**CREATION OF EFFECTIVE CATALYSTS FOR HYDROGENATION OF AROMATIC HYDROCARBONS AND GASOLINE FRACTIONS**

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Modern requirements to ecological properties of automobile gasolines cause the necessity of increase in production of non-aromatic high-octane components by development of new technological processes and effective catalysts. The method of catalytic hydrogenation (hydrodearomatization) - is one of the most perspective and relevant methods of improvement of operational properties of fuels.

The purpose of the work was to study the process of hydrogenation of aromatic ring in the aromatic hydrocarbons and gasoline fractions at elevated hydrogen pressure. The liquid phase hydrogenation was carried out in the kinetic installation of high pressure (KIHP) and in an autoclave - apparatus for carrying out of the processes at elevated pressure with heating of «Amar Equipment Ltd» firm. In the work the supported on various carriers mono- and bimetallic catalysts on base of metals of Pt-group were created and investigated. Hydrogenation of aromatic hydrocarbons - benzene, ethylbenzene, cumene to cyclohexane, ethyl cyclohexane and iso-propyl-cyclohexane, respectively was researched. The reactions were studied at different hydrogen pressures and temperatures, as in the solvents (alcohols, hexane) as in the absence of the solvents. It is shown that Rh-Pt-catalysts supported on γ-Al2O3 are the most active catalysts in this process. The reaction rate and selectivity of the catalysts decreases in the order: Rh-Pt>Rh-Pd>>Pd-Ru>Rh. At Ru-catalysts occurs incomplete recovery of benzene to cyclohexene (15%), the cyclohexane yield is not more than 35-40%. The reaction rate is decreased with the complication of the structure of compounds in the order: benzene >> ethylbenzene >>cumene which is confirmed with the literature data. It has been studied the hydrogenation of two gasoline fractionsof LLP "Atyrau Refinery" (stable catalysate LG with 0.37% of benzene, straight-run gasoline ABT with 3.18% of benzene) at various pressures and temperatures of the process.The technological parameters of the process of hydrodearomatization are worked out. Data on the group composition of the organic substances in gasolines show that after the catalytic hydrogenation the benzene is absent, the content of aromatic compounds decreased from 32.5 to 55.12% (wt.). The content of olefins is reduced from 0.23 to 0.11% (wt.) and paraffins content is decreased from 12.41 to 11.99% (wt). It is shown by the results of the analysis that the octane number of gasoline fractions is not changed after catalytic hydrogenation.