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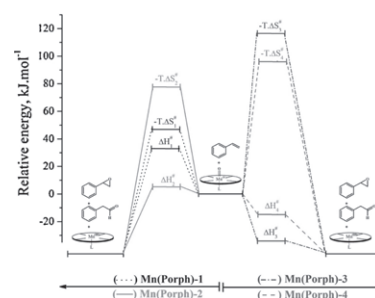
Articles

Rodrigo De Paula, Mário M.Q. Simões, M. Graça P.M.S. Neves, José A.S. Cavaleiro

Journal of Molecular Catalysis A: Chemical 345 (2011) 1

Oxidation of styrene and of some derivatives with H_2O_2 catalyzed by novel imidazolium-containing manganese porphyrins: A mechanistic and thermodynamic interpretation

► Thermodynamic activation parameters are affected by catalysts structural differences. ► Structural differences also change products' selectivity. ► Hammett analysis provided small ρ -values. ► Results fit with a concerted reaction pathway, starting from an oxene-type approach. ► The determining step is a $[\pi 2_a + \pi 2_s]$ metal-looxetane intermediate.

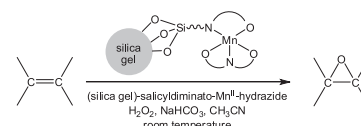


Massomeh Ghorbanloo, Hassan Hosseini Monfared, Christoph Janiak

Journal of Molecular Catalysis A: Chemical 345 (2011) 12

The catalytic function of a silica gel-immobilized Mn(II)-hydrazide complex for alkene epoxidation with H_2O_2

► A Mn(II)-hydrazone complex has been anchored on the surface of a silica gel. ► This compound is a stable and recyclable heterogeneous catalyst. ► This catalyst is a very active in epoxidation reactions with $H_2O_2/CH_3CN/NaHCO_3$. ► Cycloalkenes were oxidized to their epoxides with excellent selectivity. ► This catalytic system showed good activities in the epoxidation of linear alkenes.

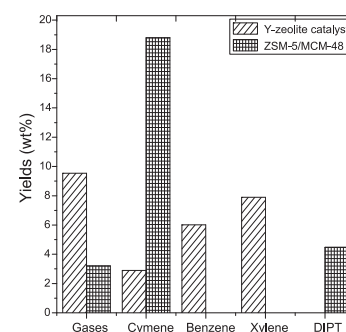


T. Odedairo, R.J. Balasamy, S. Al-Khattaf

Journal of Molecular Catalysis A: Chemical 345 (2011) 21

Influence of mesoporous materials containing ZSM-5 on alkylation and cracking reactions

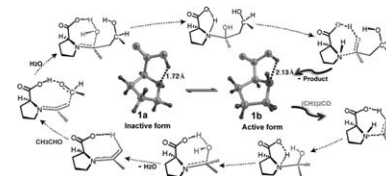
► Mesopores containing ZSM-5 is reported for alkylation and cracking reactions. ► Presence of mesopores led to a high 1,3,5-TIPB conversion. ► Acidity as well as pore size of catalysts plays a crucial role in the cracking reaction.



Manjaly J. Ajitha, Cherumuttathu H. Suresh*Journal of Molecular Catalysis A: Chemical* 345 (2011) 37

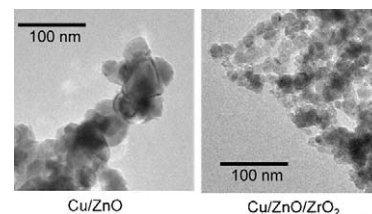
A higher energy conformer of (*S*)-proline is the active catalyst in intermolecular aldol reaction: Evidence from DFT calculations

► Theoretical revisiting of (*S*)-proline catalyzed intermolecular aldol reaction. ► Higher energy conformer of (*S*)-proline is found to be the active catalyst. ► The mechanism passes through eight proton transfer transition states. ► Hydrogen bond catalysis.

**Yasuyuki Matsumura, Hideomi Ishibe***Journal of Molecular Catalysis A: Chemical* 345 (2011) 44

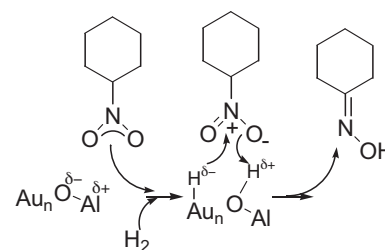
Effect of zirconium oxide added to Cu/ZnO catalyst for steam reforming of methanol to hydrogen

► Addition of ZrO₂ to Cu/ZnO improves the activity to methanol steam reforming. ► Addition of ZrO₂ reduces particle sizes of Cu and ZnO. ► ZrO₂ does not directly enhance surface activity of Cu/ZnO/ZrO₂. ► Strong contact between Cu and ZnO particles increases activity. ► ZrO₂ particles mitigate structural change of Cu and ZnO at 400°C.

**Ken-ichi Shimizu, Takumi Yamamoto, Yutaka Tai, Atsushi Satsuma***Journal of Molecular Catalysis A: Chemical* 345 (2011) 54

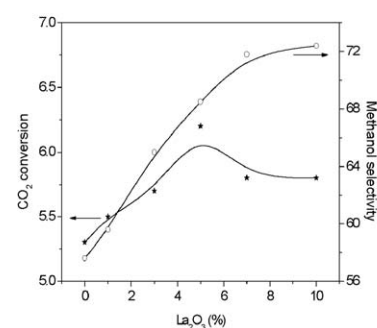
Selective hydrogenation of nitrocyclohexane to cyclohexanone oxime by alumina-supported gold cluster catalysts

► Au/Al₂O₃ shows higher selectivity of cyclo-hexanone oxime than the standard Au catalyst, Au/TiO₂. ► This is the first successful example of heterogeneous Au catalyst for the title reaction. ► Smaller Au size and acid–base bifunctional support result in higher catalytic efficiency. ► Mechanistic studies suggest a cooperation of AuCUS sites and the acid–base pair site of Al₂O₃.

**Xiaoming Guo, Dongsan Mao, Guanzhong Lu, Song Wang, Guisheng Wu***Journal of Molecular Catalysis A: Chemical* 345 (2011) 60

The influence of La doping on the catalytic behavior of Cu/ZrO₂ for methanol synthesis from CO₂ hydrogenation

► The presence of La favors the production of methanol. The introduction of La affects the Cu surface area of catalyst. ► The introduction of La affects the basicity of catalyst. ► A linear relationship exists between CO₂ conversion and the Cu surface area. ► The methanol selectivity is related to the distribution of basic sites of catalyst.

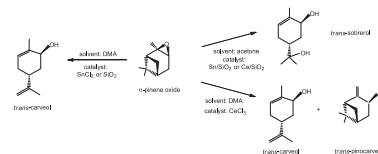


Vinícius V. Costa, Kelly A. da Silva Rocha, Líniker F. de Sousa, Patricia A. Robles-Dutenhefner, Elena V. Gusevskaya

Journal of Molecular Catalysis A: Chemical 345 (2011) 69

Isomerization of α -pinene oxide over cerium and tin catalysts: Selective synthesis of *trans*-carveol and *trans*-sobreolol

► Mesoporous molecular sieves Sn/SiO₂ and Ce/SiO₂ were prepared by a sol-gel method. ► Both materials catalyze the liquid-phase isomerization/hydration of α -pinene oxide. ► Reaction selectivity is determined by the polarity and basicity of the solvent. ► In weakly basic acetone, the reactions gave *trans*-sobreolol in high yields. ► In dimethylacetamide, which is a basic solvent, the main product was *trans*-carveol.

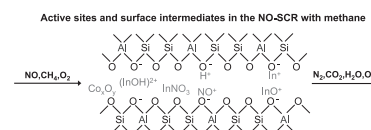


Ferenc Lónyi, Hanna E. Solt, József Valyon, Alicia Boix, Laura B. Gutierrez

Journal of Molecular Catalysis A: Chemical 345 (2011) 75

The activation of NO and CH₄ for NO-SCR reaction over In- and Co-containing H-ZSM-5 catalysts

► InO⁺/In⁺ redox couple is the NO-SCR active site of In,H-zeolites. ► Methane is activated for NO-SCR over zeolite-bound NO⁺ and NO₃⁻ surface intermediates. ► Surface intermediates are formed in reaction of NO/NO₂ and In,H-zeolite. ► Zeolite Brønsted acid sites promote NO/NO₂ formation from NO/O₂ (NO-COX reaction) ► Co-oxide additive enhances the NO-COX activity of H- and In, H-zeolite catalysts.

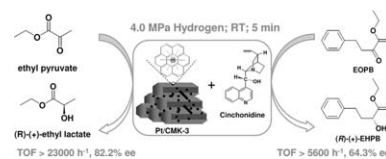


Bo Li, Xiaohong Li, Hongna Wang, Peng Wu

Journal of Molecular Catalysis A: Chemical 345 (2011) 81

Pt nanoparticles entrapped in ordered mesoporous carbon for enantioselective hydrogenation

► CMK-3 ordered mesoporous carbon as support for Pt nanoparticles. ► Catalysts are effective for heterogeneous asymmetric hydrogenation of α -ketoesters. ► Catalysts are more efficient than the commercial Pt/C catalyst. ► Catalysts show superior stability to the commercial Pt/Al₂O₃ catalyst.

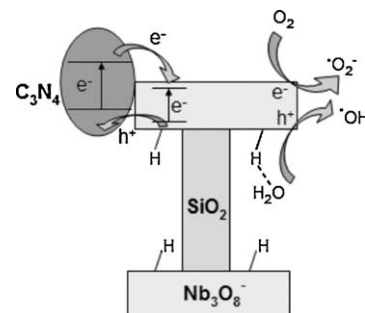


Huiqi Pan, Xiukai Li, Zongjin Zhuang, Chi Zhang

Journal of Molecular Catalysis A: Chemical 345 (2011) 90

g -C₃N₄/SiO₂-HNb₃O₈ composites with enhanced photocatalytic activities for rhodamine B degradation under visible light

► g -C₃N₄/SiO₂-HNb₃O₈ composites were prepared by solid state reaction. ► g -C₃N₄/SiO₂-HNb₃O₈ composites are visible light active photocatalysts. ► g -C₃N₄/SiO₂-HNb₃O₈ exhibited superior activity than SiO₂-HNb₃O₈ and g -C₃N₄. ► The enhanced activity is ascribed to the synergism between the two components.

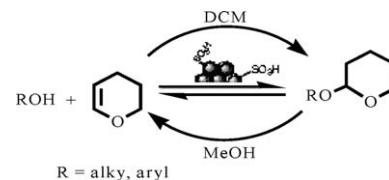


**B.L.A. Prabhavathi Devi, K.N. Gangadhar,
K.L.N. Siva Kumar, K. Shiva Shanker,
R.B.N. Prasad, P.S. Sai Prasad**

Journal of Molecular Catalysis A: Chemical 345 (2011) 96

Synthesis of sulfonic acid functionalized carbon catalyst from glycerol pitch and its application for tetrahydropyranyl protection/deprotection of alcohols and phenols

► Glycerol pitch-based carbon acid catalyst as a replacement for sulfuric acid. ► The first application for the utilization of glycerol pitch. ► Simple preparation, reusability, water resistance, operational simplicity. ► Catalyst for THP protection and deprotection of alcohols and phenols at RT.

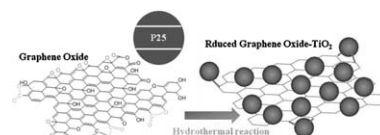


Feng Wang, Kan Zhang

Journal of Molecular Catalysis A: Chemical 345 (2011) 101

Reduced graphene oxide-TiO₂ nanocomposite with high photocatalytic activity for the degradation of rhodamine B

► The RGO-TiO₂ nanocomposites have excellent structure and morphology. ► The RGO-TiO₂ nanocomposites can be synthesized by a facile hydrothermal reaction. ► The (1:20) RGO-TiO₂ nanocomposite with higher photocatalytic activity. ► The higher photocatalytic activity can be related to high adsorbability and efficient charge transportation. ► The nanoscale production makes this material practically useful for wastewater treatment.

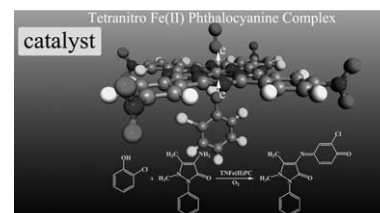


**Dapeng Li, Yilin Tong, Jun Huang, Liyun Ding,
Yunming Zhong, Dan Zeng, Ping Yan**

Journal of Molecular Catalysis A: Chemical 345 (2011) 108

First observation of tetranitro iron (II) phthalocyanine catalyzed oxidation of phenolic pollutant assisted with 4-aminoantipyrine using dioxygen as oxidant

► TNFe(II)PC could catalyze oxidation of phenol and chlorophenol pollutant. ► Dioxygen is oxidant and sufficient for the catalytic oxidation reaction. ► Superoxide anion radical is the active species generated in catalytic process. ► Successive single electron transfer is the key step of catalytic mechanism.



Rajkumar Kore, Rajendra Srivastava

Journal of Molecular Catalysis A: Chemical 345 (2011) 117

Synthesis and applications of novel imidazole and benzimidazole based sulfonic acid group functionalized Brønsted acidic ionic liquid catalysts

► Several imidazole/benzimidazole based Brønsted acidic ionic liquids were developed. ► Hydrogen bonding plays a key role in tuning the acidity of ionic liquids. ► Ionic liquids exhibited high activity compared to several solid acid catalysts. ► Ionic liquids can be recycled without significant loss in catalytic activity.

