

Contents

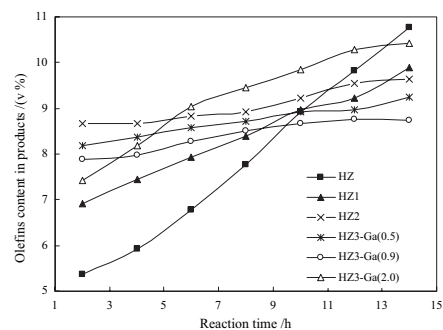
Articles

Peiqing Zhang, Xinwen Guo, Hongchen Guo, Xiangsheng Wang

Journal of Molecular Catalysis A: Chemical 261 (2007) 139

Study of the performance of modified nano-scale ZSM-5 zeolite on olefins reduction in FCC gasoline

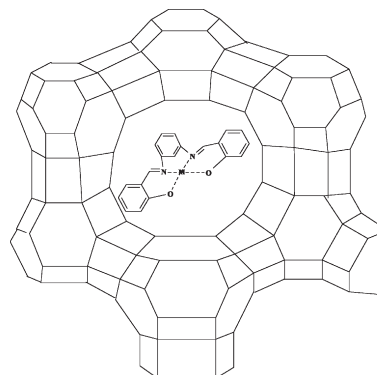
The modified nanoscale HZSM-5 catalyst for the upgrading of FCC gasoline was prepared by the combined modification procedures. The outstanding characteristic of this catalyst was that the olefin and sulfur contents were greatly reduced with gasoline octane number preserved.



Masoud Salavati-Niasari, Maryam Shaterian, Mohammad Reza Ganjali, Parviz Norouzi

Journal of Molecular Catalysis A: Chemical 261 (2007) 147

Oxidation of cyclohexene with *tert*-butylhydroperoxide catalyzed by host (nanocavity of zeolite-Y)/guest (Mn(II), Co(II), Ni(II) and Cu(II) complexes of *N,N'*-bis(salicylidene)phenylene-1,3-diamine nanocomposite materials (HGNM)



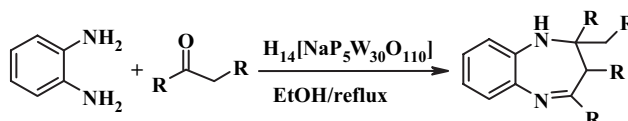
M = Mn(II), Co(II), Cu(II) and Ni(II)

Majid M. Heravi, Fatemeh Derikvand, Leila Ranjbar, Fatemeh F. Bamoharram

Journal of Molecular Catalysis A: Chemical 261 (2007) 156

$H_{14}[NaP_5W_{30}O_{110}]$ as a heterogeneous recyclable catalyst for the synthesis of 1,5-benzodiazepines in refluxing ethanol

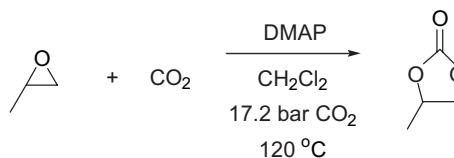
2,3-Dihydro-1H-1,5-benzodiazepines are synthesized by the condensation of *o*-phenylenediamine derivatives and various ketones in the presence of a Preyssler type heteropolyacid as a recyclable catalyst in refluxing ethanol.



Rebecca A. Shiels, Christopher W. Jones

Journal of Molecular Catalysis A: Chemical 261 (2007) 160

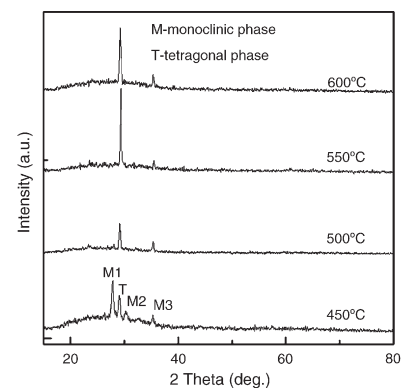
Homogeneous and heterogeneous 4-(*N,N*-dialkylamino)pyridines as effective single component catalysts in the synthesis of propylene carbonate

**Wu Xiaohong, Qin Wei, He Weidong**

Journal of Molecular Catalysis A: Chemical 261 (2007) 167

Thin bismuth oxide films prepared through the sol-gel method as photocatalyst

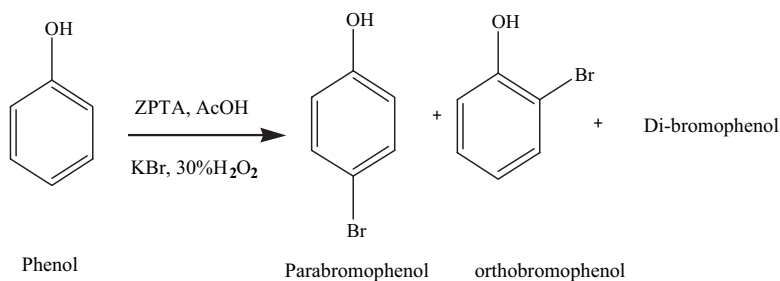
Bismuth oxide films are prepared through the sol-gel method and the photocatalytic properties of bismuth oxide films annealed at different temperatures are studied in the paper. It has been found that the bismuth oxide films annealed at 550 °C have the best photocatalytic properties of all due to the transformation of bismuth oxide phases.

**Sujata Mallik, K.M. Parida, S.S. Dash**

Journal of Molecular Catalysis A: Chemical 261 (2007) 172

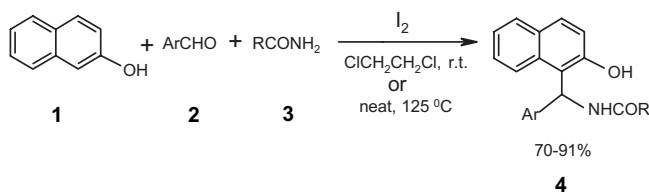
Studies on heteropoly acid supported zirconia. III: Oxidative bromination of phenol using phosphotungstic acid supported on zirconia

The electrophilic substitution of bromine generated in situ from KBr as a bromine source and hydrogen peroxide as an oxidant. In presence of H_2O_2 , the acetic acid gives peracetic acid, which is stronger oxidant than H_2O_2 and efficiently oxidizes the Br^- to Br^+ , which reacts in presence of Brønsted acidic centres of ZPTA with the organic substrate phenol to give, brominated compounds.

**Biswanath Das, Keetha Laxminarayana, B. Ravikanth, B. Rama Rao**

Journal of Molecular Catalysis A: Chemical 261 (2007) 180

Iodine catalyzed preparation of amidoalkyl naphthols in solution and under solvent-free conditions

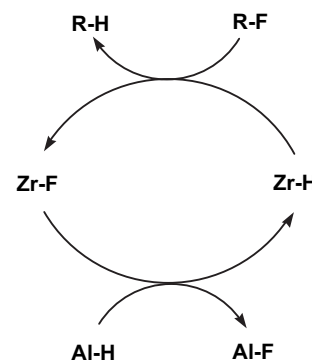


Ulrike Jäger-Fiedler, Marcus Klahn,
Perdita Arndt, Wolfgang Baumann,
Anke Spannenberg, Vladimir V. Burlakov,
Uwe Rosenthal

Journal of Molecular Catalysis A: Chemical 261
(2007) 184

Room-temperature catalytic hydrodefluorination of pentafluoro-pyridine by zirconocene fluoro complexes and diisobutylaluminumhydride

Mixtures of the zirconocene fluorides *rac*-(*ebthi*)ZrF₂ or Cp₂ZrF₂ as pre-catalysts together with *i*-Bu₂AlH as activator are a new system for active catalysts in the room-temperature hydrodefluorination (HDF) of pentafluoro-pyridine under formation of the 2,3,5,6-tetrafluoro-pyridine. The active species for the conversion were the actually formed zirconocene hydrides [*rac*-(*ebthi*)ZrH(μ-H)]₂ and [Cp₂ZrH(μ-H)]₂. The results, we obtained (rt, 24 h, turn over number 67), showed a significantly better performance compared to other investigations published before for this HDF reaction with pentafluoro-pyridine.

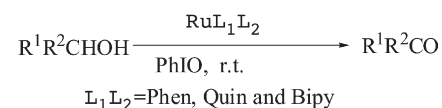


Zhi Wang Yang, Qiao Xiang Kang, Feng Quan,
Zi Qiang Lei

Journal of Molecular Catalysis A: Chemical 261
(2007) 190

Oxidation of alcohols using iodobenzene as oxidant catalyzed by ruthenium complexes under mild reaction conditions

Aromatic and alkyl alcohols were oxidized to the corresponding aldehydes or ketones at room temperature with high conversion and selectivity to the desired products of 100% using iodobenzene as oxidant catalyzed by ruthenium complexes Phen-Ru-Phen, Phen-Ru-Bipy, Phen-Ru-Quin, Quin-Ru-Quin and Bipy-Ru-Quin (where Phen = 1,10-phenanthroline, Quin = 8-hydroxyquinoline, Bipy = 2,2'-bipyridine). The reaction conditions are mild, the ligands used in this oxidation system are commercially available and the procedure for the preparation of the complexes is very simple.

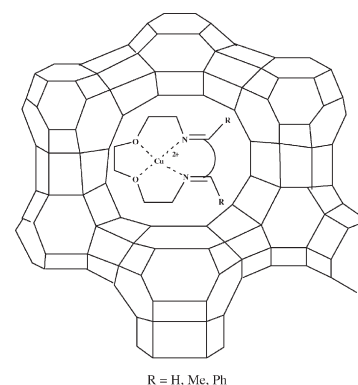


Masoud Salavati-Niasari, Elham Zamani,
Mohammad Reza Ganjali, Parviz Norouzi

Journal of Molecular Catalysis A: Chemical 261
(2007) 196

Synthesis, characterization and liquid phase oxidation of cyclohexanol using *tert*-butylhydroperoxide over host (zeolite-Y)/guest (copper(II) complexes of 12- and 13-membered diaza dioxo Schiff-base macrocyclic ligand) nanocomposite materials (HGNM)

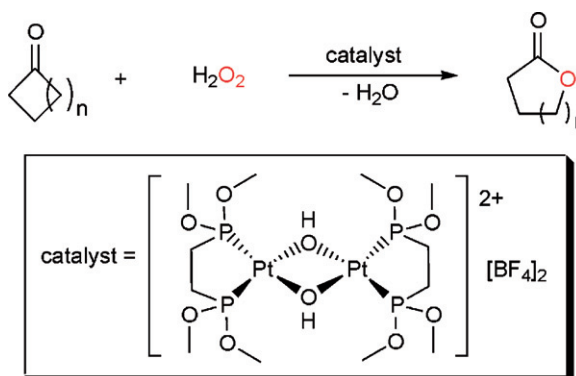
Nanocavity microreactor containing 12- and 13-membered diaza dioxo Schiff-base copper(II) complexes have been prepared by the one-pot template synthesis of (1,8-diamino-3,6-dioxaoctane)copper(II) with bifunctional diketone within the pores of zeolite-Y. Encapsulated copper(II) complex is catalytically very efficient as compared to other neat complexes for oxidation of cyclohexanol with *tert*-butylhydroperoxide (TBHP) as oxidant and is stable to be recycled without much deterioration.



Paolo Sgarbossa, Alessandro Scarso,
Erika Pizzo, Silvia Mazzega Sbovata,
Augusto Tassan, Rino A. Michelin,
Giorgio Strukul

Journal of Molecular Catalysis A: Chemical 261
(2007) 202

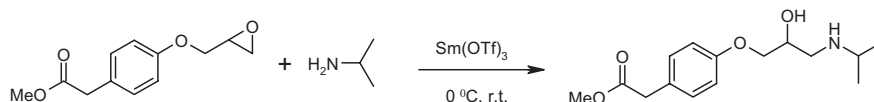
Synthesis, characterization and Baeyer-Villiger oxidation of ketones by the bis-cationic platinum(II) complex [Pt(μ-OH)(Pom-Pom)]₂[BF₄]₂ [Pom-Pom = (OMe)₂PCH₂CH₂P(OMe)₂]



**J.S. Yadav, A. Ramesh Reddy,
A. Venkat Narsaiah, B.V.S. Reddy**

Journal of Molecular Catalysis A: Chemical 261
(2007) 207

An efficient protocol for regioselective ring opening of epoxides using samarium triflate: Synthesis of propranolol, atenolol and RO363

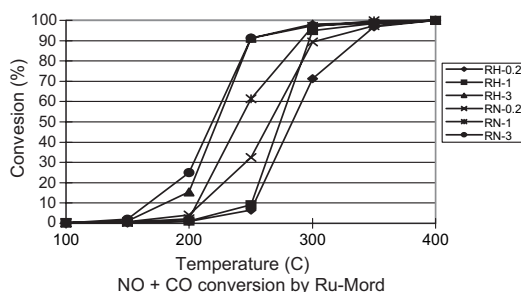


**Nitin Labhsetwar, H. Minamino, M. Mukherjee,
T. Mitsuhashi, S. Rayalu, M. Dhakad,
H. Haneda, J. Subrt, Sukumar Devotta**

Journal of Molecular Catalysis A: Chemical 261
(2007) 213

Catalytic properties of Ru-mordenite for NO reduction

Ruthenium exchanged mordenite (in H and Na forms) have been evaluated for their catalytic activity towards NO-CO reaction. The NO reduction activity was observed to be the factor of ruthenium content, while Na shows promotional effect probably due to electron transfer. Zeolite offers high surface area with excellent dispersion of active metal ions.

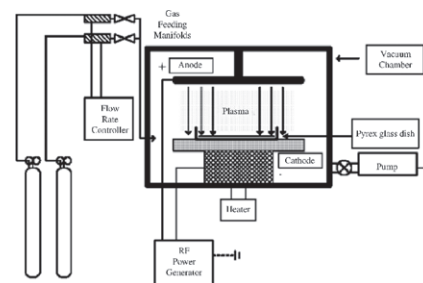


**Chao-Ming Huang, Lung-Chuan Chen,
Kong-Wei Cheng, Guan-Ting Pan**

Journal of Molecular Catalysis A: Chemical 261
(2007) 218

Effect of nitrogen-plasma surface treatment to the enhancement of TiO₂ photocatalytic activity under visible light irradiation

A visible-light-active commercial TiO₂ powder was prepared by thermal nitrogen-plasma processing as the surface treatment. The photoactivity of the treated sample was higher than that of plain TiO₂. From the results of reaction rate constant and mineralization yield of IPA, it was found that the powders treated for 30 min demonstrated the highest photocatalytic activity among all samples.

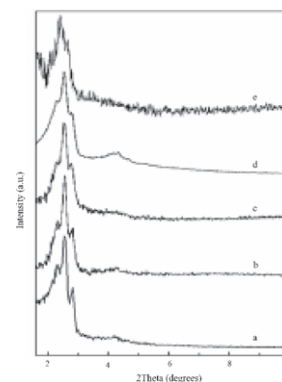


Xinhong Zhao, Xiaolai Wang

Journal of Molecular Catalysis A: Chemical 261
(2007) 225

Synthesis, characterization and catalytic application of Cr-SBA-1 mesoporous molecular sieves

Cr-SBA-1 mesoporous molecular sieves were newly prepared by direct synthesis. The four samples with different Cr content (Fig. 1a-d) show an intense (2 1 0) reflection and smaller (2 0 0) and (2 1 1) reflections in the region of $2\theta = 1.5-3^\circ$, which are indexed to *P6mm* space group.

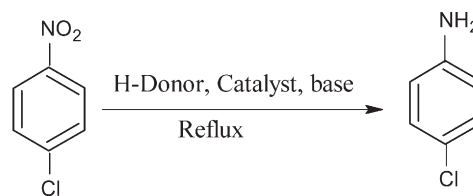


Nivedita S. Chaubal, Manohar R. Sawant

Journal of Molecular Catalysis A: Chemical 261 (2007) 232

Nitro compounds reduction via hydride transfer using mesoporous mixed oxide catalyst

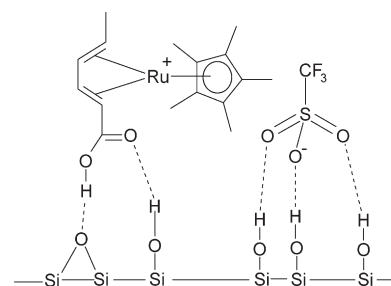
Kinetics of nitrobenzene reduction via hydride transfer over mesoporous NiCo_2O_4 catalyst in the temperature range of 323–363 K using 2-propanol as hydrogen donor and NaOH as a promoter was studied.

**Eliška Leitmannová, Libor Červený**

Journal of Molecular Catalysis A: Chemical 261 (2007) 242

Immobilization of $[\text{Cp}^*\text{Ru}(\text{sorbic acid})]\text{CF}_3\text{SO}_3$ catalyst: Application for sorbic acid hydrogenation and comparison with homogeneous and two-phase catalysis

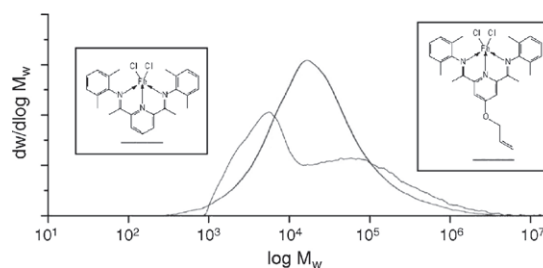
The Ru complex active for selective sorbic acid hydrogenation to *cis*-hex-3-enoic acid had been immobilized by means of hydrogen bonds using direct procedure. The immobilized catalyst was tested for selective hydrogenation and gave almost the same results in selectivity as the catalysis in homogeneous phase. The characterization, kinetic experiments and comparison tests were carried out. The stability of the catalyst was increased by the immobilization.

**Marcus Seitz, Wolfgang Milius, Helmut G. Alt**

Journal of Molecular Catalysis A: Chemical 261 (2007) 246

Iron(II) coordination compounds with ω -alkenyl substituted bis(imino)pyridine ligands: Self-immobilizing catalysts for the polymerization of ethylene

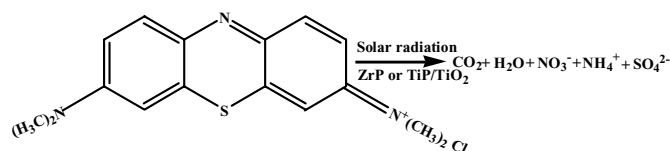
Coordination compounds of iron(II) chloride with bis(imino)pyridine ligands bearing ω -alkenyl substituents were synthesized and characterized. They can be activated with methylalumoxane (MAO) and then be used as self-immobilizing catalysts for the polymerization of ethylene. The produced polyethylene has a monomodal molecular weight distribution which is in contrast to polyethylenes that are produced with the unsubstituted catalysts.

**D.P. Das, N. Baliarsingh, K.M. Parida**

Journal of Molecular Catalysis A: Chemical 261 (2007) 254

Photocatalytic decolorisation of methylene blue (MB) over titania pillared zirconium phosphate (ZrP) and titanium phosphate (TiP) under solar radiation

The photodecolorisation of methylene blue was studied over 4 and 2 wt.% TiO_2 intercalated titanium phosphate and zirconium phosphate, respectively, under solar radiation at pH 7.0. The effect of hydrogen peroxide, sodium chloride, potassium persulphate were studied on the initial rate of photodegradation of methylene blue. Hydrogen peroxide and potassium persulphate were found to impose the enhancing effect on the photodegradation of methylene blue by retarding the electron-hole recombination process. But sodium chloride was found to inhibit the degradation process. Four weight percent titania pillared TiP showed highest activity due to its higher surface area, basal spacing, pore volume and lower crystallite size than that of 2 wt.% TiO_2 pillared ZrP.

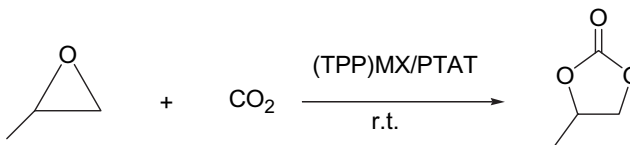


Lili Jin, Huanwang Jing, Tao Chang, Xiuli Bu, Li Wang, Zhongli Liu

Journal of Molecular Catalysis A: Chemical 261 (2007) 262

Metal porphyrin/phenyltrimethylammonium tribromide: High efficient catalysts for coupling reaction of CO₂ and epoxides

Novel and efficient catalysts of metal porphyrin (M(TPP)X, M = Co, Fe, Ru, Mn; X = Cl⁻, Br⁻, OAc⁻, OTs⁻, Cl₃CCO₂⁻)/phenyltrimethylammonium tribromide were developed to catalyze the coupling reaction of carbon dioxide and various epoxides at room temperature.

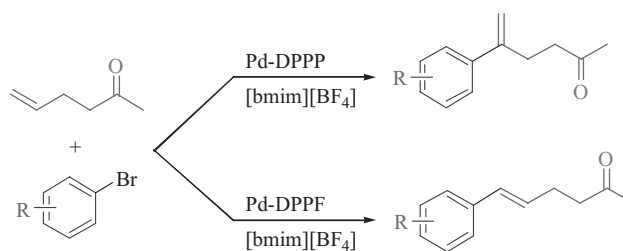


Jun Mo, Jiwu Ruan, Lijin Xu, Zeynab Hyder, Ourida Saidi, Shifang Liu, Wen Pei, Jianliang Xiao

Journal of Molecular Catalysis A: Chemical 261 (2007) 267

Palladium-catalyzed Heck arylation of 5-hexen-2-one in ionic liquid: A novel approach to arylated γ,δ -unsaturated ketones

Controlled regioselectivity: Depending on the ligand used, the Heck arylation in ionic liquid affords the γ -arylated γ,δ -unsaturated ketones or the (*E*)-type δ -arylated γ,δ -unsaturated ketones with high regioselectivity with no need for costly or toxic halide scavengers.

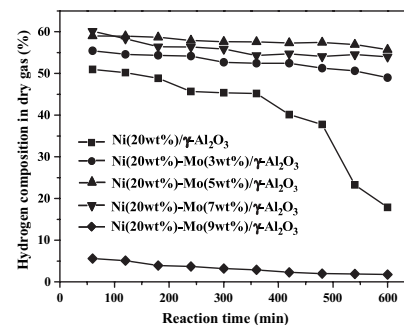


Min Hye Youn, Jeong Gil Seo, Pil Kim, In Kyu Song

Journal of Molecular Catalysis A: Chemical 261 (2007) 276

Role and effect of molybdenum on the performance of Ni-Mo/ γ -Al₂O₃ catalysts in the hydrogen production by auto-thermal reforming of ethanol

Bimetallic Ni-Mo/ γ -Al₂O₃ catalysts with different Mo contents were prepared using a co-impregnation method for use in the hydrogen production by auto-thermal reforming of ethanol. Among the catalysts tested, Ni(20 wt. %)-Mo(5 wt. %)/ γ -Al₂O₃ catalyst showed the best catalytic performance. It was also revealed that Ni(20 wt. %)/ γ -Al₂O₃ catalyst with no molybdenum experienced a severe catalyst deactivation due to the coke deposition.



Praveen K. Tandon, Santosh Kumar, Manish Srivastava, Shaista Z. Khanam, Santosh B. Singh

Journal of Molecular Catalysis A: Chemical 261 (2007) 282

Oxidation of hydrates of cyclic ketones by alkaline hexacyanoferrate(III)

Oxidation of cyclopentanone and cyclohexanone by alkaline hexacyanoferrate(III) is quite fast. Second order in [OH⁻] indicates that oxidation proceeds through the formation of hydrates. Rate constant and thermodynamic parameters at five temperatures were calculated. Dicarboxylic acid was confirmed by IR as the product. Rate law given was

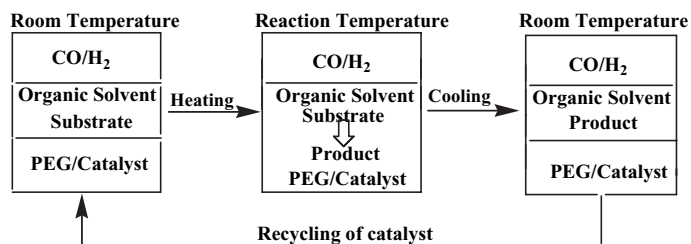
$$-\frac{d[\text{Fe}(\text{CN})_6]^{3-}}{dt} = k K_1 K_2 \frac{[\text{S}] [\text{OH}^-]^2 [\text{Fe}(\text{CN})_6]^{3-}}{[\text{H}_2\text{O}]^2}$$

Yuchuan Yang, Jingyang Jiang, Yanhua Wang, Chun Liu, Zilin Jin

Journal of Molecular Catalysis A: Chemical 261 (2007) 288

A new thermoregulated PEG biphasic system and its application for hydroformylation of 1-dodecene

A new thermoregulated biphasic system composed of PEG-400/1,4-dioxane/*n*-heptane, which underwent a reversible change from biphasic to monophasic regulated by temperature, was reported and used for the hydroformylation of 1-dodecene catalyzed by Rh/TMPGP ($\text{P}[\text{O}(\text{CH}_2\text{CH}_2\text{O})_n\text{CH}_3]_3$, $n = 8$) complexes. The catalyst could be reused for 23 successive runs without appreciable loss of catalytic activity and the average Rh leaching to the organic phase was 0.65% each run.

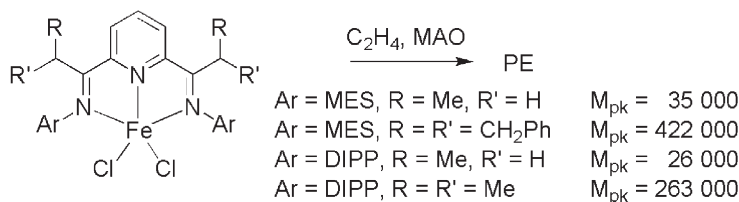


Stuart McTavish, George J.P. Britovsek, Theo M. Smit, Vernon C. Gibson, Andrew J.P. White, David J. Williams

Journal of Molecular Catalysis A: Chemical 261 (2007) 293

Iron-based ethylene polymerization catalysts supported by bis(imino)pyridine ligands: Derivatization via deprotonation/alkylation at the ketimine methyl position

A family of bis(imino)pyridine pre-ligands bearing bulky substituents at the imine carbon position has been prepared using a deprotonation/alkylation procedure. Their iron complexes are highly active ethylene polymerisation catalysts when treated with MAO; increasing the size of the ketimine substituent leads to an increase in the molecular weight of the resultant polyethylene and high catalyst productivities are maintained.

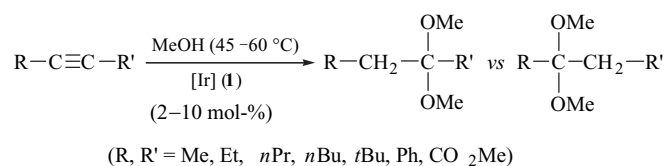


Marcin Konkol, Harry Schmidt, Dirk Steinborn

Journal of Molecular Catalysis A: Chemical 261 (2007) 301

Iridium-catalyzed addition of methanol to internal alkynes

The 18-crown-6 (18C6) ether adduct of sodium hexachloroiridate $[\text{Na}(18\text{C}6)_2[\text{IrCl}_6] \cdot x\text{H}_2\text{O}$ (**1**) was found to catalyze effectively an addition of methanol to a wide variety of internal alkynes $\text{RC}\equiv\text{CR}'$ yielding the corresponding ketals. The regioselectivity, governed by steric and electronic factors, is discussed in terms of the nature of $\text{R/R}'$ (n -alkyls versus branched alkyls versus aryls). Furthermore, the catalytic potential of other iridium compounds in the addition of methanol to hex-3-yne is reported.



Dimitris Zois, Chrysoula Vartzouma, Yiannis Deligiannakis, Nick Hadjiliadis, Luigi Casella, Enrico Monzani, Maria Louloudi

Journal of Molecular Catalysis A: Chemical 261 (2007) 306

Active catalytic centers in silica-supported Cu(II) and Mn(II) biomimetic complexes: Correlation between catalytic and EPR data

Two polydentate ligands have been synthesized and immobilized on a silica surface via covalent bonds. The silica-supported Mn(II) complexes catalyze efficiently the epoxidation of several alkenes by hydrogen peroxide in the presence of ammonium acetate. The corresponding copper(II) complexes have been evaluated for the catalytic oxidation of 3,5-di-*t*-butylcatechol by dioxygen. Catalytic data and structural information obtained by EPR spectra are correlated and discussed.

