

## Contents

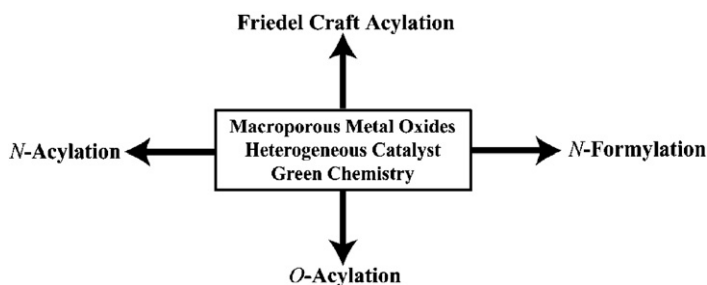
### Articles

**Harjyoti Thakuria, Ballav Moni Borah,  
Gopal Das**

*Journal of Molecular Catalysis A: Chemical 274  
(2007) 1*

Macroporous metal oxides as an efficient heterogeneous catalyst for various organic transformations—  
A comparative study

Macroporous transition metal oxides *viz.* CuO, NiO, CoO, Mn<sub>2</sub>O<sub>3</sub>, Cr<sub>2</sub>O<sub>3</sub> and ZnO were synthesized and used as an efficient, heterogeneous, reusable and eco-friendly catalyst for four different organic transformations *viz.* *N*-formylation, *N*-acylation, *O*-acylation and Friedel Craft acylation under solvent-free conditions in good yields.

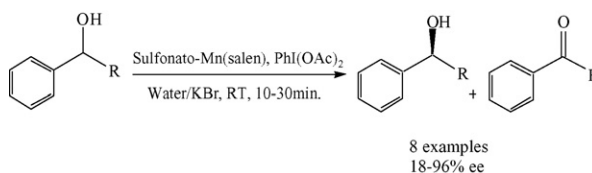


**M. Lakshmi Kantam, T. Ramani,  
L. Chakrapani, B.M. Choudary**

*Journal of Molecular Catalysis A: Chemical 274  
(2007) 11*

Oxidative kinetic resolution of racemic secondary alcohols catalyzed by resin supported sulfonato-Mn(salen) complex in water

The oxidative kinetic resolution of racemic secondary alcohols catalyzed by resin supported sulfonato-Mn(salen) complex (R,R)-1 with good to excellent ee's in water in the presence of diacetoxyiodobenzene (PhI(OAc)<sub>2</sub>) is described. The resin supported (R,R)-1 was recovered quantitatively by simple filtration and reused for three times with consistent activity.

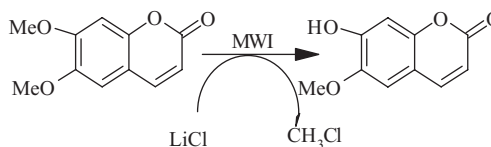


**Zhuan Fang, Guo-Chuan Zhou,  
Shi-Long Zheng, Guang-Li He, Ju-Lian Li,  
Ling He, Di Bei**

*Journal of Molecular Catalysis A: Chemical 274  
(2007) 16*

Lithium chloride-catalyzed selective demethylation of aryl methyl ethers under microwave irradiation

A rapid method for the selective cleavage of aryl methyl ether in lithium chloride-*N,N*-dimethylformamide (LiCl-DMF) system has been developed under microwave irradiation. Effects of substituent and reaction conditions have been investigated from the reactivity and selectivity point of view. It is found that microwave significantly improves the yield and the selectivity of demethylation in LiCl-DMF system.

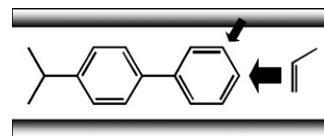


**Hiro Yoshi Maekawa, Chikayo Naitoh,  
Kazunori Nakagawa, Akira Iida,  
Kenichi Komura, Yoshihiro Kubota,  
Yoshihiro Sugi, Jong-Ho Kim, Gon Seo**

*Journal of Molecular Catalysis A: Chemical* 274 (2007) 24

Shape-selective isopropylation of biphenyl over CIT-5 zeolites with CFI topology

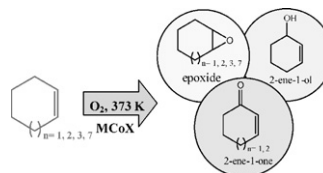
The isopropylation of biphenyl (BP) was examined over CIT-5 zeolites. The selectivities for 4,4'-diisopropylbiphenyl (4,4'-DIPB) were 50–60%. The isomerization of 4,4'-DIPB occurred at high temperatures at both internal and external acid sites. CIT-5 resulted in the selective formation of 4,4'-DIPB inside their channels through a transition state with minimal constraints; however, they also sufficiently allow 4,4'-DIPB to isomerize to 3,4'-DIPB.



**Krishna Mohan Jinka, Jince Sebastian,  
Raksh Vir Jasra**

*Journal of Molecular Catalysis A: Chemical* 274 (2007) 33

Epoxidation of cycloalkenes with cobalt(II)-exchanged zeolite X catalysts using molecular oxygen

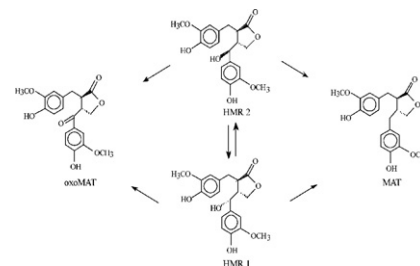


**Heidi Markus, Arie J. Plomp,  
Thomas Sandberg, Ville Nieminen,  
Johannes H. Bitter, Dmitry Yu. Murzin**

*Journal of Molecular Catalysis A: Chemical* 274 (2007) 42

Dehydrogenation of hydroxymatairesinol to oxomatairesinol over carbon nanofibre-supported palladium catalysts

Two diastereomers of the lignan hydroxymatairesinol, (7*R*,8*R*,8'*R*')-(−)-7-*allo*-hydroxymatairesinol (HMR 1) and (7*S*,8*R*,8'*R*')-(−)-7-*hydroxymatairesinol* (HMR 2), were dehydrogenated to 7-oxomatairesinol (oxoMAT) over carbon nanofibre supported palladium catalysts under nitrogen flow at 70 °C. Matairesinol (MAT) was formed as a by-product through hydrogenolysis of HMR. When 2-propanol was used as solvent, 7-*iso*-propoxymatairesinol was obtained as a by-product.

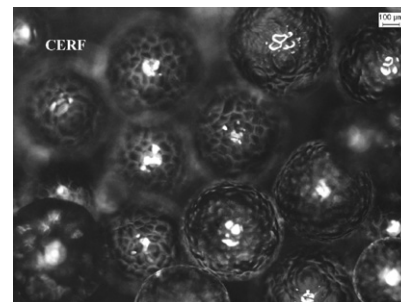


**C.Y. Kwan, W. Chu, W.S. Lam**

*Journal of Molecular Catalysis A: Chemical* 274 (2007) 50

The role of oxalate in the kinetics of 2,4-D oxidation over ferrous ion-supported catalysts

Ferrous ions can be immobilized on the cation-exchange resin for the heterogeneous photocatalysis. The catalytic effectiveness is activated by the presence of organic ligands as well as UV light. This catalyst can be easily settled and collected after the reaction for recycling. The performance of the reused catalyst shows a strong dependence on oxalate concentration and is better than that of the fresh catalyst in some situations.

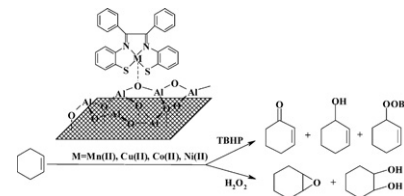


**Masoud Salavati-Niasari,  
Hassan Babazadeh-Arani**

*Journal of Molecular Catalysis A: Chemical* 274 (2007) 58

Cyclohexene oxidation with *tert*-butylhydroperoxide and hydrogen peroxide catalyzed by new square-planar manganese(II), cobalt(II), nickel(II) and copper(II) bis(2-mercaptoanil)benzil complexes supported on alumina

New square-planar Mn(II), Cu(II), Ni(II) and Co(II) complexes of a tetradentate Schiff-base ligand "bis(2-mercaptoanil)benzil, H<sub>2</sub>[mabenzil]"; have been prepared and characterized by elemental analyses, IR, UV-vis, conductometric and magnetic measurements. The results suggest that the symmetrical Schiff-base is a bivalent anion with tetradentate N<sub>2</sub>S<sub>2</sub> donors derived from the thiophenole groups and azomethine nitrogen. The formulae was found to be [M(mabenzil)] for the 1:1 non-electrolytic complexes. Alumina-supported metal complexes (ASMC; [M(mabenzil)/Al<sub>2</sub>O<sub>3</sub>]) catalyze the oxidation of cyclohexene with *tert*-butylhydroperoxide (TBHP) and H<sub>2</sub>O<sub>2</sub>.



**Rosa María Gómez, Armando Cabrera,  
Claudia García Velázquez**

*Journal of Molecular Catalysis A: Chemical* 274 (2007) 65

Synthesis of stibine SbPhR<sup>1</sup>R<sup>2</sup> and their use as ligand in the amidocarbonylation of alkenes with Co<sub>2</sub>(CO)<sub>8</sub> as precursor

Treatment of bis(1-phenylethynyl)-phenylstibine with 2,4,6-trimethyl magnesium bromide promotes the nucleophilic displacement of one ethynyl group, as was previously reported by Kurita, affording the phenyl (1-phenylethynyl)mesitylstibine. This antimony compound was used as a ligand in order to modify the Co<sub>2</sub>(CO)<sub>8</sub> catalytic system for the amidocarbonylation (Wakamatsu reaction) of cyclohexene, cyclopentene, 1-hexene, and 1-pentene. This new modified catalytic system is capable of affording moderate yields of *N*-acetyl- $\alpha$ -aminoacids.

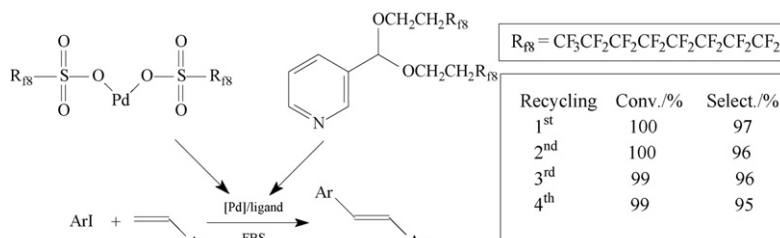


**Wen-Bin Yi, Chun Cai, Xin Wang**

*Journal of Molecular Catalysis A: Chemical* 274 (2007) 68

A novel fluororous palladium catalyst for Heck reaction in a fluororous biphasic system (FBS)

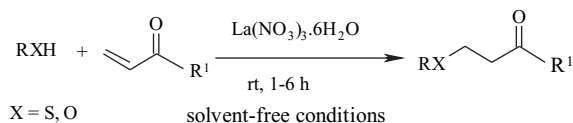
Palladium(II) perfluorooctanesulfonate [Pd(OSO<sub>2</sub>R<sub>18</sub>)<sub>2</sub>] catalyses the highly efficient Heck reaction in the presence of a catalytic amount of a perfluoroalkylated-pyridine as a ligand in a fluororous biphasic system composed of toluene and perfluorodecalin. The fluororous phase containing the active palladium species is easily separated and can be reused several times without a significant loss of catalytic activity.



**P. Prabhakar, N. Suryakiran, M. Narasimhulu,  
Y. Venkateswarlu**

*Journal of Molecular Catalysis A: Chemical* 274 (2007) 72

A mild and efficient 1,4-addition of thiols and phenols to  $\alpha,\beta$ -unsaturated carbonyl compounds using La(NO<sub>3</sub>)<sub>3</sub>·6H<sub>2</sub>O as a catalyst under solvent-free conditions

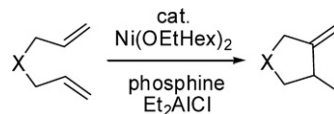


**David Nečas, Daniele Ramella, Iva Rudovská, Martin Kotora**

A series of Ni(OEtHex)<sub>2</sub>/phosphine/Et<sub>2</sub>AlCl systems were used as cycloisomerization catalysts of various 1,6-heptadienes to methyl(alkenyl)cyclopentane derivatives in good yields (33–90%).

*Journal of Molecular Catalysis A: Chemical* 274 (2007) 78

Ni(ethylhexanoate)<sub>2</sub>/nligand/Et<sub>2</sub>AlCl catalyzed cycloisomerization of 1,6-heptadienes to cyclopentane derivatives

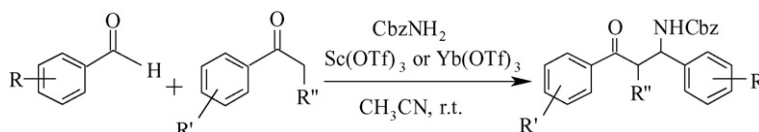


**Biswanath Das, Anjoy Majhi, Kongara Ravinder Reddy, K. Suneel**

One-pot three-component coupling of aldehydes, ketones or ketoesters and benzyl carbamate in acetonitrile in presence of Sc(OTf)<sub>3</sub> or Yb(OTf)<sub>3</sub> at room temperature produced the corresponding Cbz-protected β-amino ketones in high yields and good diastereoselectivity.

*Journal of Molecular Catalysis A: Chemical* 274 (2007) 83

Rare-earth metal triflates catalyzed three-component coupling of aldehydes, ketones or ketoesters and benzyl carbamate: An efficient one-pot stereoselective synthesis of Cbz-protected β-amino carbonyl compounds

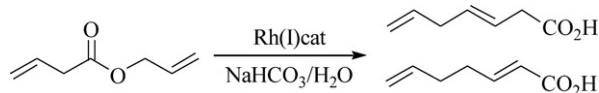


**Paolo Bottarelli, Mirco Costa, Bartolo Gabriele, Giuseppe Salerno, Roger M. Yebeutchou**

A simple and efficient protocol was developed to realize in aqueous media the rearrangement of allyl but-3-enoate to heptadienoic acids in saturated NaHCO<sub>3</sub> water, in the presence of catalytic amounts of a rhodium(I) complex, containing olefin or diene ligands. The reaction affords mainly the sodium salt of E-2,6-heptadienoic acid, with high catalytic efficiency (3600 TON).

*Journal of Molecular Catalysis A: Chemical* 274 (2007) 87

Catalysis in water: Highly efficient synthesis of heptadienoic acids by rearrangement of allyl but-3-enoate promoted by Rh(I) complexes

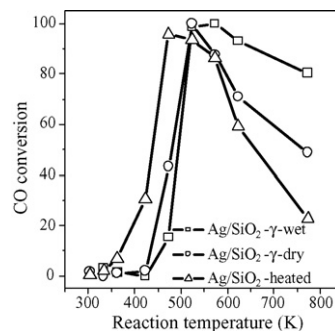


**Li Jin, Kun Qian, Zhiqian Jiang, Weixin Huang**

Ag/SiO<sub>2</sub> catalysts are successfully prepared by the room temperature γ-ray irradiation and show distinct catalytic behavior in CO oxidation.

*Journal of Molecular Catalysis A: Chemical* 274 (2007) 95

Ag/SiO<sub>2</sub> catalysts prepared via γ-ray irradiation and their catalytic activities in CO oxidation

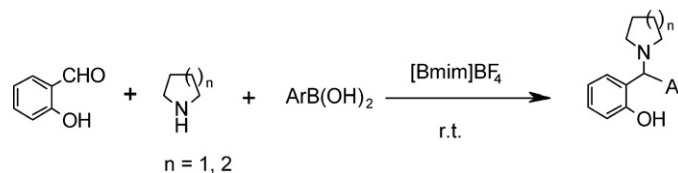


**J.S. Yadav, B.V. Subba Reddy, P. Naga Lakshmi**

*Journal of Molecular Catalysis A: Chemical* 274 (2007) 101

Ionic liquid accelerated Petasis reaction: A green protocol for the synthesis of alkylaminophenols

Ionic liquids are found to accelerate the Petasis boronic acid–Mannich reaction under extremely mild conditions to afford alkylaminophenols in high yields.

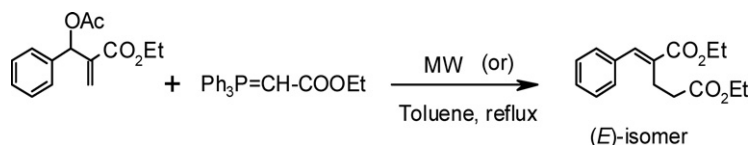


**J.S. Yadav, B.V. Subba Reddy, A.K. Basak, A. Venkat Narsaiah**

*Journal of Molecular Catalysis A: Chemical* 274 (2007) 105

Microwave accelerated  $S_N2'$  substitution of Baylis–Hillman acetates: A comparative study of conventional heating versus microwave irradiation

Baylis–Hillman acetates undergo a rapid  $S_N2'$  allylic substitution with ethyl (triphenyl phosphoranylidene) acetate under microwave irradiation to afford ethyl 5-aryl or alkyl-(*E*)-pent-4-enoates in high yields.



**Habib Firouzabadi, Nasser Iranpoor, Abbas Khoshnood**

*Journal of Molecular Catalysis A: Chemical* 274 (2007) 109

Aluminum tris (dodecyl sulfate) trihydrate  $Al(DS)_3 \cdot 3H_2O$  as an efficient Lewis acid–surfactant-combined catalyst for organic reactions in water. Efficient conversion of epoxides to thiiranes and to amino alcohols at room temperature

High yielding preparation of structurally different thiiranes,  $\beta$ -amino alcohols and bis( $\beta$ -amino) alcohols by the reaction of epoxides with thiourea and amines in the presence of catalytic amounts of aluminum tris (dodecyl sulfate) trihydrate  $Al(DS)_3 \cdot 3H_2O$  as a Lewis acid–surfactant-combined catalyst at room temperature in water has been described. All the reactions proceeded smoothly and the isolation of the products was simple and not time consuming process. Ring opening of epoxides with amines in the presence of this catalyst proceeded with high chemo- and regioselectivity.

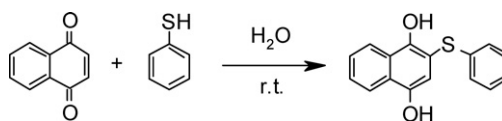


**J.S. Yadav, T. Swamy, B.V. Subba Reddy, D. Krishna Rao**

*Journal of Molecular Catalysis A: Chemical* 274 (2007) 116

Organic synthesis in water: Green protocol for the conjugate addition of thiols to *p*-quinones

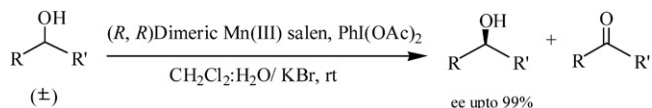
Thiols undergo smooth conjugate addition with *p*-quinones in water in the absence of a catalyst to produce 2-thia-1,4-hydroquinones in excellent yields.



**Kavita Pathak, Irshad Ahmad,  
Sayed H.R. Abdi, Rukhsana I. Kureshy,  
Noor-ul H. Khan, Raksh V. Jasra**

*Journal of Molecular Catalysis A: Chemical* 274 (2007) 120

Oxidative kinetic resolution of racemic secondary alcohols catalyzed by recyclable chiral dimeric Mn(III) salen catalysts

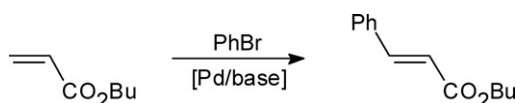


**Jan Demel, Jiří Čejka, Petr Štěpnička**

*Journal of Molecular Catalysis A: Chemical* 274 (2007) 127

The use of palladium nanoparticles supported on MCM-41 mesoporous molecular sieves in Heck reaction: A comparison of basic and neutral supports

Bifunctional supported catalysts based on palladium nanoparticles and basic ion-exchanged Al-doped MCM-41 type supports were shown to promote Heck reaction of butyl acrylate with bromobenzene. Details on catalyst characterization and a comparison of the catalyst efficiency are provided.

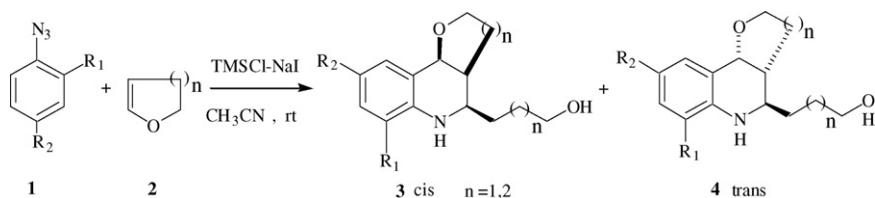


**Ahmed Kamal, B. Rajendra Prasad,  
M. Naseer A. Khan**

*Journal of Molecular Catalysis A: Chemical* 274 (2007) 133

TMSCl-NaI-mediated reaction of aryl azides with cyclic enol ethers: An efficient one-pot synthesis of 1,2,3,4-tetrahydroquinolines

The tetrahydroquinoline moiety is an important structural component of a number of natural products. The reaction of aryl azides with 2,3-dihydro-2H-furan and 3,4-dihydro-2H-pyran in presence of TMSCl-NaI affords the corresponding 1,2,3,4-tetrahydroquinoline derivatives in an efficient manner and most of these compounds exhibited *cis* selectivity.

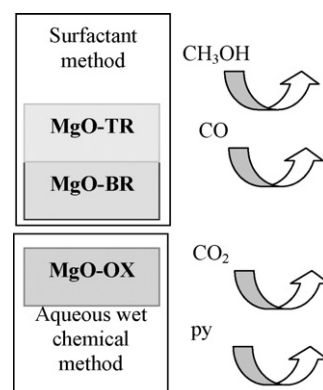


**Fares Khairallah, Antonella Glisenti**

*Journal of Molecular Catalysis A: Chemical* 274 (2007) 137

Synthesis, characterization and reactivity study of nanoscale magnesium oxide

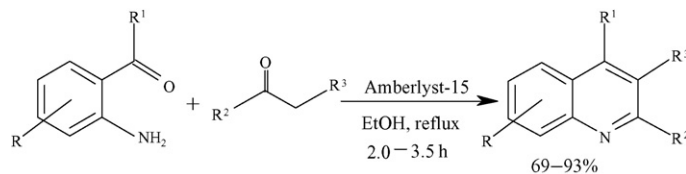
Different nanoscale MgO samples were synthesized using *aqueous wet chemical* (MgO-OX) and *surfactant* (MgO-BR: surfactant Brij 56, MgO-TR: surfactant Triton 100-X) methods. MgO-OX particles are smaller than MgO-BR/MgO-TR. The preparation procedure influences nanopowder reactivity with respect to methanol and CO. The interaction with pyridine and CO<sub>2</sub> allows investigating acidic/basic sites.



**Biswanath Das, Kongara Damodar,  
Nikhil Chowdhury, Rathod Aravind Kumar**

*Journal of Molecular Catalysis A: Chemical* 274  
(2007) 148

Application of heterogeneous solid acid catalysts  
for Friedlander synthesis of quinolines

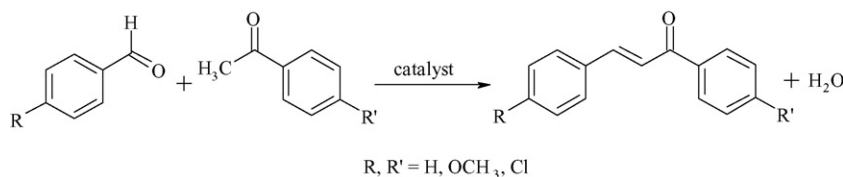


**S. Shylesh, Prinson P. Samuel, Ch. Srilakshmi,  
Renu Parischa, A.P. Singh**

*Journal of Molecular Catalysis A: Chemical* 274  
(2007) 153

Sulfonic acid functionalized mesoporous silicas and  
organosilicas: Synthesis, characterization and cat-  
alytic applications

Ethane bridged mesoporous organosilicas and MCM-41 having sulfonic acid groups in the pore channels were prepared by co-condensation method as well as grafting method and were used as catalysts in the liquid phase Claisen-Schmidt condensation reaction of acetophenone with benzaldehyde to yield chalcones.

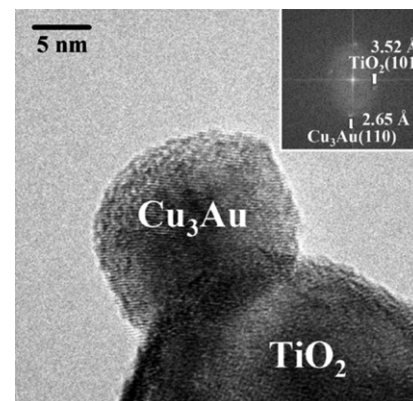


**R.J. Chimentão, F. Medina, J.L.G. Fierro,  
J. Llorca, J.E. Sueiras, Y. Cesteros, P. Salagre**

*Journal of Molecular Catalysis A: Chemical* 274  
(2007) 159

Propene epoxidation by nitrous oxide over  
Au-Cu/TiO<sub>2</sub> alloy catalysts

Gold-copper alloy catalysts were prepared and tested in the gas-phase epoxidation of propene by nitrous oxide. The copper content in the catalyst seemed to have a strong influence on the dispersion of the metal particles. These changes also contributed to an increase in the activity and in the selectivity to propene oxide.

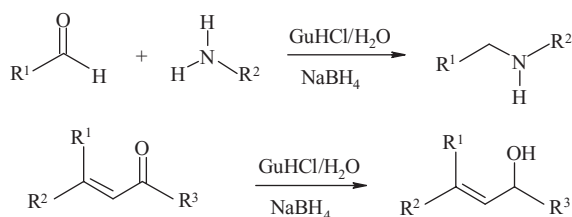


**Akbar Heydari, Afsaneh Arefi,  
Maryam Esfandyari**

*Journal of Molecular Catalysis A: Chemical* 274  
(2007) 169

Direct reductive amination of aldehydes and selective  
reduction of  $\alpha,\beta$ -unsaturated carbonyl compounds  
by NaBH<sub>4</sub> in the presence of guanidine hydrochloride  
in water

A selective and direct access to secondary amines and regioselective procedure for 1,2-reduction of  $\alpha,\beta$ -unsaturated aldehydes and ketones with sodium borohydride activated by guanidine hydrochloride (5 mol%) in water is described.

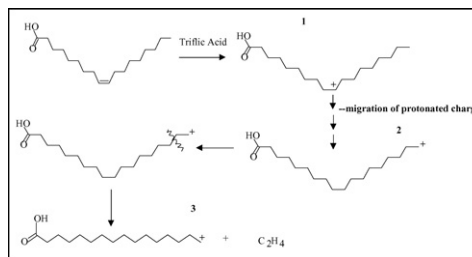


**Tracy Benson, Rafael Hernandez, Todd French, Earl Alley, William Holmes**

*Journal of Molecular Catalysis A: Chemical* 274 (2007) 173

Reactions of fatty acids in superacid media: Identification of equilibrium products

Acid-catalyzed cracking reactions of palmitic acid and oleic acid using triflic acid were investigated to determine the extent of products. No reaction was found with the saturated palmitic acid. However, oleic acid, an unsaturated acid, reacted at forming linear and branched saturated fatty acids that were of smaller molecular weight than the starting material. These results suggest the potential of using lipids and fatty acids as feedstocks for the manufacture of transportation fuels.

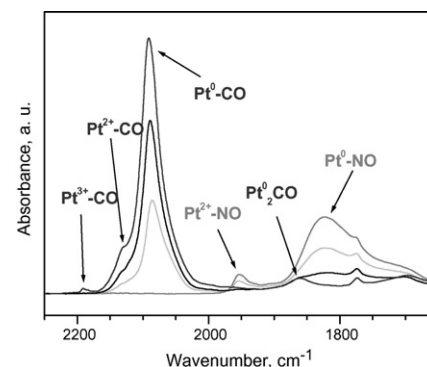


**Elena Ivanova, Mihail Mihaylov, Frédéric Thibault-Starzyk, Marco Daturi, Konstantin Hadjiivanov**

*Journal of Molecular Catalysis A: Chemical* 274 (2007) 179

FTIR spectroscopy study of CO and NO adsorption and co-adsorption on Pt/TiO<sub>2</sub>

Adsorption of CO on a non-reduced Pt/TiO<sub>2</sub> sample reveals the existence of cationic (Pt<sup>3+</sup>, Pt<sup>2+</sup>) and metallic platinum. NO forms nitrosyl species with bare Pt<sup>2+</sup> and Pt<sup>0</sup> sites, but is not coordinated to Pt<sup>3+</sup> ions. It appears that NO is a more sensitive probe than CO is to test the state of Pt<sup>2+</sup> cations.

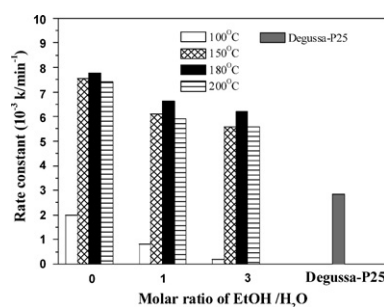


**Guohong Wang**

*Journal of Molecular Catalysis A: Chemical* 274 (2007) 185

Hydrothermal synthesis and photocatalytic activity of nanocrystalline TiO<sub>2</sub> powders in ethanol–water mixed solutions

Bimodal mesoporous nanocrystalline TiO<sub>2</sub> powders were synthesized by a hydrothermal method using tetrabutylorthotitanate as precursor in ethanol–water mixed solutions. The photocatalytic activity of TiO<sub>2</sub> powders prepared at 150–200 °C for 3–24 h greatly exceeded that of Degussa P25.

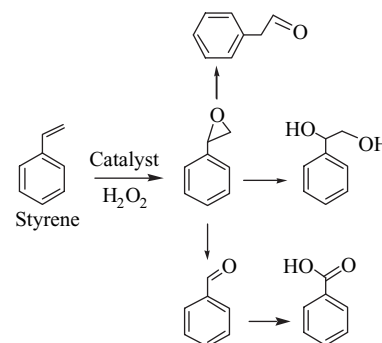


**Mannar R. Maurya, Anil K. Chandrakar, Shri Chand**

*Journal of Molecular Catalysis A: Chemical* 274 (2007) 192

Zeolite-Y encapsulated metal complexes of oxovanadium(VI), copper(II) and nickel(II) as catalyst for the oxidation of styrene, cyclohexane and methyl phenyl sulfide

Oxovanadium(IV), copper(II) and nickel(II) complexes of Schiff bases derived from salicylaldehyde and *o*-aminobenzyl alcohol (H<sub>2</sub>sal-oaba) have been encapsulated in the cavity of zeolite-Y and characterized. These complexes catalyse the oxidation, by peroxide, of styrene cyclohexane and methyl phenyl sulfide in good yield.



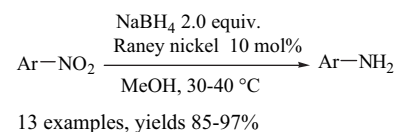


**Ivan Pogorelić, Mirela Filipan-Litvić,  
Sonja Merkaš, Goranka Ljubić, Ivica Capanec,  
Mladen Litvić**

*Journal of Molecular Catalysis A: Chemical* 274  
(2007) 202

Rapid, efficient and selective reduction of aromatic nitro compounds with sodium borohydride and Raney nickel

A new efficient, mild and practical method for reduction of aromatic nitro compounds employing NaBH<sub>4</sub>/Raney nickel system is reported. The method is simple, easily scaled-up and applicable for large scale preparation of different substituted anilines as well as other heterocyclic aryl amines.

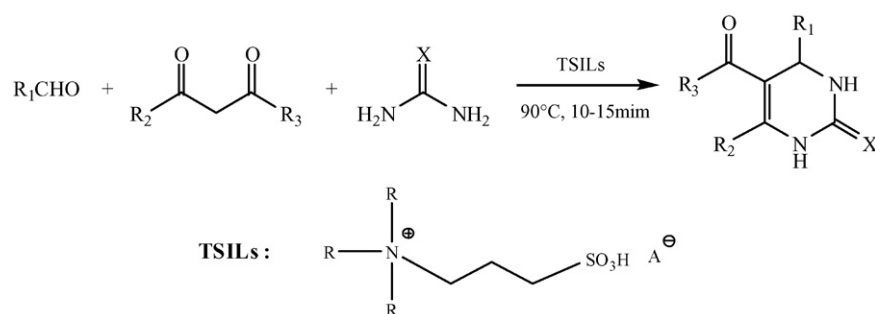


**Fang Dong, Luo Jun, Zhou Xinli, Ye Zhiwen,  
Liu Zuliang**

*Journal of Molecular Catalysis A: Chemical* 274  
(2007) 208

One-pot green procedure for Biginelli reaction catalyzed by novel task-specific room-temperature ionic liquids

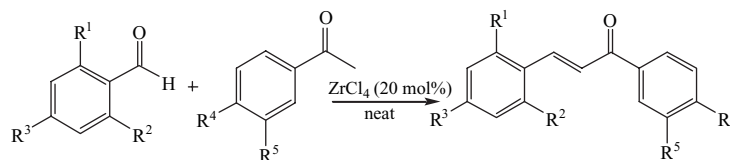
Cheap and reusable task-specific ionic liquids were found to be effective catalysts for assembling 3,4-dihydropyrimidine-2-(1H)-ones via one-pot three-component Biginelli reaction.



**Atul Kumar, Akanksha**

*Journal of Molecular Catalysis A: Chemical* 274  
(2007) 212

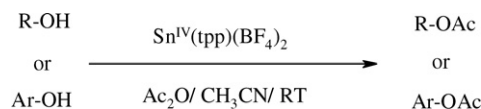
Zirconium chloride catalyzed efficient synthesis of 1,3-diaryl-2-propenones in solvent free conditions via aldol condensation



**Majid Moghadam, Shahram Tangestaninejad,  
Valiollah Mirkhani,  
Iraj Mohammadpoor-Baltork,  
S. Abdolmanaf Taghavi**

*Journal of Molecular Catalysis A: Chemical* 274  
(2007) 217

Highly efficient and selective acetylation of alcohols and phenols with acetic anhydride catalyzed by a high-valent tin(IV) porphyrin, Sn(TPP)(BF<sub>4</sub>)<sub>2</sub>

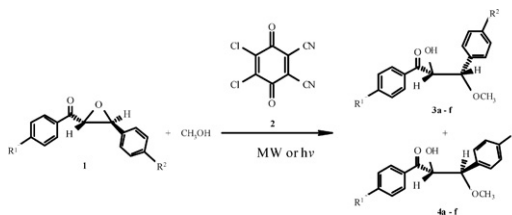


**H.R. Memarian, A. Saffar-Teluri**

*Journal of Molecular Catalysis A: Chemical* 274 (2007) 224

Microwave-assisted and light-induced catalytic ring opening of  $\alpha$ -epoxyketones using DDQ

Ring opening reaction of  $\alpha$ -epoxyketones in the presence of DDQ in methanol solution under microwave and UV irradiations results in the formation of  $\alpha$ -hydroxy- $\beta$ -methoxyketones through C $_{\beta}$ -O bond cleavage in excellent yields. Whereas the nature and location of the additional substituent affect the rate of ring opening, microwave irradiation remarkably raises the rate of reactions compared with UV-light. Cyclic voltammetric and conductometric studies support these experimental results.

**Siraprapha Dokjampa, Thirasak Rirksomboon, Do T.M. Phuong, Daniel E. Resasco**

*Journal of Molecular Catalysis A: Chemical* 274 (2007) 231

Ring opening of 1,3-dimethylcyclohexane on Ir catalysts. Modification of product distribution by addition of Ni and K to improve fuel properties

The ring opening of dimethylcyclohexane has been studied on various catalysts. By changing the support and by adding promoters, we have been able to modify the product distribution in such a way as to increase the octane number without increasing the vapor pressure.

