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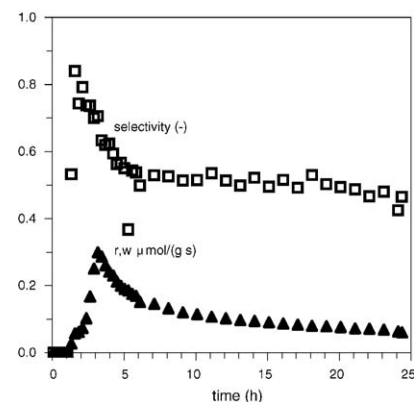
Articles

**Willy J.M. van Well, Minh Thang Le,
Niels Christian Schiødt, Serge Hoste, Per Stoltze**

Journal of Molecular Catalysis A: Chemical 256 (2006) 1

The influence of the calcination conditions on the catalytic activity of Bi_2MoO_6 in the selective oxidation of propylene to acrolein

The activity of Bi_2MoO_6 catalysts with small amounts of excess bismuth, in the selective oxidation of propylene, is strongly dependent on the calcination conditions. These catalysts show initially reasonable activities and high selectivities, but they deactivate during calcination or reaction. The figure shows the activation and deactivation of an uncalcined sample with $\text{Bi}/\text{Mo} = 2.3$ under reaction conditions.

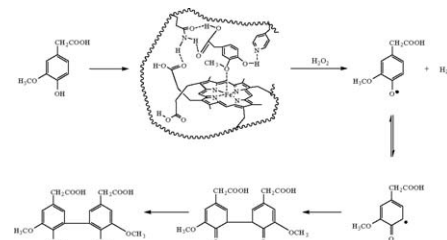


Zhiyong Cheng, Yuanzong Li

Journal of Molecular Catalysis A: Chemical 256 (2006) 9

The role of molecular recognition in regulating the catalytic activity of peroxidase-like polymers imprinted by a reductant substrate

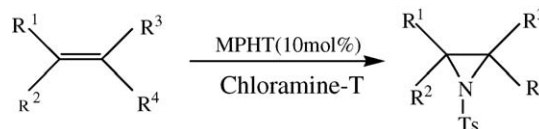
In the presence of plural monomers (hemin, 4-vinylpyridine and acrylamide) and crosslinker ethylene glycol dimethacrylate, homovanillic acid leads to a tailor-made molecular imprinting polymers, which mimic well the controlled interactions between metalloporphyrin and the surrounding protein in natural peroxidase thus exhibiting considerable catalytic activity and ideal substrate specificity. The multi-site interactions produced by these co-monomers and resultant molecular recognition process were proven to determine largely the catalytic activity of this new type of molecular imprinted polymers (MIPs).



Suman L. Jain, Jomy K. Joseph, Bir Sain

Journal of Molecular Catalysis A: Chemical 256 (2006) 16

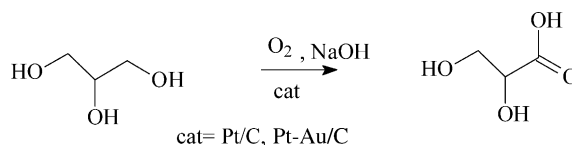
N-methylpyrrolidine-2-one hydrotribromide: An efficient and new catalyst for the aziridination of alkenes using Chloramine-T under solvent free conditions



**N. Dimitratos, C. Messi, F. Porta, L. Prati,
A. Villa**

Journal of Molecular Catalysis A: Chemical 256
(2006) 21

Investigation on the behaviour of Pt(0)/carbon and Pt(0),Au(0)/carbon catalysts employed in the oxidation of glycerol with molecular oxygen in water

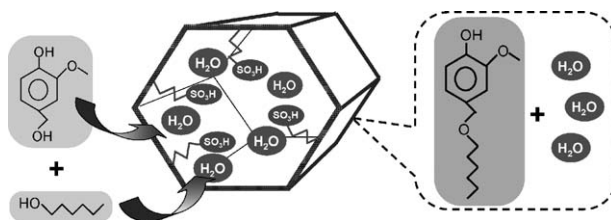


**Rafael van Grieken, Juan Antonio Melero,
Gabriel Morales**

Journal of Molecular Catalysis A: Chemical 256
(2006) 29

Etherification of benzyl alcohols with 1-hexanol over organosulfonic acid mesostructured materials

Etherification of benzyl alcohols with 1-hexanol in liquid-phase over propyl- and arene-SO₃H-modified mesostructured SBA-15 silica. Higher catalytic activity of propyl-sulfonic-modified SBA-15 material is related to the more hydrophobic microenvironment of -SO₃H sites which reduces the acid site deactivation associated with adsorption of water generated during the reaction.

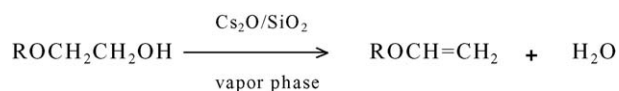


**Yuuji Shimasaki, Kimio Ariyoshi,
Hideyuki Kambe, Hitoshi Yano,
Shukichi Ugamura**

Journal of Molecular Catalysis A: Chemical 256
(2006) 37

New method of production of vinyl ether by vapor phase intramolecular dehydration of glycol ether over solid catalysts

New method of production of vinyl ether (alkyl vinyl ether or aryl vinyl ether) was developed. 2-Alkoxyethanol or 2-aryloxyethanol is converted to corresponding vinyl ether over metal oxide catalysts in the vapor phase. Cesium oxide doped-SiO₂ catalyst shows high catalytic performance.

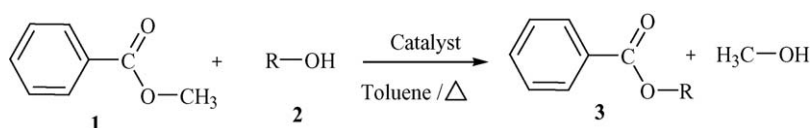


**Fathallaah Bazi, Hanane El Badaoui,
Soumia Tamani, Samira Sokori, Latifa Oubella,
Mohamed Hamza, Saïd Boulaajaj, Saïd Sebti**

Journal of Molecular Catalysis A: Chemical 256
(2006) 43

Catalysis by phosphates: A simple and efficient procedure for transesterification reaction

Zinc chloride and potassium fluoride doped on natural phosphate (ZnCl₂/NP and KF/NP) and sodium nitrate modified natural phosphate (Na/NP) catalyze efficiently the transesterification reaction.

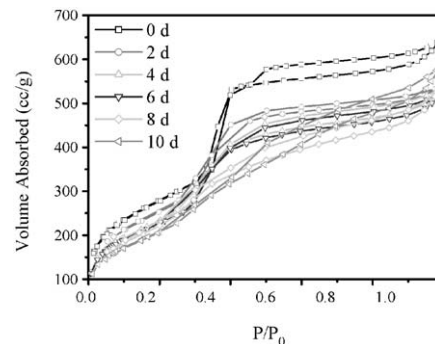


Junqiang Xu, Wei Chu, Shizhong Luo

Journal of Molecular Catalysis A: Chemical 256 (2006) 48

Synthesis and characterization of mesoporous V-MCM-41 molecular sieves with good hydrothermal and thermal stability

Stable V-MCM-41 mesoporous materials have been synthesized by hydrothermal method, using industrial $\text{Na}_2\text{O} \cdot (3.3\text{--}3.5)\text{SiO}_2$ as the source of much cheaper silica instead of conventional expensive organic precursors. The results of N_2 adsorption and X-ray diffraction showed that the synthesized samples had a high ordered hexagonal structure, good hydrothermal stability and thermal stability. The selective oxidation of styrene using hydrogen peroxide as oxidant over V-MCM-41 samples showed a good catalytic performance of partial oxidation, the phenylacetic acid was the principal product (the selectivity value was 49.4%). UV-vis spectra provided strong evidences that most of vanadium ions were incorporated into the framework of siliceous MCM-41 sample.

**Alexey Ignatchenko, Donald G. Nealon, Roy Dushane, Keith Humphries**

Journal of Molecular Catalysis A: Chemical 256 (2006) 57

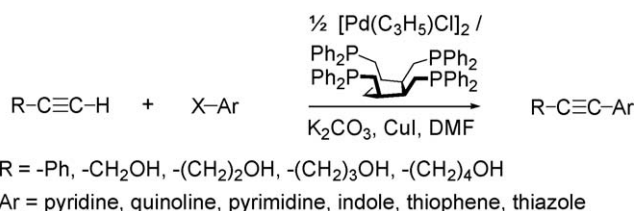
Interaction of water with titania and zirconia surfaces

Isotopic exchange of water on the surface of monoclinic zirconia and the anatase form of titania was studied experimentally using an ordinary gas chromatograph/mass spectrometer (GC/MS) as a pulse microreactor. Interaction of water with these surfaces was modeled by first principles calculations for periodic structures within density functional theory. Experimental data support computational results showing dissociation of water on monoclinic zirconia's most stable surfaces ($\bar{1}11$), ($\bar{1}01$) and (111) . Water is adsorbed molecularly on the anatase (101) surface and dissociatively on the anatase (100) surface. Interaction of water with the anatase (001) surface proceeds through insertion into a Ti-O bond. By monitoring the concentration of the mixed water isotope, DHO, during the isotopic exchange of surface water with D_2O , it was found that exchange of water on anatase surfaces at 200–400 °C proceeds by whole molecules from 30% to 70% depending on the temperature and the surface coverage. In contrast, water exchanges on zirconia by single hydrogen atoms with a complete scrambling of hydrogens, at least 99%, under the same conditions. The proposed mechanism of water exchange on zirconia surface includes interaction through hydrogen bonding between hydroxyl groups adsorbed on neighboring sites. The observed anomaly on anatase is in agreement with the preferential molecular adsorption on a (101) surface and with the insertion of water into Ti-O bonds on a (001) surface. This study contributes to the understanding of the atomic structure of acid-base catalytic sites on anatase titania and monoclinic zirconia surfaces.

Marie Feuerstein, Henri Doucet, Maurice Santelli

Journal of Molecular Catalysis A: Chemical 256 (2006) 75

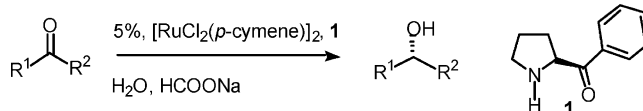
Sonogashira reaction of heteroaryl halides with alkynes catalysed by a palladium-tetraphosphine complex

**Saoussen Zeror, Jacqueline Collin, Jean-Claude Fiaud, Louisa Aribi Zouioueche**

Journal of Molecular Catalysis A: Chemical 256 (2006) 85

A recyclable multi-substrates catalytic system for enantioselective reduction of ketones in water

Enantioselective reductions of a variety of aromatic ketones have been performed with high asymmetric inductions in several cases. A multi-substrate recycling of the catalyst afforded successively seven alcohols each with similar enantiomeric excess than the one recorded in a single run.

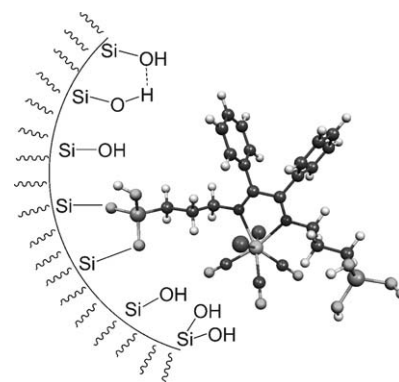


Jorge Gimenez, Carla D. Nunes, Pedro D. Vaz, Anabela A. Valente, Paula Ferreira, Maria José Calhorda

Journal of Molecular Catalysis A: Chemical 256 (2006) 90

Hepta-coordinate halocarbonyl molybdenum(II) and tungsten(II) complexes as heterogeneous polymerization catalysts

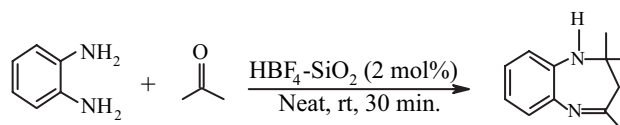
[MoI₂(CO)₃(DAB)] is one example of a family of complexes that were immobilized in MCM-41 in a stepwise procedure (grafting of the DAB ligand and coordination), characterized, and tested for catalytic activity in ring-opening polymerization reactions with norbornene and norbornadiene.



B.P. Bandgar, Abasaheb V. Patil, O.S. Chavan

Journal of Molecular Catalysis A: Chemical 256 (2006) 99

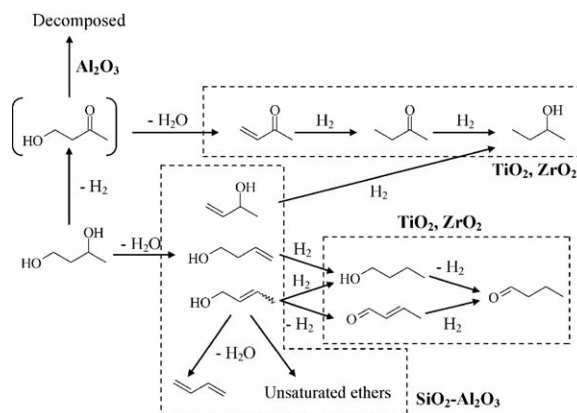
Silica supported fluoroboric acid as a novel, efficient and reusable catalyst for the synthesis of 1,5-benzodiazepines under solvent-free conditions



Naoki Ichikawa, Satoshi Sato, Ryoji Takahashi, Toshiaki Sodesawa

Journal of Molecular Catalysis A: Chemical 256 (2006) 106

Catalytic reaction of 1,3-butanediol over solid acids

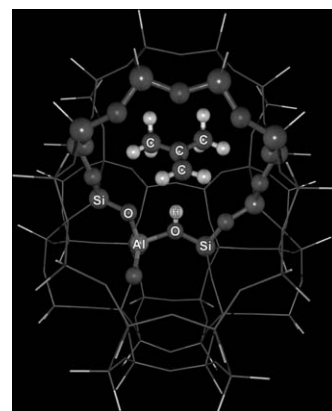


Supawadee Namuangruk, Duangkamol Tantanak, Jumras Limtrakul

Journal of Molecular Catalysis A: Chemical 256 (2006) 113

Application of ONIOM calculations in the study of the effect of the zeolite framework on the adsorption of alkenes to ZSM-5

The adsorption of four butene isomers on H-ZSM-5 zeolite have been investigated using two- and three-layered our own N-layered integrated molecular orbital and molecular mechanics (ONIOM) schemes, which included the effects of the zeolite microporous structure and can differentiate the structures and energetics of the adsorption species inside the zeolite pores.

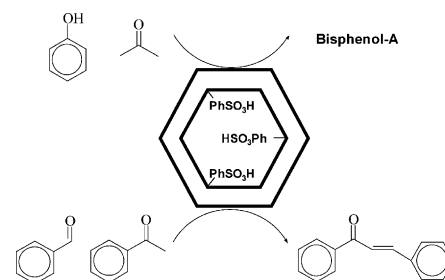


**Jie Yang, Qihua Yang, Gang Wang,
Zhaochi Feng, Jian Liu**

Journal of Molecular Catalysis A: Chemical 256 (2006) 122

Synthesis and catalytic properties of mesoporous ethane-silicas containing phenyl-sulfonic acid group

The mesoporous ethane-silicas functionalized with phenyl-sulfonic acid were synthesized by sulfonation of the mesoporous ethane-silicas functionalized with phenyl group. The acid exchange capacity of these materials is in the range of 0.49–0.86 mmol H^+ g^{-1} . The sulfonated materials can effectively catalyze the Claisen-Schmidt condensation of acetophenone with benzaldehyde to form chalcone and the condensation of phenol with acetone for the production of bisphenol-A.

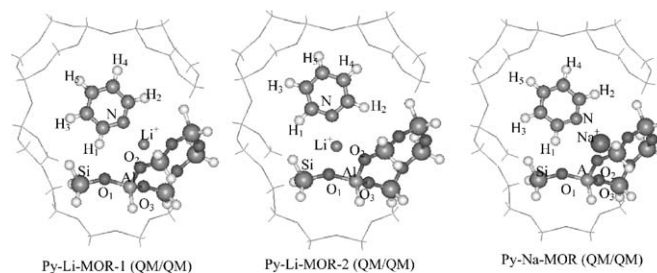


**Shuping Yuan, Jianuo Wang, Yun-Bo Duan,
Yong-Wang Li, Haijun Jiao**

Journal of Molecular Catalysis A: Chemical 256 (2006) 130

An ONIOM2 study on pyridine adsorption in the main channels of Li- and Na-MOR

The structures of Li- and Na-MOR as well as their interaction with pyridine were investigated with the help of a 24T model using the ONIOM2 (QM/QM) and (QM/MM) methods. The coordination of the alkali metal ion to the nitrogen atom of pyridine dominates the overall interaction between zeolite and pyridine, and the adsorption complexes were further stabilized by hydrogen bonding between the hydrogen atoms of pyridine and the lattice oxygen atoms of the zeolite framework.

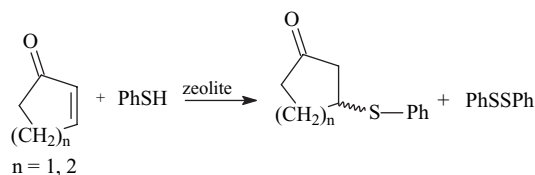


M. Kumarraja, K. Pitchumani

Journal of Molecular Catalysis A: Chemical 256 (2006) 138

Hetero-Michael addition of benzenethiol to cycloalkenones using cation-exchanged faujasites: Simultaneous acid–base bifunctional catalysis

Effects of various cation-exchanged faujasite zeolites (with different Si/Al ratios) are studied in the thia-Michael addition of benzenethiol to cycloalkenones. Plausible mechanisms involving simultaneous participation of acidic/basic sites of zeolite is proposed, which is supported by IR data on enone/zeolite composites.

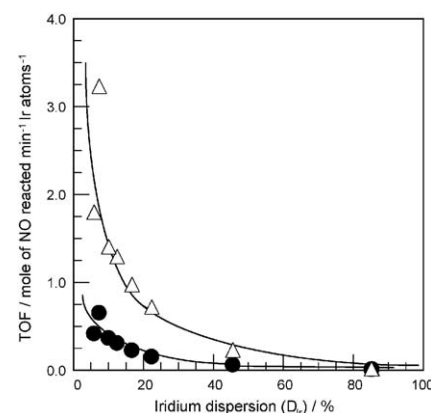


**Masaaki Haneda, Tadahihiro Fujitani,
Hideaki Hamada**

Journal of Molecular Catalysis A: Chemical 256 (2006) 143

Effect of iridium dispersion on the catalytic activity of Ir/SiO₂ for the selective reduction of NO with CO in the presence of O₂ and SO₂

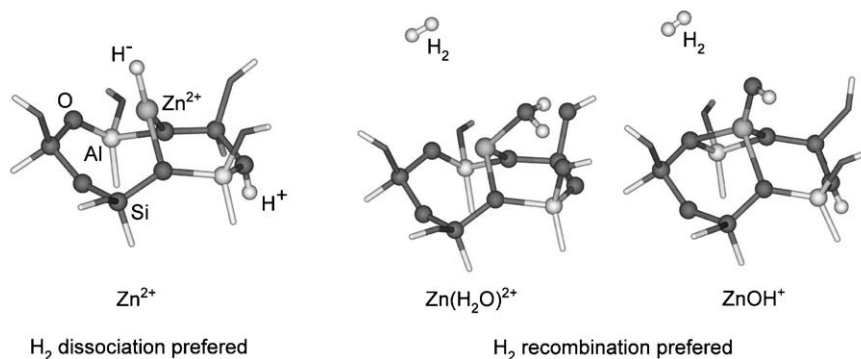
The intrinsic activity, expressed in terms of turnover frequency (TOF), increases with decreasing iridium dispersion, indicating that NO reduction with CO over Ir/SiO₂ is a structure-sensitive reaction.



Hristiyan A. Aleksandrov, Georgi N. Vayssilov,
Notker Rösch

Journal of Molecular Catalysis A: Chemical 256
(2006) 149

Heterolytic dissociation and recombination of H₂
over Zn,H-ZSM-5 zeolites—A density functional
model study

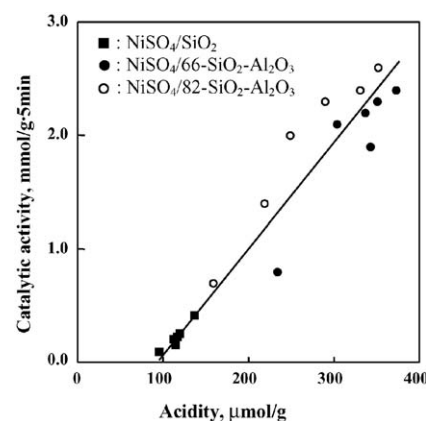


Jong Rack Sohn, Won Cheon Park,
Dong Cheol Shin

Journal of Molecular Catalysis A: Chemical 256
(2006) 156

Characterization of nickel sulfate supported on SiO₂
for ethylene dimerization and promoting effect of
Al₂O₃ on catalytic activity

A series of catalysts, NiSO₄/SiO₂, for ethylene
dimerization was prepared by the impregnation
method using an aqueous solution of nickel sulfate.
The addition of Al₂O₃ to NiSO₄/SiO₂ improved the
thermal stability of catalyst and increased the number
of acid sites on the surface of catalyst. Consequently,
Al₂O₃-promoted catalyst exhibited remarkably higher
catalytic activity than non-promoted NiSO₄/SiO₂. The
catalytic activities of supported NiSO₄ catalysts were
correlated with the acidity of catalysts measured by the
ammonia chemisorption method.

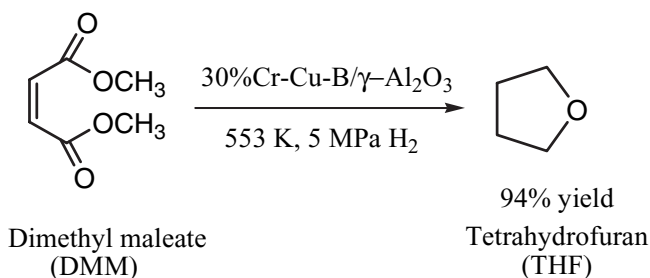


P.J. Guo, L.F. Chen, S.R. Yan, W.L. Dai,
M.H. Qiao, H.L. Xu, K.N. Fan

Journal of Molecular Catalysis A: Chemical 256
(2006) 164

One-step hydrogenolysis of dimethyl maleate to
tetrahydrofuran over chromium-modified Cu-B/γ-
Al₂O₃ catalysts

One-step gas-phase hydrogenolysis of dimethyl maleate to tetrahydrofuran with the yield as high as 94% has been achieved over the chromium-modified Cu-B/γ-Al₂O₃ catalyst prepared by the facile chemical reduction method.

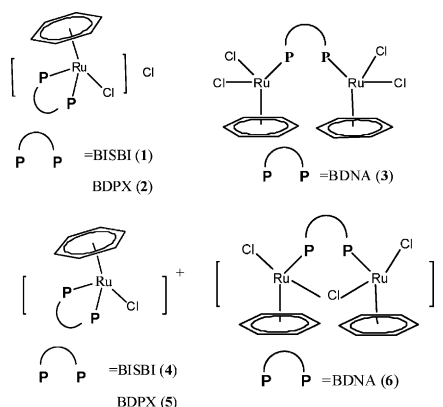


Li Zhang, Yu Zhang, Xiang-Ge Zhou,
Rui-Xiang Li, Xian-Jun Li, Kim-Chung Tin,
Ning-Bew Wong

Journal of Molecular Catalysis A: Chemical 256
(2006) 171

Syntheses of Ru-η⁶-C₆H₆-diphosphine complexes
and their catalytic properties for hydrogenation of
benzene

Six complexes were synthesized and used as cata-
lysts for the hydrogenation of benzene. The study
demonstrated that the complexes **1**, **2** and **3** were
homogeneous and complexes **4**, **5** and **6** were simul-
taneously homogeneous and heterogeneous. The
addition of extra phosphine ligand was favorable to
stabilize the complex in the catalytic process.

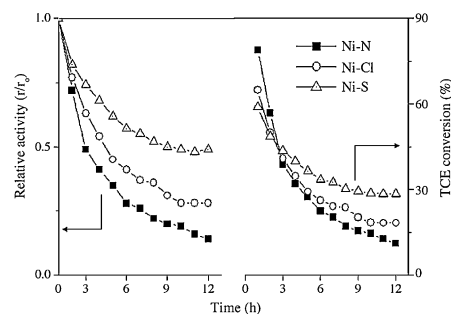


**Pil Kim, Heesoo Kim, Ji Bong Joo,
Wooyoung Kim, In Kyu Song, Jongheop Yi**

Journal of Molecular Catalysis A: Chemical 256 (2006) 178

Effect of nickel precursor on the catalytic performance of Ni/Al₂O₃ catalysts in the hydrodechlorination of 1,1,2-trichloroethane

Ni/γ-Al₂O₃ catalysts were prepared using three types of precursor, nickel nitrate (Ni-N), nickel chloride (Ni-Cl), and nickel sulfate (Ni-S), to elucidate the effect of metal precursor on the catalytic performance in the hydrodechlorination of 1,1,2-trichloroethane (TCE). Among the catalysts tested, the Ni-S catalyst experienced the lowest catalyst deactivation.

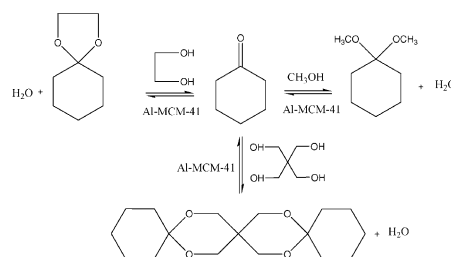


B. Rabindran Jermy, A. Pandurangan

Journal of Molecular Catalysis A: Chemical 256 (2006) 184

Al-MCM-41 as an efficient heterogeneous catalyst in the acetalization of cyclohexanone with methanol, ethylene glycol and pentaerythritol

Mesoporous Al-MCM-41 molecular sieves in the Si/Al ratios 25, 50, 75 and 100 were synthesized under hydrothermal condition. The catalytic activity of these materials was tested for the slurry phase acetalization of cyclohexanone with methanol (MET), ethylene glycol (EG) and pentaerythritol (PEN) at 40–120 °C. This process is an efficient, clean, economic and solvent less technique, in contrast to conventional method, where the standard conditions for acetalization often fail for diaryl ketones, making the desired compounds available only via indirect routes.

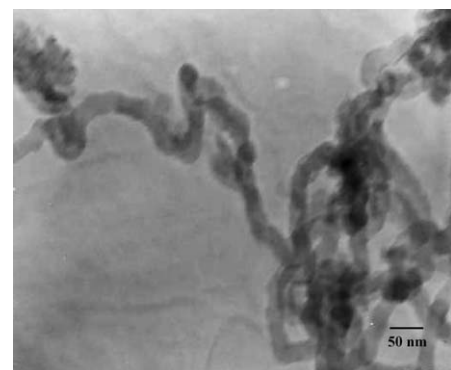


**T. Somanathan, A. Pandurangan,
D. Sathiyamoorthy**

Journal of Molecular Catalysis A: Chemical 256 (2006) 193

Catalytic influence of mesoporous Co-MCM-41 molecular sieves for the synthesis of SWNTs via CVD method

The catalytic activity of Co-MCM-41, which are characterised by XRD, N₂ adsorption isotherms and DRS-UV spectroscopy, was tested for synthesis of carbon nanotubes (CNTs), which are confirmed by SEM, TEM and Raman spectroscopy. The uniform diameter of carbon nanotubes has found to be in the range of 25–30 nm.

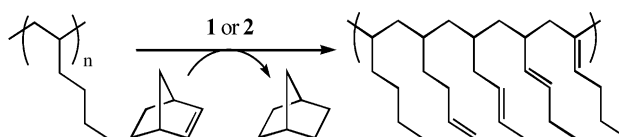


**Amlan Ray, Yury V. Kissin, Keming Zhu,
Alan S. Goldman, Anna E. Cherian,
Geoffrey W. Coates**

Journal of Molecular Catalysis A: Chemical 256 (2006) 200

Catalytic post-modification of alkene polymers. Chemistry and Kinetics of dehydrogenation of alkene polymers and oligomers with pincer Ir complexes

The paper presents kinetic analysis of catalytic dehydrogenation reactions of two high molecular weight, highly branched hydrocarbons, a polymer of 1-hexene (shown in the scheme) and an oligomer of 1-butene. The dehydrogenation reactions were carried out at 150 °C in *p*-xylene solutions with norbornene as a hydrogen acceptor; they were catalyzed with two pincer Ir complexes, [4-methoxy-2,6-C₆H₃(CH₂P-*tert*-Bu₂)]IrH₂ (**1**) and [4-methoxy-2,6-C₆H₂(CH₂P-*iso*-Pr₂)]IrH₂ (**2**). Mechanistically, these reactions are similar to dehydrogenation reactions of low molecular weight alkanes. Kinetic analysis of the reactions yielded the values of effective rate constants for all major reaction steps in the catalytic cycle. Catalytic dehydrogenation of branched polymers in the presence of an alkene hydrogen acceptor represents a viable route to post-synthetic modification of branched polyolefins.

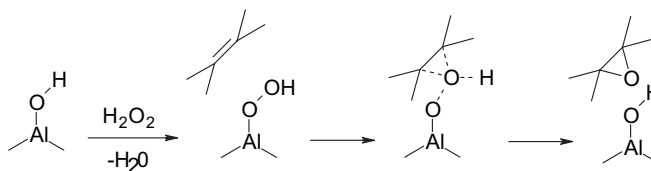


**M.A. Uguina, J.A. Delgado, A. Rodríguez,
J. Carretero, D. Gómez-Díaz**

Journal of Molecular Catalysis A: Chemical 256 (2006) 208

Alumina as heterogeneous catalyst for the regioselective epoxidation of terpenic diolefins with hydrogen peroxide

The epoxidation of several terpenic diolefins (carvone, limonene, terpinolene, α -terpinene and γ -terpinene) in anhydrous conditions using alumina as a heterogeneous catalyst and hydrogen peroxide as oxidant agent is studied in this work. Several kinds of chromatographic aluminas have been employed (acidic, basic and neutral). The reusability of the catalyst has also been addressed.

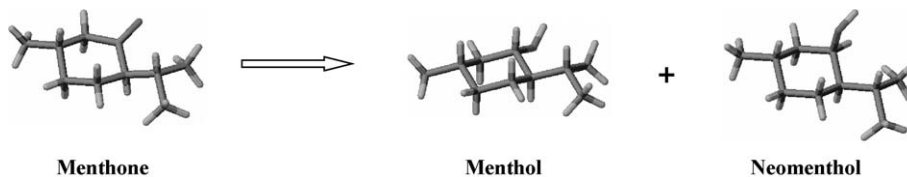


R. Ravichandran

Journal of Molecular Catalysis A: Chemical 256 (2006) 216

Stereoselective hydrogenation of (2*S*,5*R*)-(-)-menthone in presence of β -cyclodextrin

In the presence of β -cyclodextrin and its derivatives, the hydrogenation reaction of (2*S*,5*R*)-(-)-menthone proceeded smoothly with high stereoselectivity for the formation of (1*R*,2*S*,5*R*)-menthol.

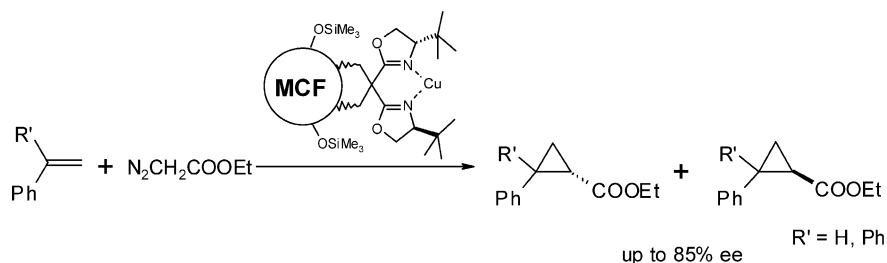


Su Seong Lee, Jackie Y. Ying

Journal of Molecular Catalysis A: Chemical 256 (2006) 219

Siliceous mesocellular foam-supported chiral bisoxazoline: Application to asymmetric cyclopropanation

The bisoxazoline-copper catalysts immobilized on siliceous mesocellular foam showed high enantioselectivity (up to 85% enantiomeric excess) and excellent recyclability in the asymmetric cyclopropanation reactions.

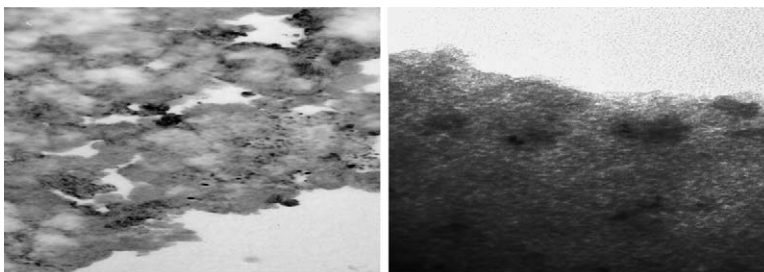


**R. Wojcieszak, A. Jasik, S. Monteverdi,
M. Ziolek, M.M. Bettahar**

Journal of Molecular Catalysis A: Chemical 256 (2006) 225

Nickel niobia interaction in non-classical Ni/Nb₂O₅ catalysts

Hydrazine non-classical Ni/Nb₂O₅ catalyst preparation and properties confirmed that niobia is a typical SMSI oxide, e.g.: (i) precursor hydrazine reduction proceeded only in case of Ni²⁺ ions weakly bonded to a layer of Ni²⁺ ions strongly attached to the support; (ii) nickel active sites were passivated in the final material. SMSI in classical Ni/Nb₂O₅ catalysts was in parallel studied.



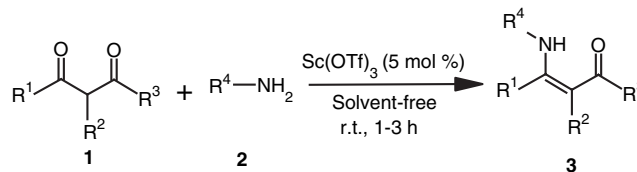
Classical Ni/Nb₂O₅

Non classical Ni/Nb₂O₅

**J.S. Yadav, V. Naveen Kumar, R. Srinivasa Rao,
A. Diana Priyadarshini, P. Purushothama Rao,
B.V.S. Reddy, K. Nagaiah**

Journal of Molecular Catalysis A: Chemical 256
(2006) 234

Sc(OTf)₃ catalyzed highly rapid and efficient synthesis of β-enamino compounds under solvent-free conditions

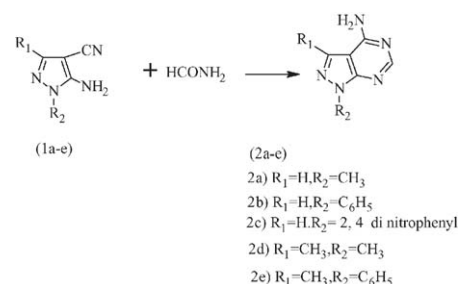


**Majid M. Heravi, Ghadir Rajabzadeh,
Fateme F. Bamoharram, Nasim Seifi**

Journal of Molecular Catalysis A: Chemical 256
(2006) 238

An eco-friendly catalytic route for synthesis of 4-amino-pyrazolo[3,4-d]pyrimidine derivatives by Keggin heteropolyacids under classical heating and microwave irradiation

Reaction of 5-amino-1-phenyl-H-pyrazolo-4-carbonitrile 1(a-e) with formamid was carried out over various solid acid catalysts under reflux and thermal conditions and the results are compared with results of conventional acid catalysts. Among the catalysts studied, heteropolyacids showed higher activities than the conventional acids.

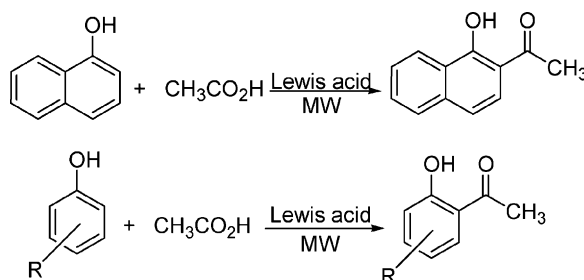


Hossein Naeimi, Leila Moradi

Journal of Molecular Catalysis A: Chemical 256
(2006) 242

Facile, convenient and regioselective direct *ortho*-acylation of phenols and naphthols catalyzed by Lewis acids under free solvent and microwave conditions

Direct *ortho*-acylation of phenol and naphthol derivatives with organic acids proceeded smoothly in the presence of various Lewis acids and microwave irradiation. This method is a new, easy and clean reaction for preparation of *ortho*-hydroxyaryl ketones in excellent yields.

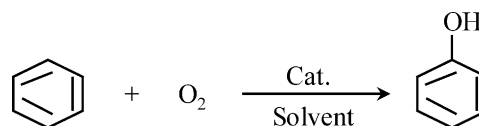


Yanyong Liu, Kazuhisa Murata, Megumu Inaba

Journal of Molecular Catalysis A: Chemical 256
(2006) 247

Direct oxidation of benzene to phenol by molecular oxygen over catalytic systems containing Pd(OAc)₂ and heteropolyacid immobilized on HMS or PIM

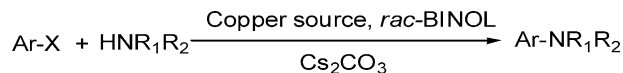
Heteropolyacid and Pd(OAc)₂ were immobilized on the surfaces of HMS and PIM for the benzene oxidation by O₂. The active components of the solid catalysts did not leach to solvent after reaction. Although the activity of heterogeneous systems were lower than that of the homogeneous system, heterogeneous systems achieved the same maximum phenol yield as that obtained in the homogeneous system.



**Di Zhu, Rongliang Wang, Jincheng Mao,
Lei Xu, Fan Wu, Boshun Wan**

Journal of Molecular Catalysis A: Chemical 256
(2006) 256

Efficient copper-catalyzed amination of aryl halides with amines and N-H heterocycles using *rac*-BINOL as ligand



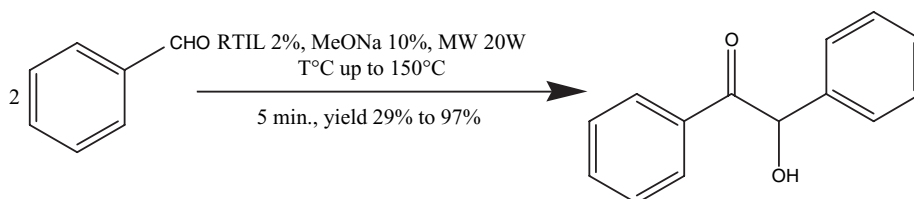
ArX = aryl iodides, aryl bromides,
heteroaryl bromides, heteroaryl chlorides
HNR₁R₂ = alkyl amines, NH-heterocycles

**Julien Estager, Jean-Marc L  v  que,
Rapha  l Turgis, Micheline Draye**

Journal of Molecular Catalysis A: Chemical 256
(2006) 261

Solventless and swift benzoin condensation catalyzed by 1-alkyl-3-methylimidazolium ionic liquids under microwave irradiation

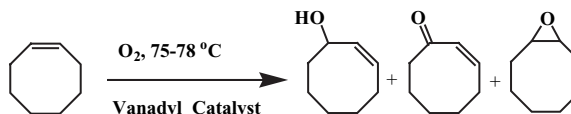
An eco-friendly solventless and quick benzoin condensation is reported. Different 1-alkyl-3-methylimidazolium based ionic liquids are used as catalysts of a reaction activated by microwave irradiation. In these conditions, up to 97% yield are obtained for a 5-min reaction time.



Sajjad Mohebbi, Farzad Nikpour, Saied Raiati

Journal of Molecular Catalysis A: Chemical 256
(2006) 265

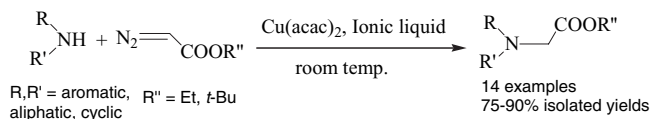
Homogeneous green catalyst for epoxidation of cyclooctene by mono oxovanadium(IV) complexes of N₂O₂ donate ligand system



**M. Lakshmi Kantam, B. Neelima,
Ch. Venkat Reddy**

Journal of Molecular Catalysis A: Chemical 256
(2006) 269

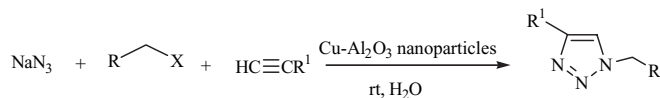
Cu(acac)₂ immobilized in ionic liquids: A reusable catalytic system for the insertion of α-diazo compounds into N-H bonds of amines



**M. Lakshmi Kantam, V. Swarna Jaya,
B. Sreedhar, M. Mohan Rao, B.M. Choudary**

Journal of Molecular Catalysis A: Chemical 256
(2006) 273

Preparation of alumina supported copper nanoparticles and their application in the synthesis of 1,2,3-triazoles



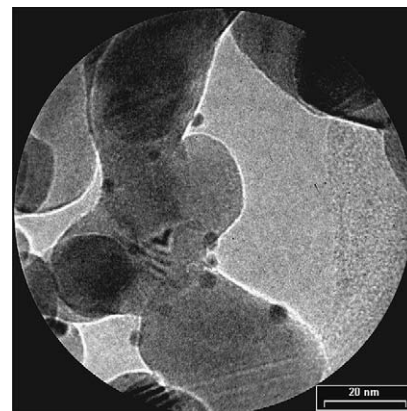
R=Alkyl, Allyl
X=Cl, Br, I
R¹=Aromatic, Aliphatic

**Svetlana Ivanova, Véronique Pitchon,
Corinne Petit**

Journal of Molecular Catalysis A: Chemical 256
(2006) 278

Application of the direct exchange method in the preparation of gold catalysts supported on different oxide materials

This publication describes the application of the direct anionic exchange method (DAE) in the preparation of gold nanoparticles supported of different oxide materials. Some of the most frequently used metal oxides in the gold catalysis are investigated, i.e., TiO₂, ZrO₂, CeO₂ and Al₂O₃, as well as some less typical such as SiO₂ and MgO. The formation of gold nanoparticles has been proven by transmission electron microscopy with particles size ranging between 1.9 and 3 nm for all catalysts.



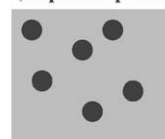
A. Durand

Journal of Molecular Catalysis A: Chemical 256
(2006) 284

Synthesis of amphiphilic polysaccharides by micellar catalysis

Amphiphilic polymers are prepared by chemical modification of dextran. Hydrocarbon groups are attached to the polysaccharide chains by reacting dextran with 1,2-epoxides in a basic aqueous medium. The reaction medium is biphasic with the organic epoxide emulsified in the aqueous phase. Adding a cationic surfactant appears to make chemical modification possible even with highly hydrophobic epoxides (1,2-epoxydodecane or 1,2-epoxyoctadecane).

Epoxide
(dispersed phase)



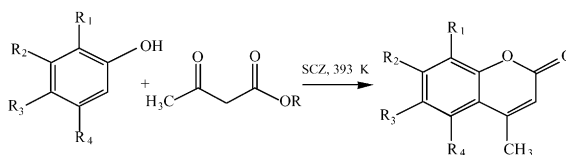
Dextran + surfactant + base
(continuous phase)

**Benjaram M. Reddy, Meghshyam K. Patil,
Pandian Lakshmanan**

Journal of Molecular Catalysis A: Chemical 256
(2006) 290

Sulfated Ce_xZr_{1-x}O₂ solid acid catalyst for solvent free synthesis of coumarins

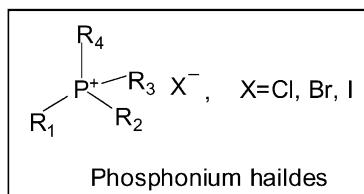
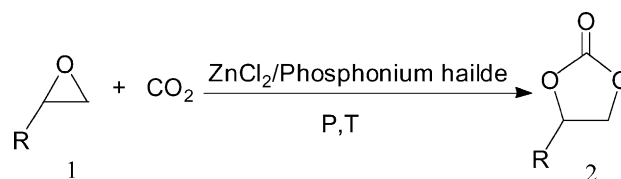
A novel SO₄²⁻/Ce_xZr_{1-x}O₂ catalyst has been employed for Pechmann condensation of phenols under solvent-free conditions. This methodology offers significant improvements with regard to yield of products, simplicity in operation, and green aspects by avoiding toxic conventional catalysts and solvents.



Jian Sun, Lei Wang, Suojiang Zhang, Zengxi Li,
Xiangping Zhang, Wenbin Dai, Ryohei Mori

Journal of Molecular Catalysis A: Chemical 256
(2006) 295

ZnCl₂/phosphonium halide: An efficient Lewis
acid/base catalyst for the synthesis of cyclic carbonate

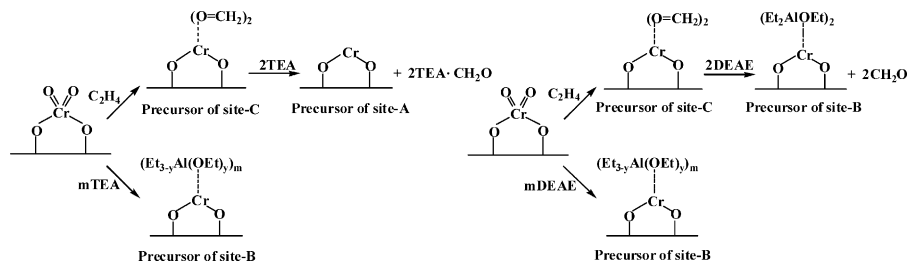


Wei Xia, Boping Liu, Yuwei Fang,
Kouichi Hasebe, Minoru Terano

Journal of Molecular Catalysis A: Chemical 256
(2006) 301

Unique polymerization kinetics obtained from
simultaneous interaction of Phillips Cr(VI)O₄/SiO₂
catalyst with Al-alkyl cocatalyst and ethylene
monomer

Ethylene polymerization was carried out using Phillips Cr(VI)O₄/SiO₂ catalyst with simultaneous interaction of the catalyst with Al-alkyl cocatalyst and monomer. Completely different polymerization kinetics was found compared with that of the same catalyst pre-modified by Al-alkyl cocatalyst during catalyst preparation stage. Plausible mechanisms of formation of active sites were proposed in Schemes 1 and 2.



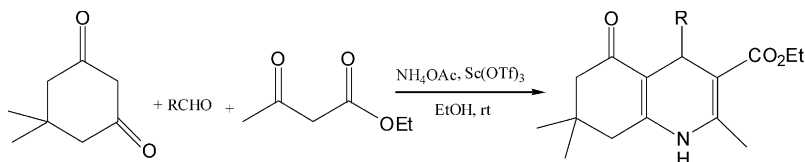
Scheme 1

Scheme 2

James L. Donelson, Richard A. Gibbs,
Surya K. De

Journal of Molecular Catalysis A: Chemical 256
(2006) 309

An efficient one-pot synthesis of polyhydroquino-
line derivatives through the Hantzsch four compo-
nent condensation

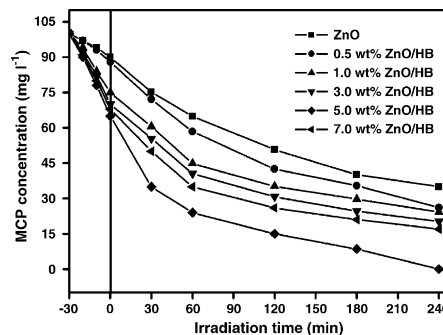


S. Anandan, A. Vinu, N. Venkatachalam,
B. Arabindoo, V. Murugesan

Journal of Molecular Catalysis A: Chemical 256
(2006) 312

Photocatalytic activity of ZnO impregnated H β and
mechanical mix of ZnO/H β in the degradation of
monocrotophos in aqueous solution

The photocatalytic degradation of monocrotophos (MCP) in aqueous solution was carried out using ZnO and zeolite supported ZnO using low pressure mercury lamps. The ZnO impregnated H β requires shorter irradiation time for complete mineralisation of MCP than the mechanical mixture of ZnO and H β or pure ZnO. This could mainly be attributed to fine dispersion of ZnO on ZnO impregnated H β and hydrophobicity of the zeolite support.

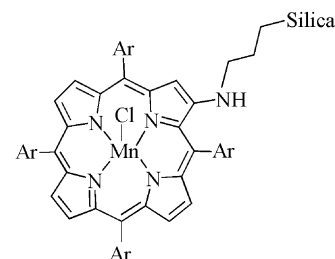


Susana L.H. Rebelo, A. Ricardo Gonçalves, Mariette M. Pereira, Mário M.Q. Simões, M. Graça P.M.S. Neves, José A.S. Cavaleiro

Journal of Molecular Catalysis A: Chemical 256 (2006) 321

Epoxidation reactions with hydrogen peroxide activated by a novel heterogeneous metalloporphyrin catalyst

A novel heterogeneous catalyst was developed by immobilization of the robust Mn(TDCPP)Cl on an inorganic support by a strong covalent bond through the β -position of the macrocycle. This new material has demonstrated to be an active, selective and reusable catalyst in clean epoxidation reactions using hydrogen peroxide as oxidant.

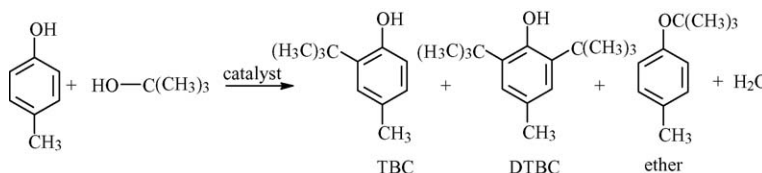


Suresh M. Kumbar, G.V. Shanbhag, F. Lefebvre, S.B. Halligudi

Journal of Molecular Catalysis A: Chemical 256 (2006) 324

Heteropoly acid supported on titania as solid acid catalyst in alkylation of *p*-cresol with *tert*-butanol

The catalytic activity of 12-tungstophosphoric acid (TPA) supported on titania was investigated in butylation of *p*-cresol with *tert*-butanol. The catalyst with 20% TPA/TiO₂ calcined at 700 °C has shown higher activity than WO₃/ZrO₂, sulfated zirconia, H-beta catalyst in the above reaction.



Anantha Iyengar Gopalan, Kwang-Pill Lee, Kalayil Manian Manesh, Padmanaban Santhosh, Jun Heon Kim

Journal of Molecular Catalysis A: Chemical 256 (2006) 335

Gold nanoparticles dispersed into poly(aminothiophenol) as a novel electrocatalyst—Fabrication of modified electrode and evaluation of electrocatalytic activities for dioxygen reduction

Gold nanoparticles were embedded into an electroactive polymer layer to modify the glassy carbon (GC) electrode and to fabricate a novel catalyst electrode. Cyclic voltammetry was performed to form poly(4-aminothiophenol), PATP and Au⁰ nanoparticles in the cyclic potential operation and to fabricate the newer catalyst electrode, PATP-Au_{nano}. A more positive onset potential and higher catalytic current for oxygen reduction are striking features of the PATP-Au_{nano}. The PATP-Au_{nano} catalysts with different loadings of Au⁰ nanoparticles show promise for their use in fuel cells, O₂ sensor, etc.

