
DIVERSIFICATION OF SOURCES OF HYDROCARBON RAW MATERIALS FOR THE PRODUCTION OF MOTOR FUELS IN UKRAINE

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The article presents the results of the analysis of existing domestic and foreign data on the use of various hydrocarbon raw materials and technologies for the industrial production of motor fuels. The use is substantiated in motor fuel technology of such raw materials as: agricultural crops, solid combustible fossils (hard and brown coal, shale and lignite), production waste (used lubricating oils and used car tires) and consumption (polymer products).

World trends and technologies has been analyzed, which are the most often used today in the field of motor fuel production from various types of hydrocarbon raw materials, alternative to petroleum raw materials. It has been determined that biofuel based on ethyl alcohol, despite its high resistance to detonation and environmental properties, has a lower heat of combustion, high solubility in water and hygroscopicity, compared to classic petroleum fuel. Technologies for obtaining components of motor fuels from coal raw materials and shale, in particular gasification and hydrogenation, are characterized by the complexity of the process, high temperatures and pressure of the process and the need to use expensive catalysts. The use of production waste in motor fuel technology is due to the fact that sulfur, which is in the raw material, is poison for catalysts and can become part of the final product. And to give it the properties of commercial motor fuel, it is necessary to carry out additional cleaning.

Among the considered raw materials, as a result of the low cost, relative ease of processing and the level of quality of the obtained final product - commercial motor fuel, the most promising are secondary polymer materials, represented by polyethylene and polypropylene products. The processing of secondary polymer raw materials into motor fuels or their components, using catalytic low-temperature pyrolysis (temperature up to 600 °C) on a zeolite-containing catalyst, allows you to obtain products that can be used in specific operating conditions, for example, in shipping, as marine fuel.

Keywords: raw materials, ethyl alcohol, coal, gasification, hydrogenation, polymers, catalytic pyrolysis, motor fuel, marine fuel.

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