ADSORPTION OF IRON IONS ON CARBONACEOUS SORBENTS OBTAINED FROM CELLULOSE-CONTAINED SECONDARY RAW MATERIAL

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The rapid development of chemistry and the intensive implementation of the achievements of the chemical industry led to a swift increase of environmental contamination. The rational use of water resources is one of the urgent ecological problems, in the solution of which purification of drinking and waste water is very important [1].

Chemical and biological agents existing in water cause various health problems; therefore, regulation of water quality is an important task of protecting public health [2]. Heavy metals are biologically hazardous components of natural waters. They enter the environment as a result of production processes. Monitoring the concentration of heavy metals in water becomes very important due to the complex environmental background created by these processes [1].

Water purification is connected with large financial resources, so, the creation of natural, renewable and inexpensive adsorbents is an urgent problem.

A technology was developed at the R. Agladze Institute of Inorganic Chemistry and Electrochemistry [3], with the help of which sorbents can be obtained from cellulose-containing secondary raw materials.

The aim of the work was to determine the adsorption capacity of sorbents, in particular, carbon materials obtained from nutshells, nutshells and nectarine stones (factory-made activated carbon of grade A was taken for comparison), with respect to iron ions (of two and three valence). The results are shown in Table 1.

As can be seen from the table, the best adsorption capacity is shown by the carbon material of the hazelnut shells, which is no worse than the adsorption capacity of factory activated carbon. The adsorption capacity of the carbon materials of nutshells and nectarine seeds relative to iron ions is lower, although the parameters of the adsorption process can be selected if necessary. The advantage of the mentioned adsorbents is their low cost and high adsorption ability in relation to heavy metals [4, 5].

Table 1. Adsorption of iron ions on various carbon materials

Metal	Carbonaceous material	Initial concentration of metal, g/L	Final concentration of metal, g/L	Adsorption, mg/g
Common Iron (Fe^{2+}, Fe^{3+})	Nutshell	0.56	0.48	8
	Hazelnut shell		0.25	31
	Nectarine stone		0.43	13
	Activated carbon		0.25	31

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STUDY OF NITROSATION REACTION IN FISHER-BASED BIS-ANALOGUES

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2-methylenindoline bases, the so-called Fischer bases, are important reactive by-products in synthesis of several different organic compounds [1,2]. It should be noted, that it reacting with exogenous methylene bond in terms of elimination and electrophilic substitution reactions.In presented research is provided nitrosation reaction of new bis-analog of Fischer base, which are sinthesise by us [1,2].