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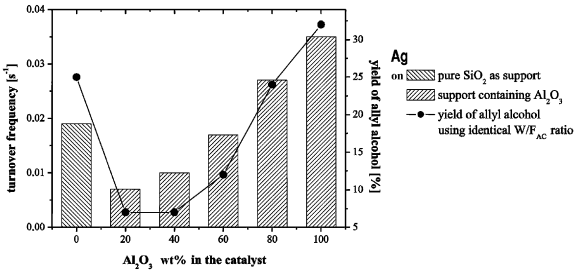
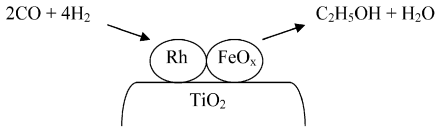
Journal of Catalysis Vol. 261, No. 1, 2009

Contents

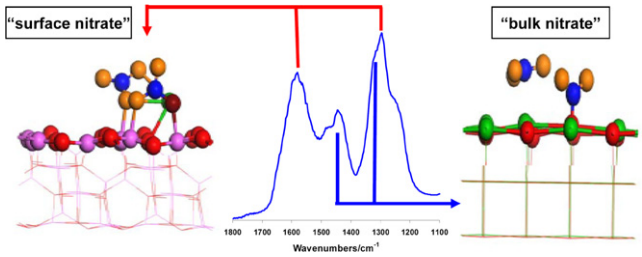
REGULAR ARTICLES



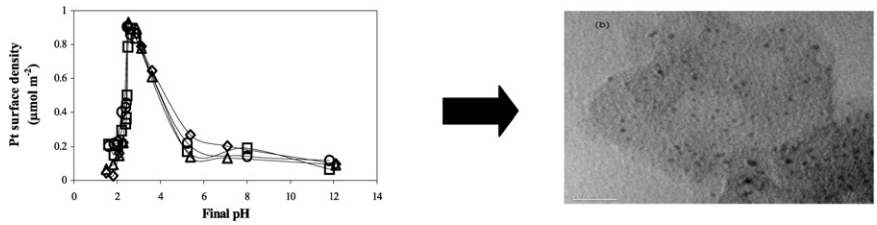
Hydrogenation of acrolein on $SiO_2–Al_2O_3$ supported Ag catalysts was studied in the gas phase to probe effects of support acidity on catalytic and structural properties. Brønsted acidity was not detected but Lewis acidity was influenced by support composition. Higher Al_2O_3 contents led to higher turnover rates and allyl alcohol yields.



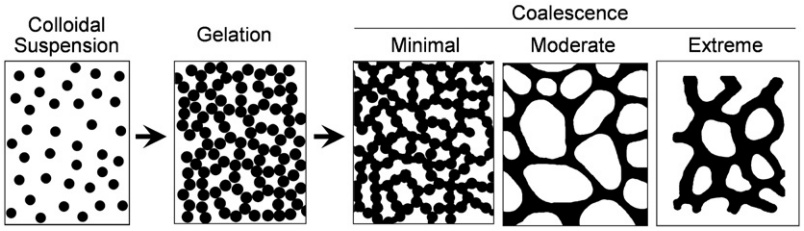
The influence of support, iron promoter loading reaction conditions such as temperature, pressure and H_2:CO ratio on the direct synthesis of ethanol from syngas over Rh metal nanoclusters were explored.



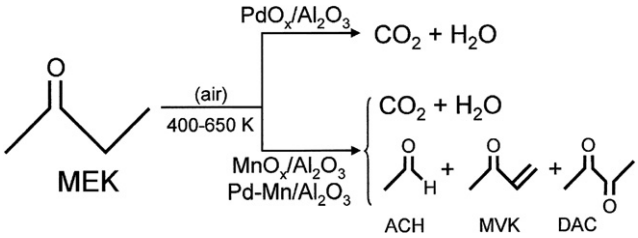
A combined experimental–theory investigation showed that isolated $(BaO)_x$ ($x = 1$ or 2) species interact strongly with Al^{3+}_{penta} on $\gamma\text{-}Al_2O_3(100)$ surfaces and react with NO_2 to form surface nitrates with characteristic vibrational spectra.



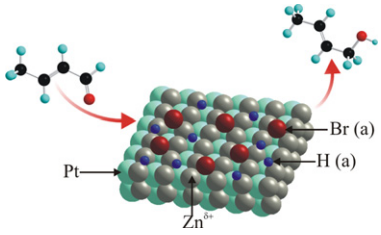
Highly-dispersed and loaded Pt/carbon catalysts with 1.1–1.3 nm cluster diameter were prepared by strong electrostatic adsorption of Pt salts to carbon xerogels.



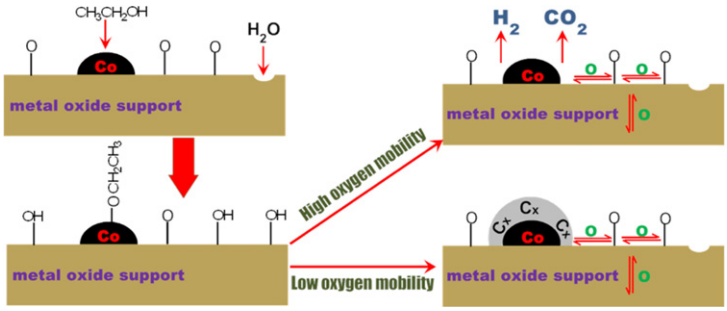
Coalescence of silica nanostructure causes loss of surface area, pore enlargement, matrix reinforcement, and transformation from convex to concave surfaces. These changes together with other porosity modifications of Phillips catalysts strongly influence polyethylene molecular weight and can be used to tailor products for specific applications.



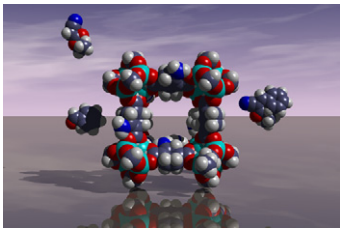
Methyl-ethyl-ketone (MEK) combustion on Pd/Al_2O_3 forms CO_2 and H_2O, but of MnO_x oxide promoters shift selectivity towards acetaldehyde methyl-vinyl-ketone and diacetyl.



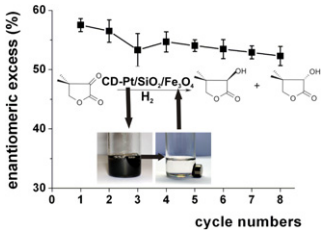
Adsorbed bromine species strongly promotes the intrinsic selectivity of the PtZn intermetallic catalysts for chemoselective hydrogenation of crotonaldehyde to crotyl alcohol.



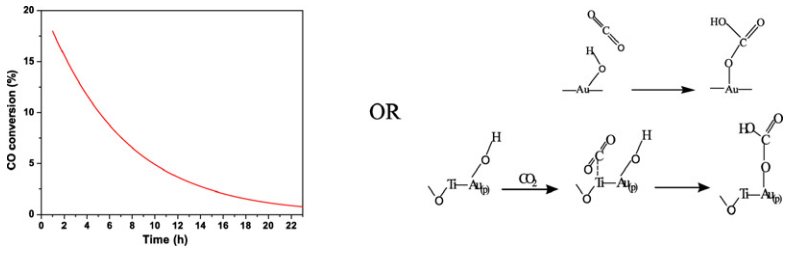
CeO_2 improves catalyst stability and reactivity for steam reforming predominantly because of its high oxygen mobility.



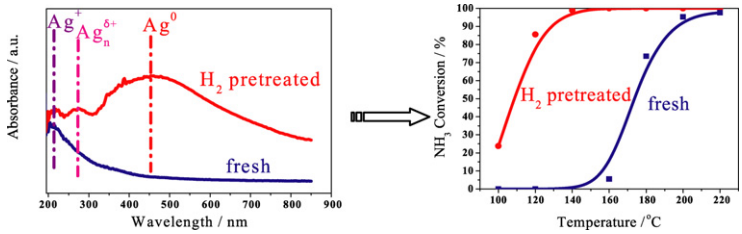
Metal organic frameworks (MOFs) with non-coordinated amino groups are shown to be stable solid basic catalysts. The performance of the IRMOF-3 catalysts demonstrates that the basicity of the aniline-like amino group is enhanced when incorporated inside the MOF structure.



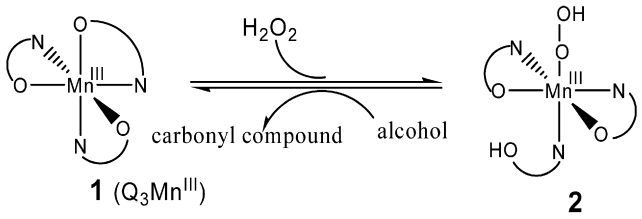
A chirally modified platinum catalyst supported on silica coated magnetite can be recovered by magnetic methods and its properties for asymmetric hydrogenation can be almost completely retained after several reaction cycles.



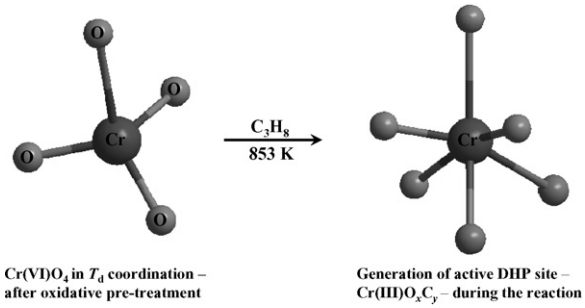
The formation of bicarbonate species on Au clusters on TiO_2 nanotubes causes deactivation during CO oxidation catalysis.



Various states of Ag species affected the low temperature activity of NH_3 oxidation over the Ag/Al_2O_3 catalysts significantly.



Hexadentate 8-quinolinolato Mn^{II} complexes are highly efficient catalysts for alcohol oxidation with aqueous H_2O_2 in acetone medium. A reasonable mechanism for the present catalytic system was proposed.



Active Cr sites for dehydrogenation of propane form *in situ* during reaction and that Cr is typically in (III) oxidation state.