

ТЕЗИСЫ ДОКЛАДОВ

**Международная научно-практическая конференция
“Инновативные перспективы развития нефтепереработки
и нефтехимии”, посвященная 110-летию
академика В.С. Алиева**

9 - 10 октября 2018 г.



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**НАЦИОНАЛЬНАЯ АКАДЕМИЯ НАУК АЗЕРБАЙДЖАНА
(НАНА)**



**ИНСТИТУТ НЕФТЕХИМИЧЕСКИХ ПРОЦЕССОВ
НАЦИОНАЛЬНОЙ АКАДЕМИИ НАУК АЗЕРБАЙДЖАНА
(ИНХП НАНА)**

БАКУ – 2018

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**INVESTIGATION OF THE INVOLVEMENT OF CO₂ IN CATALYTIC REACTIONS
FOR THE PURPOSE OF OBTAINING VALUABLE PRODUCTS**

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The growing need to address the problem of carbon dioxide accumulation in the atmosphere requires the creation of economical, ecological and technological methods for its utilization. The main difficulty in the chemical treatment of CO₂ is the extremely high inertia of the molecule of this gas, which requires the use of either highly reactive reagents such as hydrogen or catalysts to activate this molecule in the reaction. One of the most promising ways of utilizing CO₂ today is its catalytic conversion to valuable products of chemical technology, in particular, direct hydrogenation of CO₂ on heterogeneous catalysts for the production of products such as synthesis gas, hydrocarbons, alcohols, ethers and some other organic molecules attracts the greatest interest. As a rule, heterogeneous catalysts based on precious metals are used for this process, which increases the cost of final products and reduces the competitiveness of the method. Substitution of catalysts based on precious metals by cheaper catalysts will significantly change the situation. Catalysts based on transition metals can be used as relatively cheap catalysts. In the present work, a complex study of the regularities of direct hydrogenation of CO₂ and the reaction of dehydrogenation of propane in the presence of CO₂ in gas phase and supercritical conditions on heterogeneous catalysts based on transition metals was conducted for the first time.

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