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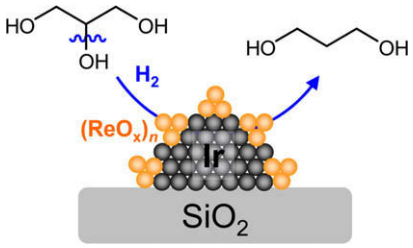
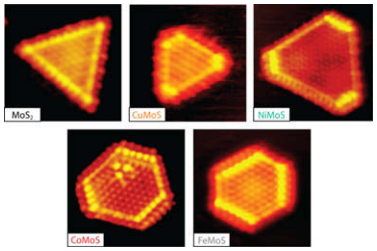
PRIORITY COMMUNICATION

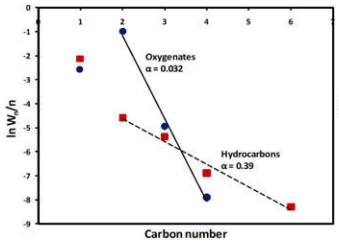


Silica-supported iridium particles modified with low-valent rhenium oxide clusters catalyze regioselective hydrogenolysis of glycerol to 1,3-propanediol in water.

REGULAR ARTICLES

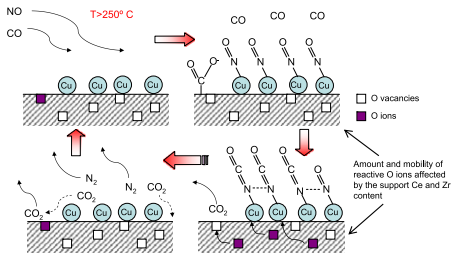


Using scanning tunneling microscopy (STM) and reactivity measurements, we determine a correlation between the atomic structure of transition metal-doped Me–Mo–S nanoclusters and the activity and selectivity in hydrotreating reactions.

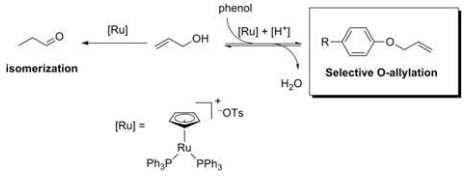


ASF plot for Rh-La/V/SiO_2 catalyst at 14 bar, 270 °C, H_2/CO = 2 and S.V. = 9000 scc/(hr.gcat)

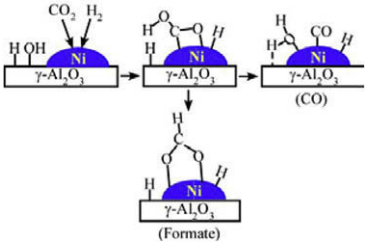
CO hydrogenation over La–V-oxide-promoted Rh/SiO_2 catalyst showed distinctly different chain growth factors (α) for oxygenates and hydrocarbons, suggesting that their formation either proceeds by different mechanisms or on different active sites.



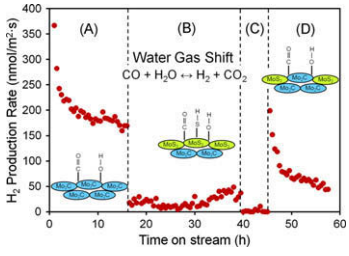
The catalytic reduction of NO by CO over flame-made $Cu/CexZr_1$-xO_2 nanocomposites reveals two different rate controlling temperature-dependent *de*NO*x* mechanisms: (1) Decomposition of N_2O by rapid activation of CO oxidation at low temperatures (150 °C<T<250 °C) and (2) decomposition of organo nitrogen at T>250 °C.



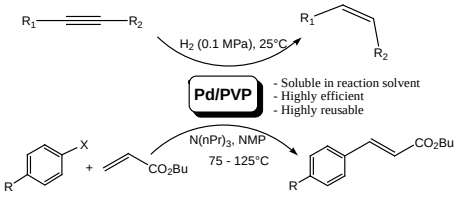
The highly active isomerization catalyst $[RuCp(PPh_3)_2](OTs)$ changes its catalytic action to the selective O-allylation of phenols with allyl alcohol upon addition of a catalytic amount of a strong acid.



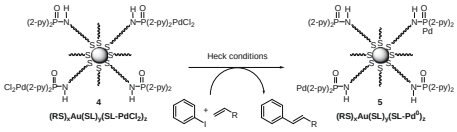
Hyroxylation of the γ-Al_2O_3 support alters the preference of CO_2 hydrogenation from formate to CO over the Ni/γ-Al_2O_3 catalyst.



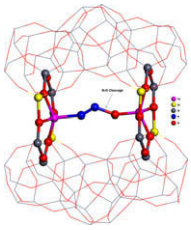
Sulfur exposure caused the Mo_2C surface to convert to MoS_2, which is moderately active for the water gas shift reaction. After recarburization in 15% CH_4/H_2, the surface consisted of Mo_2C and MoS_2 domains.



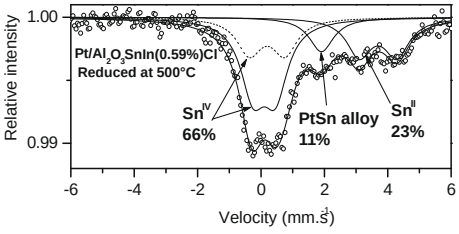
Monodispersed palladium nanoparticles stabilized by poly-(N-vinyl-2-pyrrolidone) were sinthesized by metal vapour synthesis. Pd-PVP systems, dissolved in reaction solvent, show excellent catalytic activity and selectivity in the semi-hydrogenation of alyphatic alkyns and good activity in Mizoroki-Heck C-C coupling. The catalytic systems can be easily recovered and reused in further runs.



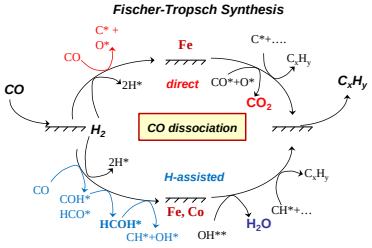
The partial palladation of the surface-supported spacer ligands on Au NPs affords a nonleaching hybrid system $(RS)_x Au(SL)_y(SL–PdCl_2)_z$ which is a highly efficient, quantitatively recoverable and effectively recyclable Heck catalyst.



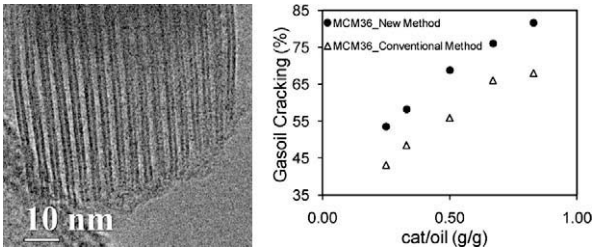
Two Fe(II) cations accommodated in two adjacent β sites of Fe-ferrierite form the active site responsible for the superior activity of Fe-ferrierite in the N_2O decomposition in the absence of NO.



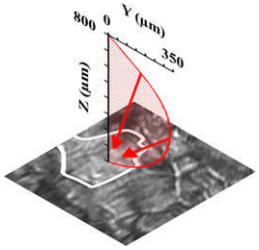
^{119}Sn Mössbauer spectroscopy analysis revealed that addition of indium to bimetallic Pt/Al_2O_3Sn-Cl naphtha-reforming catalysts leads to stronger Pt-Sn interactions in the form of Pt_xSn alloys. Indium addition decreases the total conversion in the *n*-heptane dehydrocyclisation reaction and decreases hydrogenolysis selectivity.



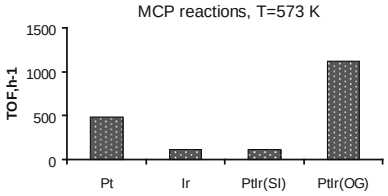
CO activation occurs predominantly by reaction with chemisorbed hydrogen before C–O bond cleavage with preferential rejection of oxygen as water on Fe and Co catalysts at conditions relevant to Fischer–Tropsch synthesis practice.



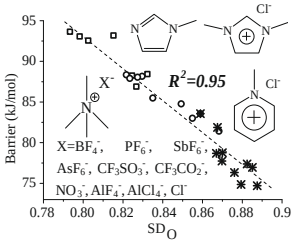
A method has been presented to prepare highly ordered MCM-36 materials without any structural destruction (see TEM). These pillared materials show higher catalytic activity compared to conventional MCM-36 materials.



Angular CO uptake associated with kinetic oscillations on a single grain (outlined in white) of a polycrystalline Pt foil. Ultimately, the expanse of the CO adsorption distribution above a single grain will determine the spatial limits for the synchronization of activity on distant grains and in turn global catalyst performance (p_{O_2} = 2.4 × 10^{-3} mbar, p_{CO} = 1.5 × 10^{-4} mbar, T = 534 K).



PtIr/Al_2O_3 catalysts were prepared adding Ir by successive impregnation (SI) or by organometallic grafting (OG). The OG catalyst (with PtIr active sites) was most active in methylcyclopentane ring opening.



The structure–reactivity relationships of 41 different acetylacetone–Fe catalysts were summarized. Some effective modification methods to enhance the reactivity were proposed.