to chain termination on the surface of the channel black, a reaction which of substantially higher than first order in terms of $RO_2^\bullet$.

Effect of Small Additions of Platinum on the Formation and Growth of New-Phase Nuclei in V_2O_5 Reduction by H_2

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Small (0.001–0.01 wt %) concentrations of Pt not only accelerate the V_2O_5 reduction by H_2 (higher k_{specific}), but also alter the process of the metal nuclei. Below the maximum formation rate, the rate of formation of the nuclei in the absence of Pt obeys an exponential function with a constant exponent; however, if Pt is present, the rate is an exponential function with a variable exponent.

Kinetics of the Catalytic Hydrolysis of Allyl Chloride in the Presence of Metals of Group VIII

R. M. FLEED AND YU. M. TREGER

Hydrolysis of allyl chloride in an alkaline medium is catalyzed Ni, Pt, Pd, and Rh. The k_{specific}, as well as the activation energies decrease in the order $Rh > Ni \approx Pd > Pt$. This series correlates with the corresponding work functions and ionization potentials. It appears that the donor-acceptor bond plays a substantial role in the activation of allyl chloride. It also appears that the transformation of the intermediate π-allyl complex is the controlling step of the reaction.

Alkylation, Conjugated Alkylation, and Disproportionation of Ethylisopropylbenzenes

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Ethylisopropylbenzenes and ethyldiisopropylbenzenes were disproportionated at various temperatures on $AlCl_3$. The $K_{\text{eq. dispr.}}$ for ethylisopropylbenzene is 28. Tris compound can be obtained by conjugated alkylation of ethylbenzene by ethyldi- or ethyltriisopropylbenzenes over $AlCl_3$ (yields of 75 and 44.5%, respectively). However, alkylation with propylene at 60°C in the presence of $AlCl_3$ is accompanied by disproportionation, and the maximum yield of ethylbenzene does not exceed 11–12%.

The Energies of the Bonds between Some Oxide Catalysts and Oxygen, Hydrogen, and Carbon Atoms

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The kinetic technique for calculating the energies of bonds between an oxide catalyst and the oxygen of a reacting molecule does not hold in the case of isotopic oxygen exchange, as well as in oxidation of hydrogen and propylene. These reactions cannot be encompassed by the multiplet theory of catalysis.

Study of the Reaction of Germanium with Oxygen by Mass Spectrometry

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Mass spectrometry has shown that it is possible to regenerate an oxidized germanium surface by heating in high vacuum,, whereby oxygen is removed above 520°C.

In a steady stream of oxygen, the oxidation of germanium below 500°C is accompanied by vaporization, but above 600°C oxidation slows down. The most probable reason for this slow down is formation of a protective film of GeO_2.

Chemisorption of *n*-Butane on a Chromia-Alumina-Potassium Dehydrogenation Catalyst

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Between 100° and 150°C. *n*-butane absorbs only physically on the above catalyst. Between 170° and 240°C, there is chemisorption without decomposition of the butane. Above 250°C, the chemisorbed *n*-butane is dehydrogenated to butylenes, which in some complex consecutive reactions transform to benzene and toluene.

Chemisorption of Organotin Compounds on γ-Al_2O_3

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Using $(CH_3)_4$ Sn as a type compound, the authors examined the structure of the Mössbauer spectrum of organotin compounds adsorbed on γ-Al_2O_3. The hydroxyl groups of the surface play an important role in this adsorption, and active sites of two kinds are involved. The various possible chemisorption mechanisms are discussed.

Recycle Pump for Studies of Kinetics of Heterogeneous Vapor-Phase Reactions

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A new glass recycle pump was designed. This pump allows maintaining in the thermostat any temperature needed for the prevention of the condensation of the starting materials (or products) during the process cycle.

Gas-Chromatographic Study of Nonuniformities on the Surface of a Silica-Alumina Catalyst

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The authors propose a gas-chromatographic technique for differentiating between active and nonactive sites on the surfaces of adsorbents and catalysts. This technique is based on the difference which the two types of sites exhibit in adsorption and chemisorption activities.