

Obtaining olefins by hydrogenation of mixtures of carbon oxides at atmospheric pressure on catalytic systems from nanoparticles of group VIII metals

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Abstract

The reactions of hydrogenation of carbon dioxide and the mixture of carbon oxides in the bimetallic catalyst systems containing nano-particles of Fe, Co and Mn molded in inert media have been studied. It has been established that the ratio of saturated and unsaturated hydrocarbons in the products of hydrogenation and synergies are determined mainly by the number of atomic hydrogen that can migrate from one active center to another, as well as the structure of these centers. Differences in catalytic activity and selectivity of bimetallic samples are due to different rates of spillover of weakly bounded hydrogen (HI), as well as the speed of jump-over effect of CH radicals from one center to another where they are further hydrogenated.