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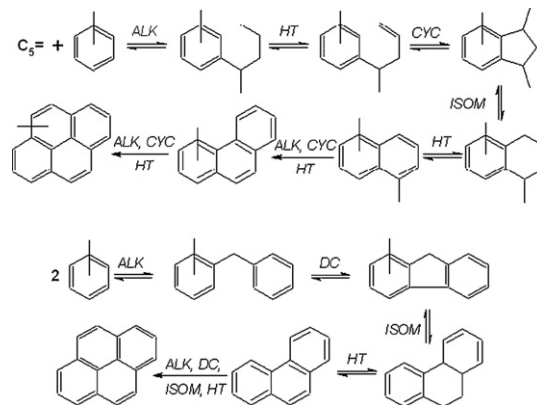
Articles

H.S. Cerqueira, G. Caeiro, L. Costa,
F. Ramôa Ribeiro

Journal of Molecular Catalysis A: Chemical 292 (2008) 1

Deactivation of FCC catalysts

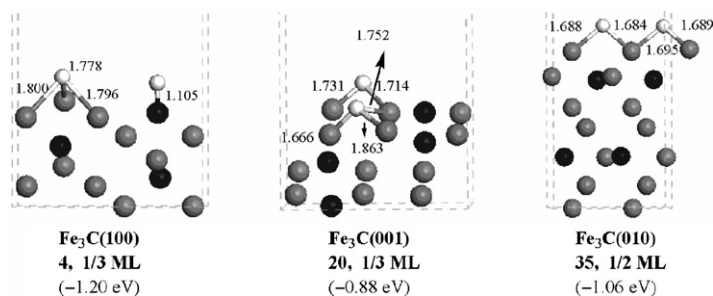
We review the deactivation of HY zeolite and FCC catalysts from a fundamental as well as an applied point of view. Aspects related to the various causes of FCC catalysts (and additives) deactivation under industrial conditions, such as coking, contaminants present in the feedstock or zeolite dealumination, are also summarized.



Xiao-Yuan Liao, Sheng-Guang Wang,
Zhong-Yun Ma, Jianguo Wang, Yong-Wang Li,
Haijun Jiao

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Density functional theory study of H₂ adsorption on the (1 0 0), (0 0 1) and (0 1 0) surfaces of Fe₃C

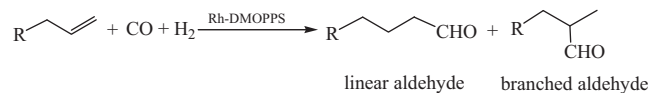


Haiyan Fu, Min Li, Jun Chen, Ruimin Zhang,
Weidong Jiang, Maolin Yuan, Hua Chen,
Xianjun Li

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Application of a new amphiphilic phosphine in the aqueous biphasic catalytic hydroformylation of long chain olefins

The preparation of a new surface-active phosphine-sodium salt of sulfonated *n*-C₁₂H₂₅OC₆H₄P(C₆H₄-*p*-CH₃O)₂ (DMOPPS) and its application in the aqueous biphasic catalytic hydroformylation of long chain olefins were reported. The ligand exhibits a surface-active property which could significantly enhance the reaction rate. Compared with previous RhCl(CO)(TPPTS)₂-TPPTS-surfactant system, the RhCl(CO)(TPPTS)₂-DMOPPS system shows better catalytic performances.

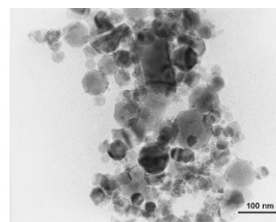
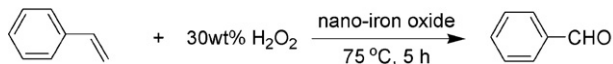
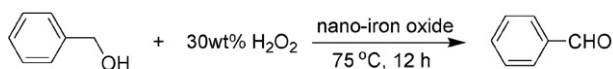


**Feng Shi, Man Kin Tse, Marga-Matina Pohl,
Jörg Radnik, Angelika Brückner,
Shengmao Zhang, Matthias Beller**

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Nano-iron oxide-catalyzed selective oxidations of alcohols and olefins with hydrogen peroxide

Nano- γ - Fe_2O_3 is shown to be an active, stable and selective catalyst for the oxidation of alcohols and styrenes with hydrogen peroxide as terminal oxidant.

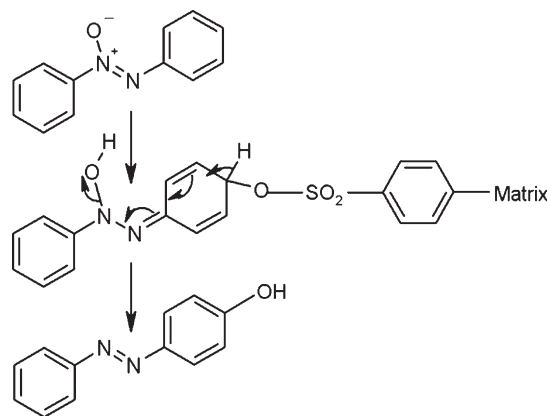


**Andrzej A. Domański, Rudolf Słota,
Gabriela Dyrda, Małgorzata A. Broda**

Journal of Molecular Catalysis A: Chemical 292 (2008) 36

Azoxybenzene rearrangement catalyzed by solid acids

Rearrangement of azoxybenzenes may be catalyzed by sulfonated polystyrene resins in non-polar solvents. The substrate conversion occurs within the bulk of the resin's matrix and the product depends on the azoxybenzene derivative used for the reaction. Crucial to this heterogeneous process is the formation of a quinoid intermediate resulting from interactions of azoxybenzene molecules with the sulfonic groups of the resin.

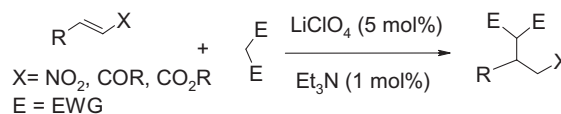


**Mohammad R. Saidi, Najmedin Azizi,
Elham Akbari, Forogh Ebrahimi**

Journal of Molecular Catalysis A: Chemical 292 (2008) 44

$\text{LiCO}_4/\text{Et}_3\text{N}$: Highly efficient and active catalyst for selective Michael addition of active methylene compounds under solvent-free condition

A simple catalyst $\text{LiClO}_4/\text{Et}_3\text{N}$ has been developed and demonstrated to efficiently catalyze Michael addition reactions of active methylene compounds to conjugated ketones, nitriles, esters and nitroalkenes with remarkably high yields and short reaction time. The Michael addition to nitroalkenes and α,β -unsaturated ketones proceeds quantitatively in the usual way, giving the *mono*addition products.

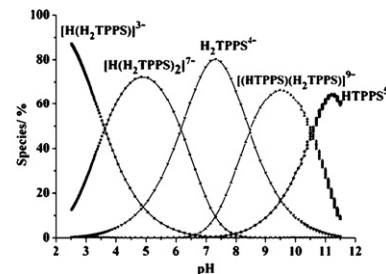
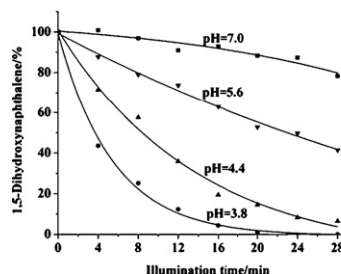


**Jin-Hua Cai, Jin-Wang Huang, Ping Zhao,
Ying-Hua Zhou, Han-Cheng Yu, Liang-Nian Ji**

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Photodegradation of 1,5-dihydroxynaphthalene catalyzed by meso-tetra(4-sulfonatophenyl)porphyrin in aerated aqueous solution

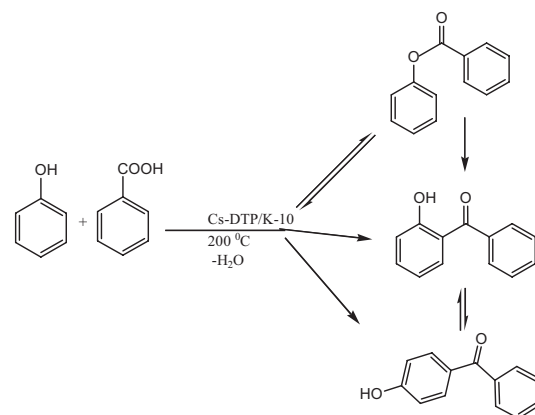
The photodegradation of 1,5-dihydroxynaphthalene catalyzed by meso-tetra(4-sulfonatophenyl)porphyrin ($\text{H}_2\text{TPPS}^{4-}$) under visible light irradiation in aerated aqueous solution has been studied. Considering the dependence of the photodegradation to the pH and the species distribution of $\text{H}_2\text{TPPS}^{4-}$ in solution, it is suggested that the mono-protonated monomeric species $[\text{H}(\text{H}_2\text{TPPS})]^{3-}$ is the main active species of $\text{H}_2\text{TPPS}^{4-}$ to catalyze photodegradation of 1,5-dihydroxynaphthalene.



Ganapati D. Yadav, Ginish George*Journal of Molecular Catalysis A: Chemical* 292 (2008) 54

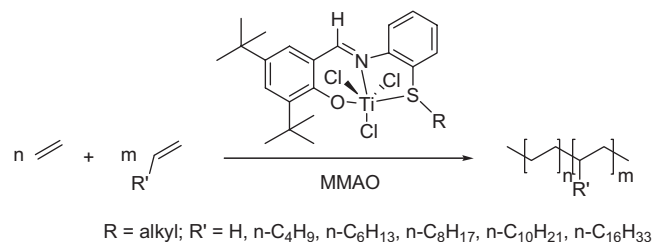
Single step synthesis of 4-hydroxybenzophenone via esterification and Fries rearrangement: Novelty of cesium substituted heteropoly acid supported on clay

Among various catalysts, 20% (w/w) $\text{Cs}_{2.5}\text{H}_{0.5}\text{P}_{12}\text{W}_{40}/\text{K-10}$ leads to a conversion of 70% in 3 h at 200 °C for a benzoic acid to phenol mole ratio of 1:7 and a catalyst loading of 0.05 g/cm³ in a single pot synthesis. The best selectivity for 4-hydroxybenzophenone was 32.5%.


**Ming-Li Gao, Yue-Feng Gu, Cong Wang,
Xiao-Li Yao, Xiu-Li Sun, Chuan-Feng Li,
Chang-Tao Qian, Bo Liu, Zhi Ma, Yong Tang,
Zuowei Xie, Shi-Zheng Bu, Yuan Gao**
Journal of Molecular Catalysis A: Chemical 292 (2008) 62

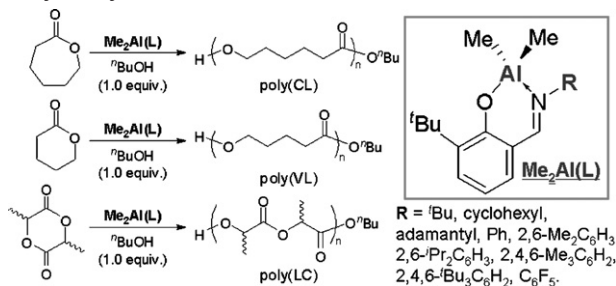
Ethylene homopolymerization and copolymerization with α -olefins catalyzed by titanium complexes bearing [O⁻NS^R] tridentate ligands

In the presence of MMAO, the [O⁻NS^R]TiCl₃ complexes containing phenoxyimine ligands with appended alkylthio groups were very active catalysts for ethylene homo- and copolymerization with α -olefin. Steric hindrance of the alkylthio groups (SR) was proved to strongly influence the polymerization behavior. Comparisons between alkylthio and arylthio substituents on catalyst performance were also discussed.

**Naruhito Iwasa, Michiya Fujiki, Kotohiro Nomura***Journal of Molecular Catalysis A: Chemical* 292 (2008) 67

Ring-opening polymerization of various cyclic esters by Al complex catalysts containing a series of phenoxy-imine ligands: Effect of the imino substituents for the catalytic activity

Ring-opening polymerizations of ϵ -caprolactone (CL), δ -valerolactone (VL), *rac*-lactide using $\text{Me}_2\text{Al}[\text{O}-2\text{-}^t\text{Bu}-6\text{-(RN=CH)C}_6\text{H}_3]$ (R=^tBu, cyclohexyl, adamantyl, C₆H₅, 2,6-Me₂C₆H₃, 2,6-^tPr₂C₆H₃, 2,4,6-Me₃C₆H₂, 2,4,6-^tBu₃C₆H₂, C₆F₅) have been explored in the presence of ^tBuOH. The imino substituents strongly affect toward both the activity and the catalyst efficiency; the C₆F₅ analogue was most effective and the polymerizations of CL and VL proceeded in a living manner.

**R.M. Van Natter, J.S. Coleman, C.R.F. Lund***Journal of Molecular Catalysis A: Chemical* 292 (2008) 76

DFT models for active sites on high temperature water-gas shift catalysts

The active sites on iron oxide shift catalysts were modeled using density functional theory. Comparison of the calculated heat of localization of oxygen adatoms to values derived from experimental kinetics suggest that on average, the active site on the working catalyst is coordinated to 3.2 oxygen anions in addition to the oxygen adatom.

