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Intergovernmental council for awarding Russian Federation Government Prizes in Science and Technology

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REFERENCE

for the work: **"Invention and widespread introduction of competitive Russian isomerization technology and industrial complexes Isomalk for large-scale motor gasoline production, meeting European standards requirements"**, executed by the team of authors: Glazov A.V., Lugovsky A.I., Nikolaychuk V.A., Rozenberg L.S., Sannikov A.L., Fedorova M.L., Cherner A.M., Shakun A.N., nominated for Russian Federation Government Prize in Science and Technology by JSC Gazprom Neft in 2011.

Nominated for Russian Federation Government Prize work solves many problems of the Russian oil refinery in the field of high-quality motor gasolines production.

In recent years modern production of motor fuels has developed under influence of the new standards requirements, stipulating their ecological cleanness increase. Light naphtha isomerization technology for producing multi-branched isomers from normal paraffins or monomethylalkanes takes more significance in motor fuels production and becomes strategically "gasoline process", providing significant growth of octane numbers in fractions from C5 to 100 °C and therefore in refineries gasoline pool in general.

Light paraffin hydrocarbons isomerization process, which distinguishes itself by economical efficiency, technology simplicity, low energy and operational expenses, allows producing additional qualities of isoalkanes that leads to produced fuels quality improvement in operational and ecological characteristics. Addition of pentane-hexanes fractions and isooctanes high-octane isomerates (alkylgasoline) allows significantly reducing benzene and total aromatics content in commercial gasolines. The most important application property of isomerates is minimum difference between octane numbers per research and motor method (RON/MON) (2-3 numbers).

For many years Russia has been fallen behind the leading countries in ecological motor gasolines production. The main reason for such position is the lack of secondary oil refining processes and processes, improving manufactured fuels quality, particularly light naphtha isomerization units, in the Russian enterprises.