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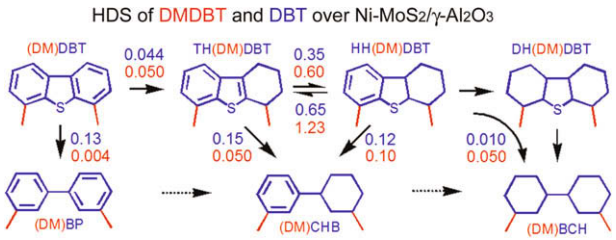
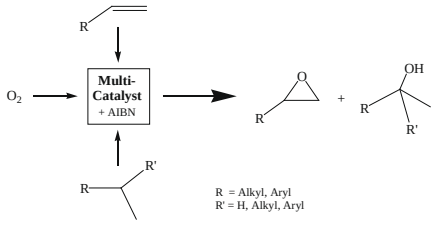
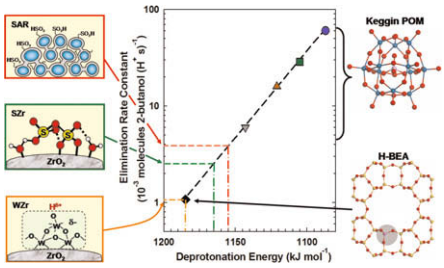
Contents



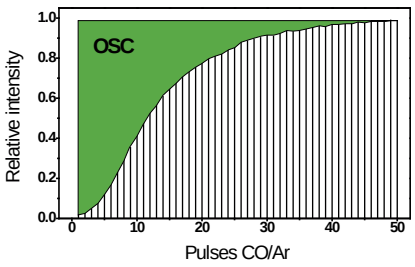
Rate constants in kPa mol/(g min) for the reaction steps in the HDS of DBT (in blue) and 4,6-DMDBT (in red) over Ni–MoS_2/γ-Al_2O_3.



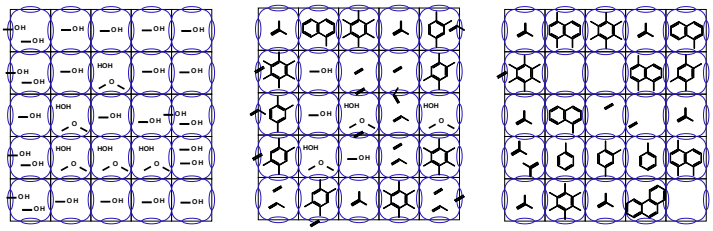
Aerobic epoxidation of alkenes was efficiently performed through an alternative cascade-type reaction using nano-particulated Au/CeO_2 and Ti-MCM-41 silylated materials in the presence of a hydrocarbon and a promoter.



The acid strength of solid acids with uncertain structure was determined from elimination and isomerization rate constants using their sensitivity to deprotonation energies, established independently for catalysts with known structures.

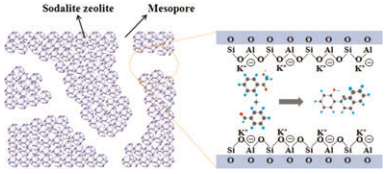


The presence of stable oxygen on a Au/TiO_2 catalyst removable by reaction with CO ('oxygen storage capacity') was demonstrated by TAP measurements, and for catalysts with varying Au particle size, it was shown to be correlated with the CO oxidation activity and the perimeter length of the Au/TiO_2 interface.



Three stages in the MTO life cycle: Left: Reactant adsorption. Middle: Active intermediates give product formation in crystal rim. Right: Bulky product molecules give (poly-) aromatics formation in crystal core.

RESEARCH NOTE



Sodalite with high mesoporosity was successfully synthesized. This basic catalyst showed a higher activity and longer lifetime than CsNaX and KAlMCM-41in liquid and vapor phase organic transformations.