**NITROBENZENE REMOVAL FROM SEWAGE**

**BY ZEOLITES**

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The results of studies on the removal of nitrobenzene by zeolites from wastewater by zeolites are presented. The considered method is supposed to detoxification of nitrobenzene from the environment. In the study uses Armenian natural zeolites - mordenite from Shirak and clinoptilolite from Noyemberyan deposits [1].

Natural zeolites are modified by treatment with 6N hydrochloric (HCL) acid. The resulting zeolites were investigated as adsorbents. These same zeolites are impregnated with both conventional and surface-active quaternary ammonium salts, which are also widely used as interfacial catalysts.

         It is shown that the adsorption activity of acid-treated zeolites is higher than usual zeolites. It is shown that zeolites impregnated with quaternary ammonium salts are active adsorbents for removing nitrobenzene from wastewater. Natural zeolites have been modified as surface-active quaternary ammonium salts, which are commonly used in the field of phase transfer catalysis [2].

 The highest sorption activity for the removal of nitrobenzene from wastewater is found to be the N, N-dimethyl-N-hexadecyl-N-2-hydroxy-ethyl ammonium bromide impregnated with it. It is assumed the structure of the quaternary ammonium salt contribute to the testing of the zeolite with the ammonium salt. It has been established that ammonium salt absorption on the surface the zeolite contributes to both adjacent ammonium part, benzene and hydroxyl groups in the molecule.

The thermal stability of ammonium salts has been demonstrated, particularly in the case of dimethyl-2-hydroxyethyl-cetyl ammonium bromide.

         The results of the adsorption process are proved by the theoretical Freundlich adsorption model.

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2. Dunqiu Wang, Huijun Shan, Xiaojie Sun, Hongxia Zhang, Yanhua Wu, Removal of nitrobenzene from

aqueous solution by adsorption onto carbonized sugarcane bagasse, Adsorption Science & Technology, Vol. 36(5–6) 1366–1385, 2018.