cyclization than analogous compounds obtained by reduction with hydrogen at 330°C. KOH affects both catalysts in an identical manner. Thus, small additions of KOH promote the activity, but large ones poison the catalyst. The ring expansion in 1,1,3-trimethylcyclopentane is gradually inhibited by higher base concentrations. The activation energies for dehydrocyclization on catalysts containing different amounts of KOH differ substantially. It would appear that small amounts of KOH promote the active sites on platinum. It is shown that the surface of platinized carbon contains several different types of active sites and that dehydrocyclization proceeds differently on every one of these.

The Activities of Phthalocyanins of Platinum Group Metals

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Osmium and ruthenium phthalocyanins (Pc) exhibit very high oxidizing activity, but the other phthalocyanins of this group are inactive. The activity of $(HSO_4)_2OsPc$ is higher than that of $(HSO_4)_2RuPc$; either of these is much more active than iron phthalocyanin. The authors have investigated the catalyst-poisoning effects of N_2F, HCN, and NH_3, and have determined the kinetics of homogeneous and heterogeneous reactions involving these catalysts, as well as the kinetic equation, rate constants, and activation energies. They postulate a mechanism for catalysis by phthalocyanins.

Oxygen-Initiated Heterogeneous Catalytic Polymerization of Olefins in the Presence of Hydrogen

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The authors investigated the behavior of 1-hexene-hydrogen mixtures (1.3–1.5:1) over clay-supported Co at 100°C and atmospheric pressure. Under these conditions, 1-hexene undergoes hydropolymerization to higher hydrocarbons. The yield is 7.5%. Addition of 1.3% O_2 increases the yield to 22%, while adding the oxygen and raising the temperature to 140°C raises it to 25%. It appears that no catalyst break-in period is necessary. At 190°C the oxygen ceases to promote the reaction.

Nonstoichiometric Sulfur in WS_2 Catalysts

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Nonstoichiometric amounts of sulfur are incorporated into the WS_2 catalyst during its preparation. This sulfur appears to account for the isomerizing and cracking activity of this catalyst. It is suggested that the sulfur is incorporated into the WS_2 lattice during formation.

Kinetics of Dehydrogenation of Cyclohexane over Chromium Oxide in a Nongradient System. II.

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The authors have studied the kinetics of dehydrogenation of cyclohexane over various chromium oxide catalysts in a circulatory-flow unit. The reaction rate may be described by $\omega = kP_{C_6H_{12}}$. The activation energies vary between 31 and 42 kcal/mole, depending on the catalyst. Comparison of the rates with the rate of the *para-ortho* conversion in hydrogen showed that under these conditions hydrogen desorption cannot be the controlling stage.

Gas-Chromatographic Studies on the Kinetics of Cumene Cracking over Modified Silica-Alumina Catalysts

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Pulse gas chromatography was used to determine the activity of a series of silica-alumina catalysts in cracking of cumene. The activities of amorphous silica-alumina catalysts are compared with those of Y-type zeolites of the same cationic forms.

Hydrogenation of Glucose on Raney Nickel. I.

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The authors studied the hydrogenation of glucose over Raney-type nickel-palladium and nickel-ruthenium catalysts at above-atmospheric pressure and with intensive mixing of the medium. Palladium or ruthenium are promoters of Raney nickel and can raise its activity by as much as 30% (0.1–0.5% ruthenium or 5% palladium). The controlling step is hydrogen activation ($E_{act} =$ 12–