retarded by intermediate products of the side-reactions. A differential kinetic equation is presented; it was developed for the reactions of this type by assuming steady-state conditions. Usefulness of electronic computers to solve this equation is illustrated for the case of oxidation of furfural to maleic anhydride.

Regenerability of Palladium-Polyvinyl Alcohol Catalyst

O. A. T'yur'yenkova and V. V. Bondar'yuk
Farm Institute of the City of Koorgansk

The studies of regenerability and activation of a colloidal palladium-polyvinyl alcohol catalyst involved its precipitation with ethyl alcohol and dissolution of the precipitate in water.

The rate of allyl alcohol hydration over the regenerated catalyst is doubled compared to the fresh catalyst. Each fresh catalyst charge can be advantageously regenerated three times. However, beginning with the fourth regeneration the activity progressively decreases.

Chemisorption of Nitrogen and Hydrogen on Iron Catalysts Used in Ammonia Synthesis

R. B. Chesnokova, A. I. Gorboonova, S. S. Lacheenov, G. K. Mooravskaya, and G. A. Erdedee
Scientific Research Institute for Nitrogen Industry

Adsorption of nitrogen and hydrogen at respective temperatures of 475° and 200° was studied, using promoted and unpromoted iron catalysts. For systems in equilibrium at a wide range of pressures, the catalysts studied have similar specific chemisorptive capacity for nitrogen and hydrogen.

Catalytic Properties of Germanium Metal Films Formed by Pyrolysis of GeH_4

V. M. Frolov
Institute of Chemical Physics of the Academy of Sciences of USSR

A study of dehydrogenation kinetics of ethanol was carried out over germanium metal films produced by thermal decomposition of GeH_4 on powdered quartz. The activation energy of dehydrogenation of about 10 kcal/mol exceeds that for powdered germanium metal, which has its own inherent conductivity. At a temperature of 235°, specific catalytic activity of the film is about one fourth that of the powdered metal. Variation of electrical resistance of the film with temperature was also established. At temperatures of 150°–250°, the electroconductance activation energy is 0.30–0.38 ev.

Chemistry of Conversion of Alkylphenyl Esters at High Temperatures and Pressures

B. V. Trdjetzkaya and J. V. Kal'yecheetz
Institute for Coal- and Petrochemical Synthesis of the City of Angarsk

The compositions of typical products were determined in high temperature and pressure liquid phase hydrogenation of alkyl-phenyl esters over an iron catalyst. The schemes to interpret the reactions assume a radical interaction mechanism.

Kinetics of Ammonia Synthesis Over a Steam-Poisoned Iron Catalyst Promoted with Al_2O_3

I. A. Smeernov, N. M. Morozov, and M. I. T'yomkeen
L. Ya. Karpov Physico-Chemical Institute

Applicability of the kinetic equation describing ammonia synthesis over a reversibly steam-poisoned iron catalyst was determined when the catalyst used in the synthesis is promoted by Al_2O_3.

Effect of Thermal Pretreatment on Porosity of a Vanadium Catalyst

E. I. Dobkeena, V. I. D'yer'yujkeena, and I. P. Mookhl'yenov
Lensoviet Technological Institute of the City of Leningrad

The pore radii of a physically-rugged vanadium catalyst for use in oxidation of sulfur dioxide are a function of thermal pretreatment temperatures, the pore-size increasing with the temperature. The catalyst with the optimum pore radius of 1,000 A is produced at the pretreatment temperatures of 500°–600°.

A Nickel-Titanium Hydrogenation Catalyst

N. K. Nadeerov
Pedagogical Institute of the City of Khabarovsk

Experimental results demonstrate that titanium dioxide to support nickel formate catalyst is not an inert base but is an active catalytic component. Activity of the titanium dioxide-based catalyst is superior to the nickel formate catalyst now in industrial use.