

to the catalysts of electronic type, such as the germanium samples studied, the catalysts with site vacancies (holes) have about 10 kcal/mol smaller activation energy and about 3-4 times greater specific catalytic activity values.

A mechanism is proposed for the reaction studied. The effects of additives of the donor and acceptor types on catalytic activity of germanium are also discussed.

#### Chemisorption of Gases on Titanium Dioxide and on Its Solid Solutions in Tungsten Oxide with Different Electronic Properties

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Chemisorption of oxygen was studied on titanium dioxide and on its solid solutions in  $WO_3$  with different activation energy, electroconductivity, and electron work function values. Addition of 0.5 mol % of  $WO_3$  significantly alters the rate of oxygen adsorption on the  $TiO_2-WO_3$  catalyst. It is believed that the active centers to chemisorb oxygen are the electrons captured at the surface acceptor-type levels, which could be formed by the vacant oxygen sites.

#### Structure and Method of Preparation of Fine Solid Dispersions of Metals for Spectral Studies

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A method is described for preparation of fine solid dispersions of silver, copper, gold, cobalt, and other metals. These dispersions are highly permeable to infra-red radiation. The structures of these dispersions were determined by electronic microscopy; the distributions in terms of the major dimension of the particles were determined statistically for the copper dispersions.

The results show that the dispersed particles of copper, silver, and gold are of spherical shape, with average particle diameters of 100, 250 and 80 Å, respectively. The results also show that the distribution curves are not symmetrical, the maximum point shifting in the direction of increasing particle size as the degree of polydispersion is increased.

#### BRIEF COMMUNICATIONS:

V. Ya. Volfson, L. N. Gan'yuk, E. F. Totzkaya: Catalytic Properties of Vanadium Bronzes.

E. I. Dosoveetzky, J. J. Yoffey: Kinetics of Oxidative Decarboxylation of Copper Benzoate.

S. A. Ven'yameenov, K. V. Topcheeyeva: Gas Chromatographic Studies of Adsorption of Acetylene and Vinyl Chloride on a Commercial Grade Alumina.

Yu. B. Kagan, A. Ya. Rosovsky, M. G. Sleenko, A. T. Ponamar'yenko: Investigation of Kinetics of Heterogeneous Catalytic Reactions in Terms of Their Ignition Points. Reactions of Arbitrary Order.

E. G. Bor'yeskova, V. I. Ligeen, K. V. Topcheeyeva: Infra-Red Spectroscopy in Investigation of Properties of Active Centers of Decationized Catalysts in Cumene Cracking Reactions.

#### LETTERS TO THE EDITOR:

Yu. D. Tzv'yetkov, O. V. Falad'yeyev: EPR Studies of Recombination of Stable Radicals, Using Irradiated Monocrystals of Organic Substances.

V. G. Veenogradova, B. N. Sheleemov, N. V. Fok: Stabilization of Atomic Hydrogen in Catalytic Decomposition of Hydrocarbons Over Silica Gel at 77°K in Presence of Photosensitized Benzene.

L. Yu. Rooseen, A. M. Chaikoen, A. E. Sheelov: EPR Spectra of Halide Atoms in Branched Chain Reactions in Gaseous Phase.