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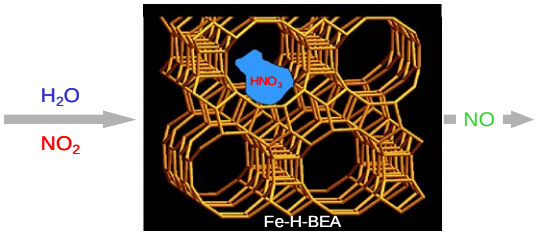
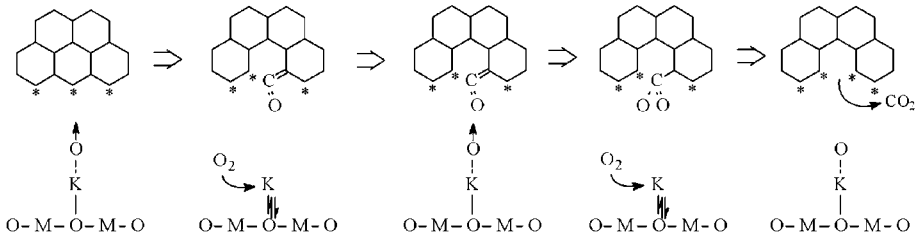
Contents

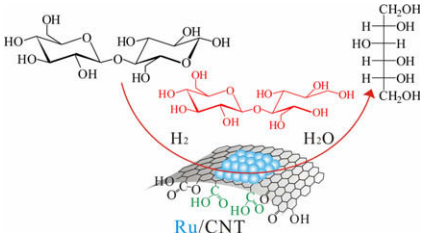
REGULAR ARTICLES



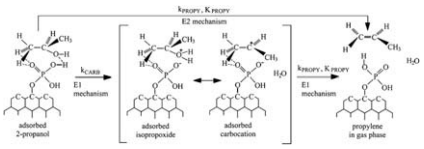
The use of operando FTIR indicates that the high efficiency for NO_2 removal from ambient air of iron-containing zeolites comes from their ability to condensate nitric acid.



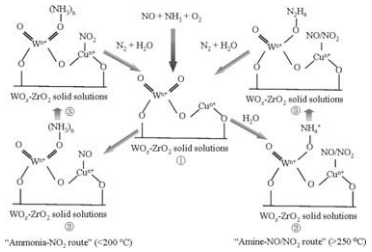
Potassium-supported Mg–Al hydrotalcite mixed oxides were much active and stable for soot combustion. The reaction mechanism was elucidated based on turnover frequency. M stands for Mg or Al.



The mean size of Ru nanoparticles and the catalyst acidity are key factors for Ru/CNT-catalyzed hydrogenation of cellobiose to sorbitol in water. 3-β-D-Glucopyranosyl-D-glucitol is a main reaction intermediate.

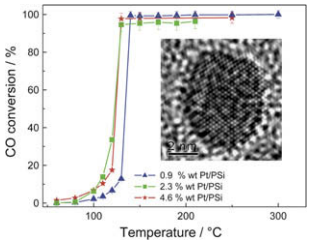


Activated carbons with high surface acidity were obtained in a single step by chemical activation of hemp residues with H_3PO_4 and used as catalysts for the dehydration reaction of 2-propanol.

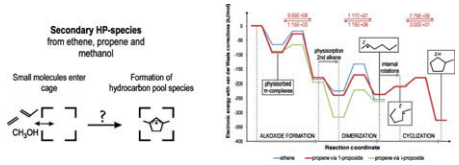


Two NH_3-SCR mechanisms on $CuO_x/WO_x–ZrO_2$ catalysts: ''ammonia–NO_2 route'' (<200 °C) and ''amine–NO/NO_2 route'' (>250 °C) related with Lewis and Brønsted acid sites.

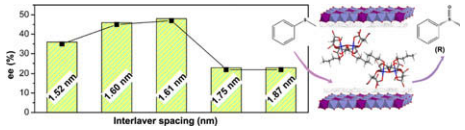
Efficient and stable solid catalysts with good catalytic properties in esterifications and acylation were successfully synthesized from sulfonation of swelling mesoporous polydivinylbenzenes (PDVB) by chlorosulfonic acid in CH_2Cl_2.



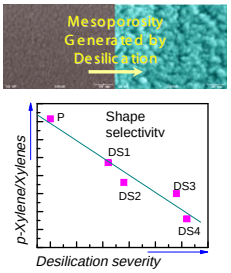
Sharp light-off in CO oxidation by Pt nanoparticles deposited onto porous silicon.



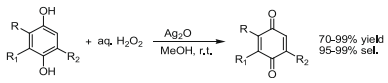
The formation of cyclic hydrocarbons from basic ethene and propene building blocks was investigated in protonated ZSM-5 using a 2-layered ONIOM(B3LYP/6-31+g(d):HF/6-31+g(d)) method including van der Waals corrections. A low-energy pathway starting from propene was found that eventually formed the methylcyclopentane species via intermediate stepwise dimerization.



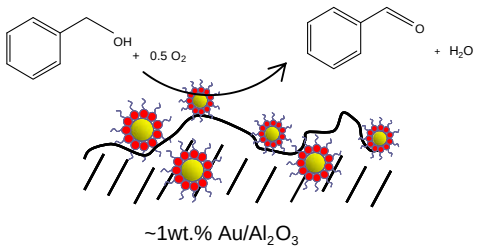
The titanium tartrate complex constrained in the flexible bidimensional LDH interlayer region shows enhanced asymmetric induction in the heterogeneous sulfoxidation of pro-chiral methyl phenyl sulfide.



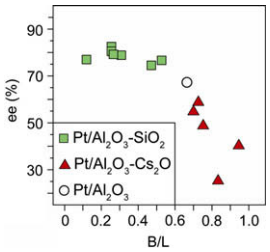
Conversion of propanal to gasoline-range molecules was investigated over a series of HZSM-5 catalysts with controlled mesoporosity generated by desilication. The catalytic selectivity and stability were discussed based on the pore structure, acidity, and diffusivity.



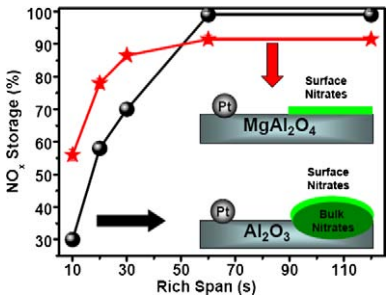
The Ag_2O catalyzed selective oxidation of hydroquinones to benzoquinones with aq. 30% H_2O_2 can be efficiently performed under batch and continuous-flow conditions.



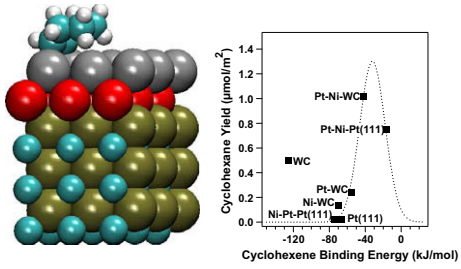
Weakly bound capping agents lower the accessibility to the active sites and may act as catalyst surface poison. An appropriate capping agent is one weakly adsorbed on the particle and that promotes polycrystallinity, *viz.* poly(vinyl-pyrrolidone).



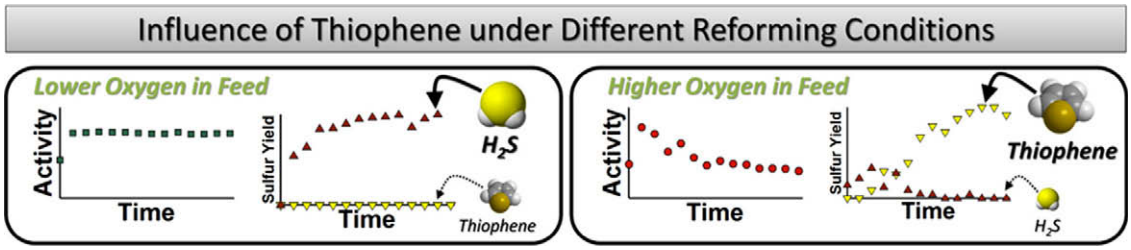
Acid–base properties of flame-made Pt/Al_2O_3 were varied by doping with SiO_2 or Cs_2O. Enantioselectivities in the hydrogenation of ketones are correlated to the ratio of bridged to linearly adsorbed CO (B/L).



Flame-derived $Pt/MgAl_2O_4$ shows improved dynamical behavior at short regeneration times in NO_x storage-reduction compared to $Pt–Ba/Al_2O_3$ reference catalyst.



The feasibility of replacing bulk Pt with W in a Pt-Ni-Pt bimetallic structure is examined. The results indicate that Pt-Ni-WC has chemical properties similar to Pt-Ni-Pt with an enhanced stability.



The performance of a Ni-based catalyst was studied under thiophene-exposed isooctane reforming at various O/C and H_2O/C ratios. The reforming conditions have a strong influence on sulfur tolerance.

CORRIGENDUM