benzene doped with this compound. Concurrently, the changes in catalytic activity were observed for a number of supported nickel catalysts. The results show that identical amounts of carbon bisulfide sulfur are chemisorbed by a unit of the nickel surface of the catalysts studied.

Thiophene poisons nickel five times as much as carbon bisulfide. Adsorption from solutions results in blockage of the entire metal surface. In the hydrogenation process, consumption of carbon bisulfide is not affected by preadsorbed thiophene. Poisoning of the catalysts—in any degree—by thiophene or by carbon bisulfide does not alter the energy of activation in hydrogenation of benzene.

Oxygen-Initiated Heterogeneous Catalytic Olefin Condensation Reactions in Presence of Hydrogen: Conversion of Ethylene

By YA. T. EIDOOS, N. I. YERSHOV, V. R. YEROOKEENA, AND N. S. ANDREIYEV
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Summarize the results of a study to condense ethylene in presence of hydrogen over a clay-supported cobalt catalyst, using small amounts of oxygen as the initiator.

Effect of Added Lithium and Gallium on Catalytic Properties of Zinc Oxide in Homomolecular Isotopic Oxygen Exchange Reaction

By V. I. GORGORAKY, L. A. KASATKEENA, AND V. YU. LEVEEN
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A study of the homomolecular isotopic oxygen exchange, $^{16}O_2 + {}^{18}O_2 = 2{}^{16}O^{18}O$, was carried out at 425°-550°C and oxygen pressures of 5—200 mm Hg over ZnO—alone and with various amounts of admixed lithium and gallium. The results indicate that for the systems investigated the sorbtion of molecular oxygen and its subsequent dissociation into atoms are the limiting steps of the exchange reaction.

List comparative physical and catalytic properties of the exploratory catalysts. Propose a mechanism to explain the modifying effects due to the additives used in the study.

Catalytic Activity of Copper Polyphthalocyanines in Decomposition of Hydrogen Peroxide

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The monomer and a number of polymers of copper phthalocyanine differing in electrophysical properties were investigated as catalysts in decomposition of aqueous solutions hydrogen peroxide at temperatures of 20° to 52°C. The polymer with the greatest electroconductivity at a room temperature and the smallest electroconductance activation energy has the greatest catalytic activity. Conversely, the polymer with the smallest electroconductivity and the greatest activation energy values is the least active catalyst. At the conditions of this study, the monomer shows practically no catalytic activity. These results show that catalytic activity of copper polyphthalocyanines in decomposition of H_2O_2 is correlatable with their electrophysical properties.

Interaction of Hydrogen with Oxygen Over Vaporized Palladium Films

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The conditions for interaction of hydrogen with oxygen over palladium were determined from measured volumetric and electrical resistance properties of vaporized palladium films. A careful note was made of the differences in performance of nickel and palladium in the oxygen-hydrogen interaction process and of the relative ability of the transition metals at both ends of the Periodic System to sorb various gases.

Effect of Promoters in Hydrogenolysis of Xylite

By N. A. VASIUNEENA, A. A. BALANDEEN, AND YU. MAMOTOV
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CaO, BaO, and NaOH were investigated as promoters in hydrogenolysis of xylite over nickel catalyst at 200°-245° and constant hydrogen pressure of 200 atm. At the conditions studied, due to thorough mixing of the three-phase reaction system, Cannizzaro's reaction was absent and consequent possible decrease of the system pH was avoided.

The promoting action of CaO and BaO is due to their chemical properties and not to the alkalinity produced in the hydrogenolysis. Addition of either of these compounds causes three- to four-fold increase in the rupture of xylite C—C bond, leading to the formation of glycerine and ethylene glycol. Compared to these two oxides, NaOH is an appreciably weaker catalytic promoter of the subject reaction.