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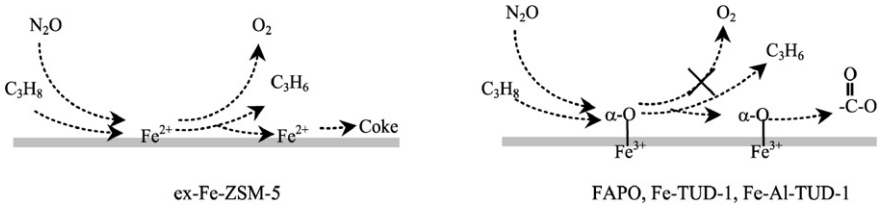
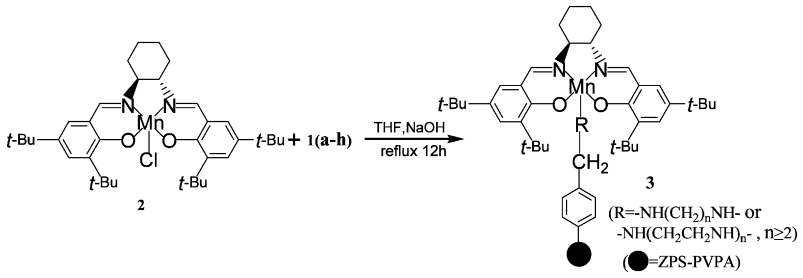
Contents

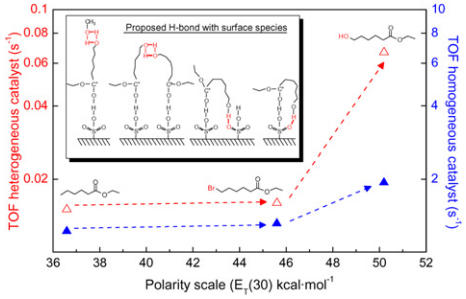
REGULAR ARTICLES



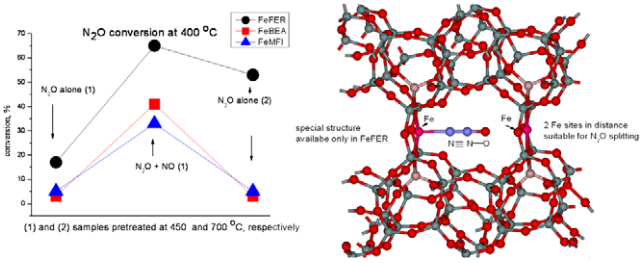
N_2O mediated propane oxidation pathway over reduced (left) and oxidized (right) Fe-sites in micro- and mesoporous materials.



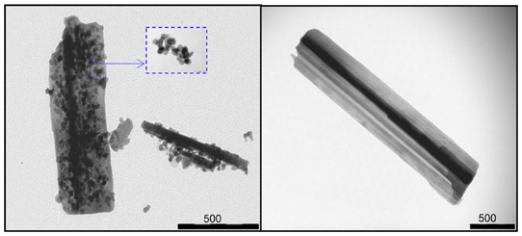
New types of ZAMPS-PVPA-immobilized chiral salen Mn(III) complexes were synthesized and used as catalysts in the asymmetric epoxidation of unfunctionalized olefins.



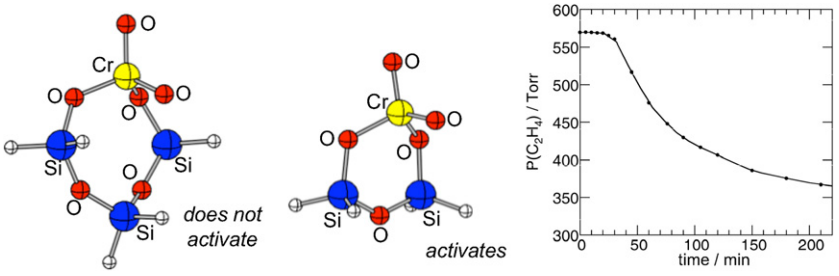
Ester methanolysis reaction rate on solid acid catalysts is accelerated when the ester has a polar group with capacity to form H-bonds with surface species whereas is rather unaffected when the polar group cannot establish the H-bonds.



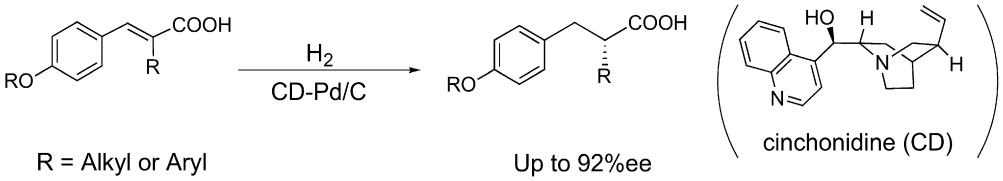
DFT model of the proposed active site for the N_2O decomposition over Fe-FER. This local structure with unique spatial properties could provide for N_2O splitting by mutual action of two adjacent iron cations in Fe-FER.



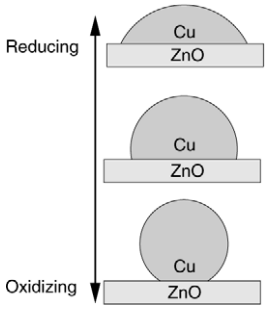
The preparation method of M1-pure containing MoVSbO catalysts strongly influences both the surface composition and the number of effective sites of M1 crystals, which determines their catalytic behavior in the propane selective oxidation to acrylic acid.

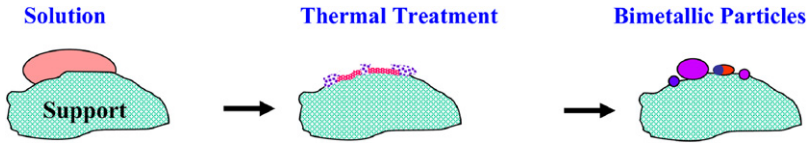


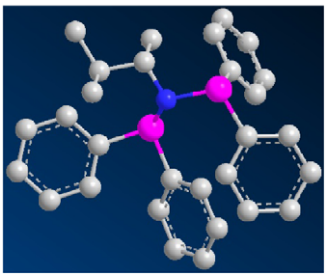
XANES suggests that the uniform chromate sites formed by grafting chromyl chloride onto silicas pretreated at low and high temperatures differ in the size of their chromasiloxane rings, and in the ability of these sites to initiate ethylene polymerization.

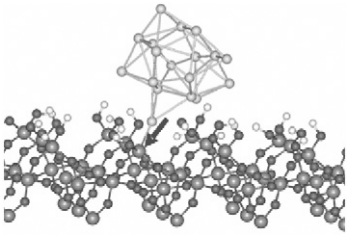


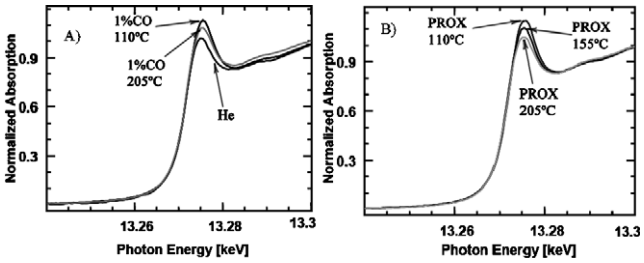
Relationship between substrate structure and enantioselectivity was studied with 42 different (*E*)-α,β-disubstituted acrylic acids for the hydrogenation over cinchonidine-modified Pd/C. The high ee was achieved with the β-*p*-alkoxyphenyl analogues.



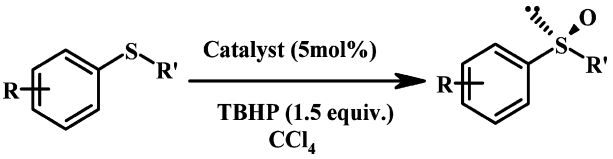




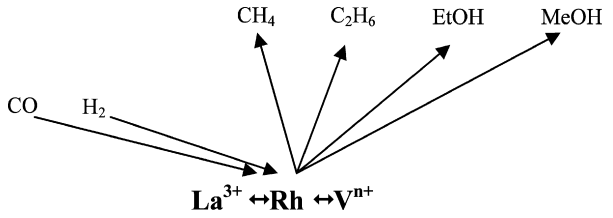




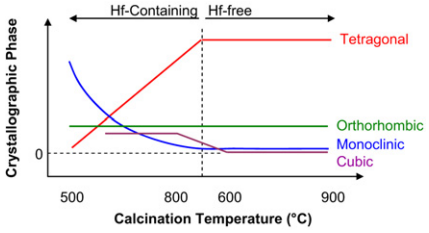
XANES results of the Pt/Nb/Al_2O_3 catalysts under CO (A) and PROX (B) reaction conditions suggest that their surface is complex, containing reduced and oxidized Pt, which is modified by NbO_x species either surrounding the Pt crystallites or decorating them.



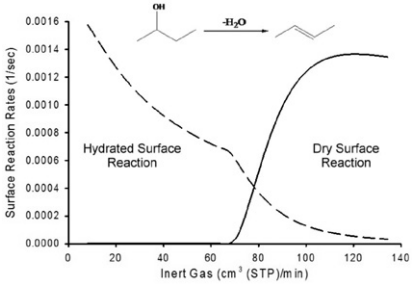
A supported ionic liquid strategy has been applied for the immobilization of chiral Ti–binol complex onto mesoporous silica. This catalyst system was utilized in the synthesis of chiral sulfoxides. This catalyst can be recovered and recycled for eight times without any loss of activity and enantioselectivity.



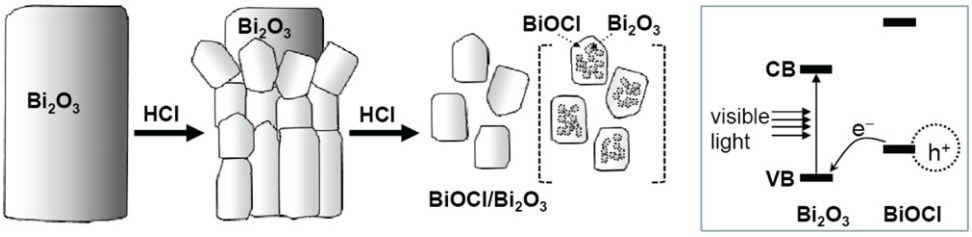
The combined promoting effect of La and V oxides for ethanol formation during CO hydrogenation on silica-supported Rh catalysts is reported.



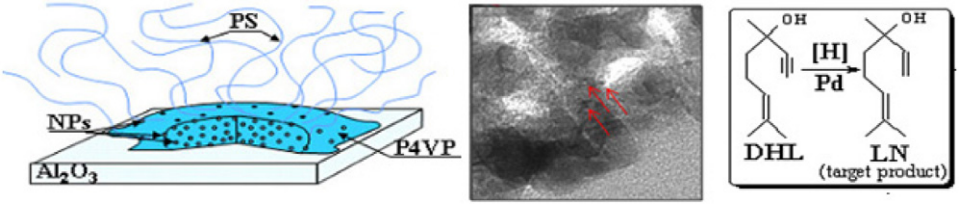
Hafnium impurities require high calcination temperatures to produce catalytically active tetragonal zirconia. The addition of aluminum also reduces the detrimental effect of hafnium on crystal structure.



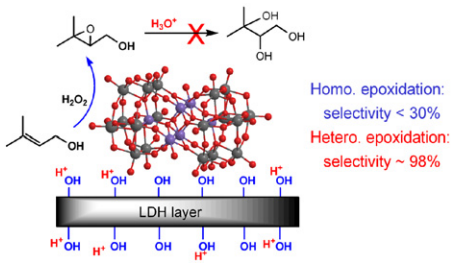
A kinetic model is able to seamlessly predict the transition from a mixed vapor–liquid regime to a completely vaporized regime for butane dehydration in the presence of water.



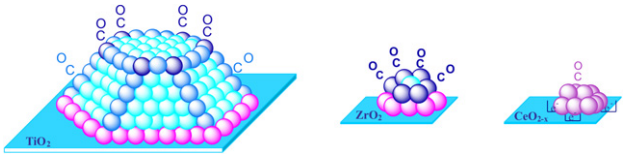
In the present study, we report that the heterojunction structure between BiOCl and Bi_2O_3 can be an efficient photocatalyst under visible light irradiation, even though individual BiOCl and Bi_2O_3 show very low photocatalytic efficiency.



Influence of heterogenization on catalytic properties of block copolymer micellar catalysts derived from polystyrene-*block*-poly-4-vinylpyridine and containing Pd monometallic and bimetallic PdAu, PdPt, and PdZn nanoparticles have been studied in selective hydrogenation of the triple bond of 3,7-dimethyloctaen-6-yne-1-ol-3 (dehydrolinalool).

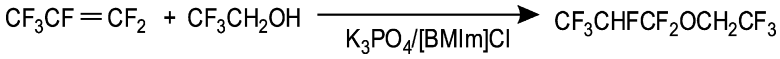


Layered double hydroxides (LDH)-hosted polyoxometalate (POM) catalysts show much higher epoxide selectivity than the corresponding homogeneous POM catalysts, which can be attributed to the beneficial effect of basic LDH host on the suppression of the acid-catalyzed epoxide hydrolysis.



^{12}CO and ^{12}CO–^{13}CO FTIR absorption spectra combined with quantitative chemisorption data pointed out the relationship between the nanostructure and the physical/chemical properties of Au catalysts supported on group IV oxides. On Au/TiO_2, the CO adsorbing sites are mutually interacting edge and corner sites of Au metallic particles, while on Au/ZrO_2, the adsorbing sites are mutually interacting corners of non metallic Au nanoclusters. Finally, almost isolated and negatively charged Au nanoclusters have been evidenced on CeO_2. The differences between the absorption coefficients of CO on Au sites have been discussed. On all samples, by contacting CO–$^{18}O_2$ at 90 K, only $C^{16}O^{18}O$ is produced, suggesting that only the gold sites are involved in the activation of both molecules.

RESEARCH NOTE



$CF_3CHFCF_2OCH_2CF_3$ was obtained in high yield and selectivity from the hydroalkoxylation reaction of hexafluoropropene with 2,2,2-trifluoroethanol in the presence of a catalytic system consisting of K_3PO_4 and [BMIm]Cl.