural analogues of β -diketones in which one of two carbonyl groups replaced by phosphoric group, and bridging methylene group replaced by the amide group forming a functional fragment $-C(O)N(H)P(O)=$. CAPH compounds have been used in elaboration of new extractants for the extraction and separation of rare earth metals and uranium. The presence of $P=O$ group confer affinity to the lanthanide, actinide ions, and to the d-metals. That is why the CAPH are perspective objects for surface modification of porous materials such as activated carbon for development of new selective adsorbents. Three types of activated carbon, modified by (trichloroacetyl)phosphoramidate dichloride $Cl_3C-C(O)-N(H)-P(O)Cl_2$ were obtained. According to potentiometric titration and infrared spectroscopy data the formation of new surface groups containing acidic protons in all samples were revealed. Porous structure of carbons was characterized by nitrogen adsorption method. Modified carbons have been investigated in respect of copper(II) and lanthanide(III) ions.

Key words: activated carbon, copper, lanthanum, adsorption, carbacylamidophosphate, immobilization.