Effect of Catalyst Particle Size on Conversion of Methyl Alcohol to Formaldehyde in Fluidized Beds of Silver and Copper Catalysts

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The optimum catalyst particle sizes were determined for conversion of methanol to formaldehyde by contact with fluidized catalyst beds. The results show that at optimum conditions activity of the copper catalyst is almost as good as that of the silver. At the same time, its average specific productivity is 5–6 times greater than of the silver catalyst.

The results obtained are interpreted in the light of the existing concept of the chain-radical homogeneous-heterogeneous reaction mechanisms.

Study of Kinetics of Heterogeneous Catalytic Reactions in Terms of Their Ignition Characteristics: Zero Order Reactions

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Certain specific properties of the ignition phenomenon were investigated for the zero order reactions. Methods are proposed to characterize critical ignition conditions and to determine kinetic parameters of the process in terms of the minimum mid-stream ignition temperatures. The parameters to facilitate the essential calculations are readily determinable by experimental means.

Brief Communications:

T. I. Andreeanova: Catalytic Activity of Cationite KU-2 in Vapor Phase Reactions as a Function of the Degree of Its Cross-Linking Density.

V. I. Skarchenko, V. S. Frolova, I. T. Goloob'yenko, V. P. Mooseeyenko, and P. N. Galeech: Activity of Ferro-Aluminum Oxide Catalysts in Dehydrogenation of n-Alkanes.

G. A. Galkeen, V. A. Kees'yel'yov, and V. I. Ligeen: Infra-red Spectra and Interaction Energies in Adsorption of Aromatics by Aerosil.

G. P. Korneychook and V. M. Odreen: Variants of Non-Gradient Reactors for Studies of Catalysis —with Means for Concurrent Gravimetric Determination of Catalyst Compositions.

Ya. M. Fogel, B. T. Nadikto, V. I. Shvachko, V. F. Ribalko, and I. E. Korobchanskaya: Investigation of Nitric Oxide Decomposition and of Its Interaction with Ammonia Over Platinum, Using the Secondary Ion Emission Technique.

L. A. Kasatkeena and V. I. Shoostov: Isotopic Vanadium Pentoxide—Sulfur Dioxide (and Trioxide) Oxygen Exchange Reactions.

A. V. Krilova, L. D. Koozn'yetzov, and I. N. Kon'yukhova: Effect of Alkaline Promoters Upon Electronic Work Function and Activity of Ammonia Catalysts.

N. I. Shooikeen, T. I. Narishkeena, and Z. A. Rasshchoopkeena: Conditions to Suppress Coke Lay-Down on Potassium Aluminochromate Catalysts in Dehydrocyclization of Piperylene to Cyclopentadiene.

E. I. Yevz'yereekheen, G. D. L'yubarsky: Catalytic Activity of Nickel-Cobalt Alloys

Letter to the Editors:

G. K. Bor'yeskov and A. V. Khaseen: Homogeneity of Oxygen Adsorbed on Silver Films.