

INSTITUTION OF  
THE RUSSIAN ACADEMY OF SCIENCE

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.

Conversion of Russia to production and consumption of high-quality motor gasolines according to modern ecological standards is one of the most important targets of refining industry.

For many years conversion to high-quality motor gasolines in Russian oil refining restrained by underdevelopment of secondary processes, producing ecological high-octane non-aromatic autocomponents. It is connected both with retardation of legal framework and with the lack of Russian world-class technologies.

The work presented for awarding Russian Federation Government Prize solves this problem. The technology of low-temperature light naphtha isomerization and high-quality non-aromatic autocomponents production was developed and introduced into the industry by the authors. This technology surpasses foreign analogues in a number of parameters.

First of all, fundamentally new high-performance low-temperature isomerization catalyst SI-2 on sulfated metal oxides was developed by the authors. Scientific bases of sulfated oxide systems synthesis and generation of catalysts with necessary properties were developed. Within a short period of time industrial production of SI-2 catalyst was organized at two Russian catalysts factories in Ryazan and Angarsk. SI-2 catalyst outperforms the best US analogues I-82 and PI-242 by stability of isomerization process parameters, guaranteed operation time (10 years instead of 5 years) and environmental safety class.

