range of the feed stocks. The kinetic parameters of the reactions in platforming process are defined mathematically. In general, good agreement obtains between the calculated and experimentally-determined values. This mathematical analysis is useful in optimizing and/or controlling the process.

BRIEF COMMUNICATIONS:

Applicability of the Radical-Chain Reaction Scheme to Kinetics of High Temperature Oxidation of Methane in Presence of Oxides of Nitrogen as the Initiators

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The experimental data of kinetics of oxidation of methane to formaldehyde in presence of oxides of nitrogen were worked-up, assuming that the role of the oxides is solely to initiate formation of methyl radical and that thereafter the oxidation proceeds according to the generally-accepted S'yem'yonov's reaction scheme. Use of this assumption leads to significant discrepancies between the calculated and the experimentally-determined values of the constants of elementary reactions.

Radiolysis of Concentrated Aqueous Solutions of Isopropyl Alcohol in Presence of Oxygen

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The results of radiolysis of 0.01 to 13 M aqueous solutions of isopropyl alcohol show that in absence of oxygen the product formation in the neutral and acidic solutions is due to both the direct and indirect effects of the radiolysis and that chain reactions do not occur. On the other hand, in presence of oxygen and 0.01 M $HClO_3$, chain reactions develop in 1 M, or higher, solutions of the alcohol. The chain reaction-controlling factors are temperature, dosage rate, and the solution composition.

Reactions of Atomic Hydrogen in $H_2O + H_2SO_4 + FeSO_4$ System: Reaction With Fe^{+2}

N. M. BAJEEN, N. M. LEEKHACHEVA, N. N. BOOBNOV AND V. V. VOYEVODSKY
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EPR studies show that in an $H_2O + H_2SO_4 + FeSO_4$ system atomic hydrogen reacts with the Fe^{+2} ions to form complexes of the (Fe^{+2} . . . H) type. Exposure of the complexes to a long-wave length light at a temperature of 77°K results in regeneration of the hydrogen atoms.

Study of Oxidation of Finely Dispersed Tin With the Aid of Mössbauer Effect

I. P. SOOZDAL'YEV, E. F. MAKAROV, E. YA. GARZANOV AND L. A. KORITKO
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A study of the mechanism of oxidation of the aerosol particles of tin of 300–1,000 A in size reveals formation of SnO_2 on the particle surface. Application of the Mössbauer Effect greatly facilitates investigations of processes of this type.

Properties of Radiation-Catalytic Conversion of Methanol at Small Surface Coverages

V. I. VLADEEMEEROVA, G. M. JABROVA AND B. M. KADENATZEE
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A study of radiation-catalytic conversion of methanol on the surface of silica gel was carried out at a temperature of 20° and the monolayer coverages of 0.007–1.5. Comparison of the results obtained in this study with the data for homogeneous radiolysis of methanol shows that a small catalyst surface coverage is the most important prerequisite of radiation-catalytic reactions.

Aluminum Fluoride as Hydrocarbon Cracking Catalyst

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Aluminum fluoride is an active and stable catalyst in cracking of cumene.

Mechanism and Kinetics of Carbon Monoxide-Steam Reaction Over Zn-Cr-Cu Oxide Catalyst

G. G. TSHCHEEBR'YA, N. M. MOROZOV AND M. I. T'YOMKEENA
L. Ya. Karpov Physico-Chemical Institute

Conversion of carbon monoxide was investigated over a low-temperature Zn-Cr-Cu oxide catalyst at 300°. The reaction rate can be calculated by the equation shown. The form of this equation is identical with that of the equation derived earlier for the conversion over an oxidized iron-chromium catalyst.