



USE OF OXIDIZED ACTIVATED CARBONS IN WATER TREATMENT PROCESSES

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Abstract

Wastewater contains a wide range of harmful substances of both organic and inorganic nature. The elaboration of technologies for purification of such categories of wastewater requires the knowledge of the mechanism for sorption of organic substances and on heavy metals ions on the adsorbent specified for technological usage.

In line with the above-said, sorption processes of o-nitroaniline as well as of Pb^{2+} and Cu^{2+} ions on activated carbons obtained from plum stones (CA-36), CA-36 oxidized (CAO-36) and CAO-36 impregnated with Fe^{3+} (CAO-36+Fe) ions, have been investigated.

The obtained results make it possible to conclude that values of o-nitroaniline on activated carbon oxidized and saturated with ions of Pb^{2+} , as well as on the CAO-36+Fe, are practically equal. This can be explained through the immobilization of Fe^{3+} and Pb^{2+} ions on the activated carbon oxidized only by means of functional groups of acid character. Heavy metal ions are bound on the surface of activated carbons through coordinative bindings as well as by exchange with the hydrogen ions from the carboxylic group. O-nitroaniline molecules are retained by the activated carbon by means of dispersion forces on the hydrophobic side of the latter. The obtained experimental data have been used for elaborating the technological flow of water polluted with organic substances and heavy metals.

Keywords: adsorption, oxidized activated carbon, water treatment processes.

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