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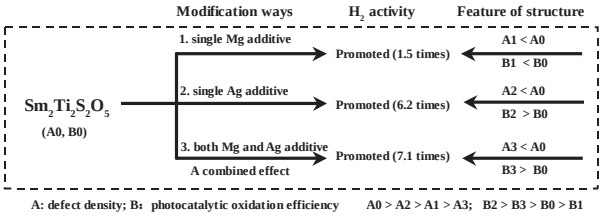
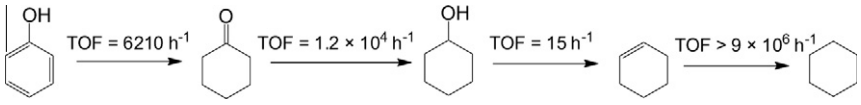
Contents

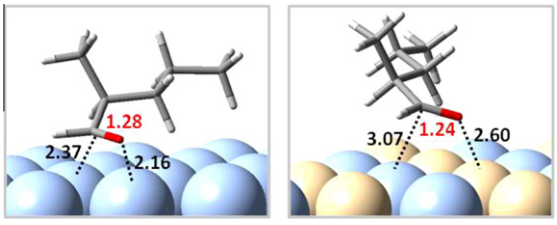
REGULAR ARTICLES



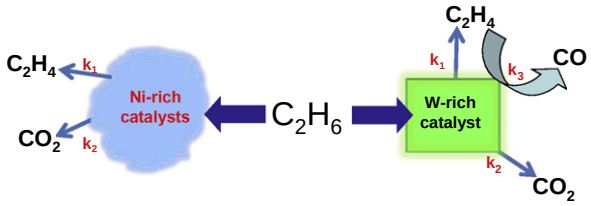
Metal ion modification of oxysulfide ($Sm_2Ti_2S_2O_5$) could efficiently promote photocatalytic H_2 evolution from Na_2S–Na_2SO_3 solution under visible light, and a further promotion originating from combined effect of Mg and Ag was demonstrated.



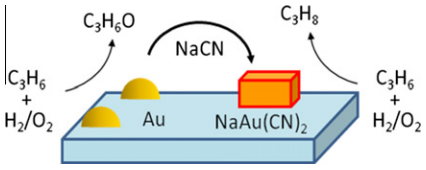
Hydrodeoxygenation of phenol and substituted phenols over dual-functional Pd/C and H_3PO_4 catalysts proceeds via stepwise hydrogenation of the aromatic ring, transformation of the cyclic enol to the corresponding ketone, hydrogenation of the cycloalkanone to the cycloalkanol and its subsequent dehydration as well as the hydrogenation of the formed cycloalkene.



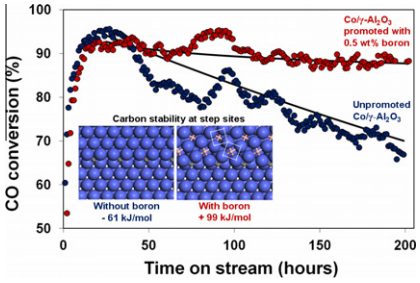
Methylpentanal on monometallic Pd and bimetallic Pd–Cu clusters adsorbed in an eta-2 configuration. This species is the precursor for the acyl species that results in decarbonylation. The presence of Cu greatly reduces the Pd–metal bond strength and the rate of aldehyde decarbonylation.



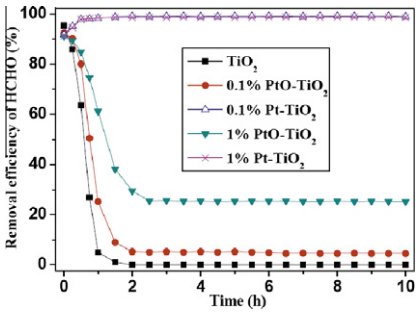
Ni–W–O mixed oxides have been tested in the oxidative dehydrogenation of ethane: ethane conversion influences ethylene selectivity in W-rich catalysts, while it hardly influences ethylene selectivity in Ni-rich catalysts.



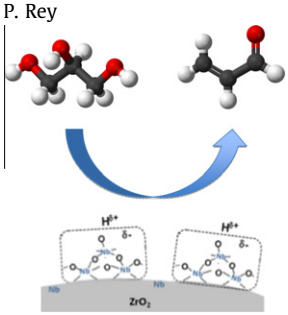
Treatment of gold samples supported on TS-1 with sodium cyanide solutions resulted in the precipitation of gold (I) cyanide. When this occurred, the selectivity of the reaction of propylene with hydrogen and oxygen mixtures shifted from propylene oxide to propylene, a selectivity characteristic of Pt.



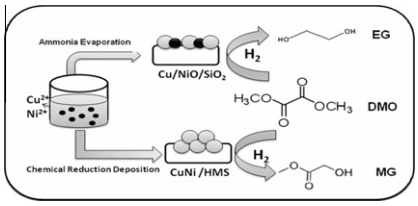
Boron promotion enhances the stability of Co/γ-Al2O3 catalysts during Fischer–Tropsch synthesis. Density functional theory shows that boron is stable near step sites and reduces carbon stability by 160 kJ/mol.



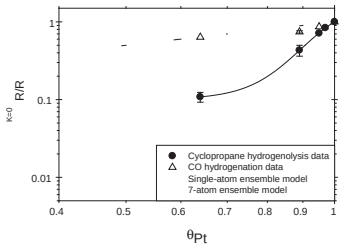
Nearly 100% HCHO conversion was obtained over the reduced Pt/TiO_2 catalysts even with 0.1% Pt loading. Metallic Pt rather than cationic Pt nanoparticles are the active centers for HCHO oxidation.



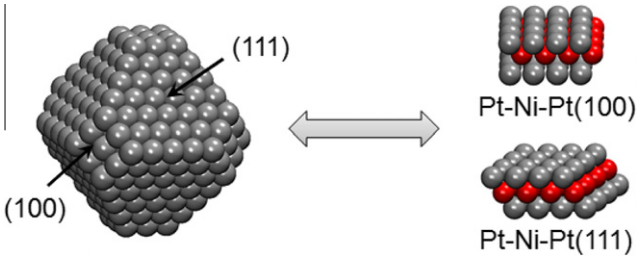
Zirconium and niobium mixed oxides have been shown to be selective catalysts for dehydration of glycerol to acrolein, at 300 °C in gas phase. The catalysts exhibit a selectivity to acrolein of approximately 72%, at nearly total glycerol conversion The New catalysts distinguish themselves by their unique stability on stream that make them promising for industrial application.



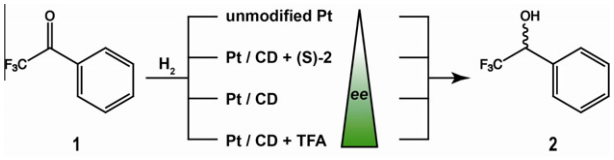
Cu–Ni/HMS catalyst exhibited excellent catalytic performance in chemoselective hydrogenation of dimethyloxalate. Methyl glycolate (MG) and ethylene glycol (EG) could be effectively obtained via tuning the surface chemical states of nickel species.



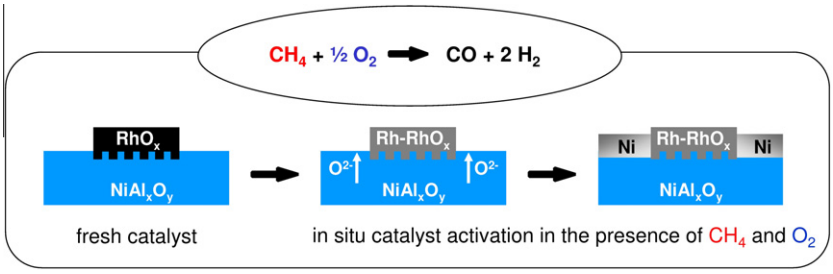
Although poisoning/blocking of Pt by K^+ appears to be non-uniform, reaction analysis strongly indicates the structure sensitivity of cyclopropane hydrogenolysis on Pt. Based on Martin's model, the ensemble size required for this hydrogenolysis reaction appears to be ca. 7, whereas the structure insensitive CO hydrogenation reaction requires an ensemble size of ca. 1.



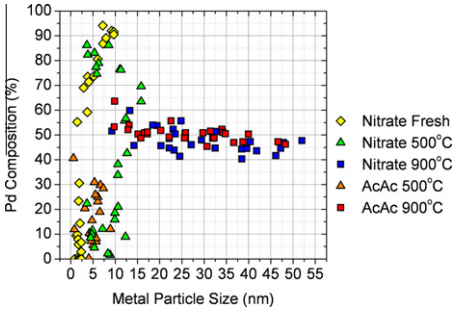
Experimental and theoretical studies are performed for the hydrogenation of cyclohexene on polycrystalline Ni/Pt bimetallic surfaces to bridge the materials gap between single crystal and more complex surfaces.



A combined catalytic and NMR study has uncovered a multiple cycle mechanism in the enantioselective hydrogenation of 2,2,2-trifluoroacetophenone (**1**) on cinchona-modified Pt. A key element is the involvement of the minor product (*S*)-1-phenyl-2,2,2-trifluoroethanol (**2**) in the enantioselection.

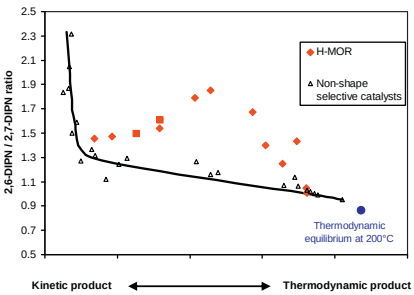


Mechanistic scheme of the synergetic effect of Rh on NiO_x(3 wt.%)/Al_2O_3 in the POM reaction.



High angle annular dark field imaging along with energy dispersive spectroscopy were used to study the evolution of metal particle size and composition in alumina-supported Pt-Pd NO oxidation catalysts made using two precursors, acetylacetonate (AcAc) and nitrate, aged under oxidizing conditions. In spite of distinctly different initial metal distributions, aging led to very similar characteristics for both precursors.

LETTERS TO THE EDITOR



Some experimental results obtained in alkylation of naphthalene to diisopropylnaphthalene over H-MOR cannot be explained by kinetics, thermodynamics and analytical errors, as suggested in the article mentioned in the title; therefore, shape-selective diisopropylation of naphthalene over H-mordenite is still the reality.