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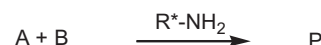
Articles

Fangzhi Peng, Zhihui Shao

Journal of Molecular Catalysis A: Chemical 285 (2008) 1

Advances in asymmetric organocatalytic reactions catalyzed by chiral primary amines

A short review on the development and application of chiral primary amine catalysts in organocatalytic enantioselective reactions has been described.

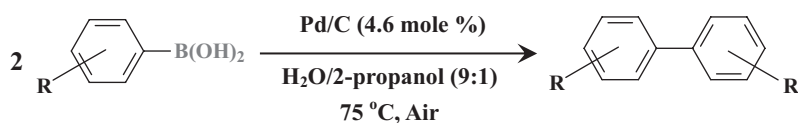


Jeng-Shiou Chen, Karsten Krogh-Jespersen, Johannes G. Khinast

Journal of Molecular Catalysis A: Chemical 285 (2008) 14

Homocoupling of arylboronic acids was successfully carried out by Pd/C in water/2-propanol (9:1 volume ratio) under air to obtain symmetric biaryls in good yield. DFT calculations indicate that the presence of sulfur in the functional group hinders Pd catalysis and results in a slow reaction. The calculations also suggest that the overall reactivity of substituted arylboronic acids is independent of the first reaction step, the oxidative addition of Pd to the arylboronic acid.

Base- and ligand-free heterogeneously catalyzed homocoupling of arylboronic acids

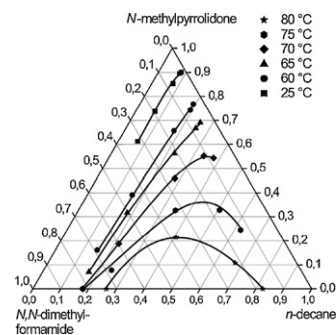


Arno Behr, Guido Henze, Leif Johnen, Colin Awungacha

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Advances in thermomorphic liquid/liquid recycling of homogeneous transition metal catalysts

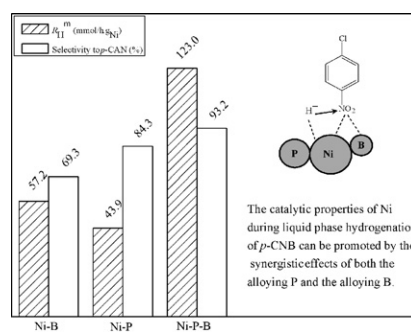
The recycling concept for molecular catalysts based on temperature dependent multi-component solvent systems has been improved and extended by optimization of solvent selection and simplification. Potential new solvent combinations have been found. Furthermore a new type of temperature dependent solvent systems consisting of only two solvents has been investigated.



Hui Li, Qingfei Zhao, Hexing Li

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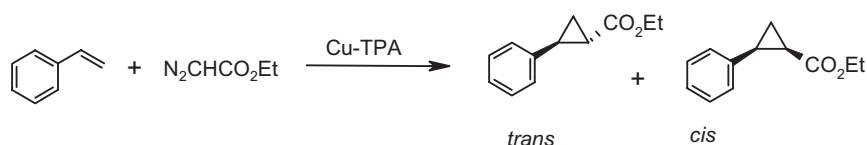
Selective hydrogenation of *p*-chloronitrobenzene over Ni–P–B amorphous catalyst and synergistic promoting effects of B and P


J.S. Yadav, B.V. Subba Reddy, K.V. Purnima, K. Nagaiah, N. Lingaiah

Journal of Molecular Catalysis A: Chemical 285 (2008) 36

Cu-exchanged phosphotungestic acid: An efficient and reusable heteropoly acid for the cyclopropanation of alkenes via C–H insertion

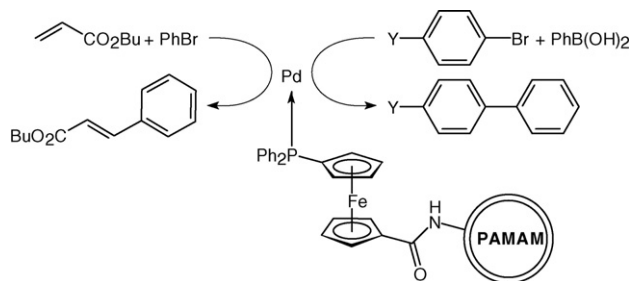
Alkenes undergo smooth cyclopropanation with ethyl diazoacetate (EDA) using a catalytic amount of Cu-exchanged phosphotungestic acid (Cu-TPA) in dichloromethane under mild reaction conditions to afford cyclopropanecarboxylates in high yields with moderate selectivity. The catalyst is covered quantitatively and recycled for three to five subsequent runs with a minimal decrease of activity.


Janett Kühnert, Martin Lamač, Jan Demel, Anja Nicolai, Heinrich Lang, Petr Štěpnička

Journal of Molecular Catalysis A: Chemical 285 (2008) 41

Phosphinoferrocenyl-terminated amidoamines: Synthesis and catalytic utilization in palladium-mediated C–C bond forming reactions

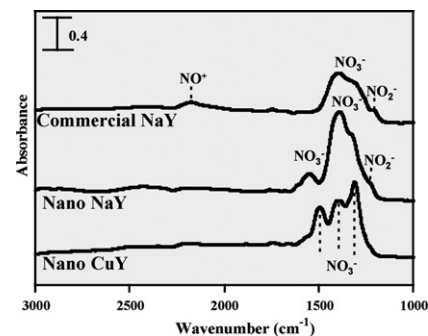
First-generation poly(amido-amine) dendrimers (PAMAM) functionalized with 1'-(diphenylphosphino)ferrocenecarbonyl groups at the terminal amine moieties afford active catalysts for palladium-catalyzed Suzuki and Heck coupling reactions when combined with palladium(II) acetate. Even for such relatively small molecular systems, a positive influence of the dendrimeric assembly on the catalyst performance was noted.


Sherrie Elzey, Anamika Mubayi, Sarah C. Larsen, Vicki H. Grassian

Journal of Molecular Catalysis A: Chemical 285 (2008) 48

FTIR study of the selective catalytic reduction of NO₂ with ammonia on nanocrystalline NaY and CuY

Nanocrystalline NaY and CuY zeolites were determined to be better catalysts in the selective catalytic reduction (SCR) of NO₂ to N₂ and O₂ with ammonia at 298 K compared to commercial NaY zeolite composed of larger crystallites. This is the first study of a transition metal cation-exchanged nanocrystalline zeolite and its potential use as a catalyst for SCR-NO_x.

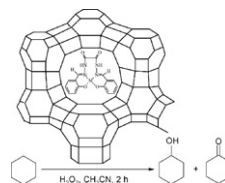


Masoud Salavati-Niasari, Azam Sobhani

Journal of Molecular Catalysis A: Chemical 285 (2008) 58

Ship-in-a-bottle synthesis, characterization and catalytic oxidation of cyclohexane by Host (nanopores of zeolite-Y)/guest (Mn(II), Co(II), Ni(II) and Cu(II) complexes of bis(salicylaldehyde)oxaloyldihydrazone) nanocomposite materials

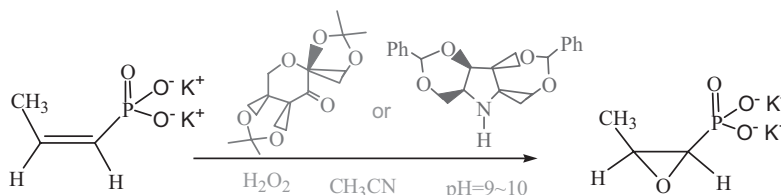
The monomer transition metal complexes; [ML] (M = Mn(II), Co(II), Ni(II) and Cu(II)) have been synthesized from the reaction of metal acetate with bis(salicylaldehyde)oxaloyldihydrazone, H₂L; in 1:1 molar ratio in ethanol under reflux. In all of the complexes, the principal dihydrazone ligand has been suggested to coordinate to the metal centres in the anti-*cis*-configuration. These metal complexes with tetradentate Schiff-base ligand was entrapped in the nanocavity of zeolite-Y; [ML]-NaY. The new Host-Guest Nanocomposite Materials (HGNM) was characterized by several techniques: chemical analysis, spectroscopic methods (DRS, NMR, BET, FTIR and UV/vis), conductometric and magnetic measurements. The catalytic activities for oxidation of cyclohexane with HGNM and neat were reported.

**Zhiguo Zhang, Jie Tang, Xinyan Wang, Hongchang Shi**

Journal of Molecular Catalysis A: Chemical 285 (2008) 68

Chiral ketone- or chiral amine-catalyzed asymmetric epoxidation of *cis*-1-propenylphosphonic acid using hydrogen peroxide as oxidant

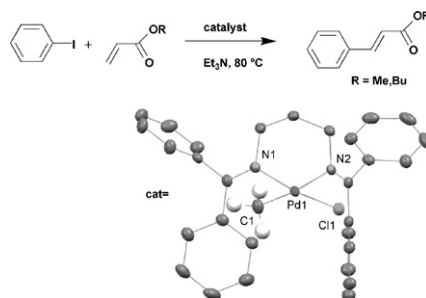
By using a D-fructose-derived chiral ketone or a D-mannitol-derived chiral amine as catalyst and 30% aqueous hydrogen peroxide as oxidant, the organocatalytic asymmetric epoxidation of *cis*-1-propenylphosphonic acid afforded (1*R*, 2*S*)-(-)-(1,2)-epoxypropyl phosphonic acid. At 0 °C for 72 h, the enantiomeric excess (e.e.) reached 74% at 100% conversion.

**Simphiwe M. Nelana, Jezreel Cloete, George C. Lisensky, Ebbe Nordlander, Iia A. Guzei, Selwyn F. Mapolie, James Darkwa**

Journal of Molecular Catalysis A: Chemical 285 (2008) 72

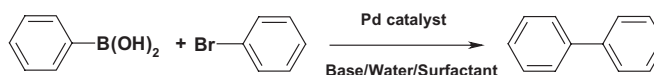
Unconjugated diimine palladium complexes as Heck coupling catalysts

Four new palladium diimine complexes have been used as catalysts for the Heck coupling reaction of iodobenzene and methyl or butyl acrylate. All four complexes show good activity at 80 °C and reactions have essentially complete conversions at 120 °C.

**Manuel Mora, César Jiménez-Sanchidrián, José Rafael Ruiz**

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Suzuki cross-coupling reactions over Pd(II)-hydro-talcite catalysts in water

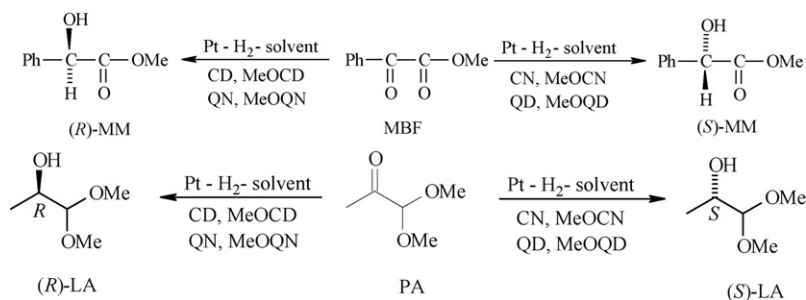


**Katalin Balázsik, Imre Bucsi,
Szabolcs Cserényi, György Szöllősi,
Mihály Bartók**

Journal of Molecular Catalysis A: Chemical 285
(2008) 84

Methylethers of cinchona alkaloids in Pt-catalyzed hydrogenation of methyl benzoylformate and pyruvaldehyde dimethyl acetal. Part 2: Effect of stereochemical factors on the enantioselectivity

According to the new experimental data, it may be supposed that an adsorbed two-point bonded interaction between reactant and chiral modifier is responsible for high ee's.

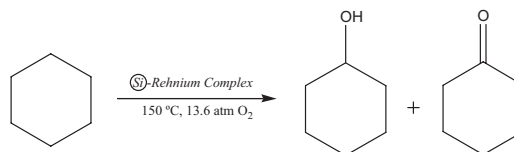


**Gopal S. Mishra, Elisabete C.B. Alegria,
Luís M.D.R.S. Martins,
João J.R. Fraústo da Silva,
Armando J.L. Pombeiro**

Journal of Molecular Catalysis A: Chemical 285
(2008) 92

Cyclohexane oxidation with dioxygen catalyzed by supported pyrazole rhenium complexes

Pyrazole rhenium complexes immobilized on 3-aminopropyl functionalized silica catalyze the cyclohexane oxidation with dioxygen to cyclohexanol and cyclohexanone (the main product with a good selectivity), in the absence of solvent and additives and under relatively mild conditions. The reaction is promoted by pyrazinecarboxylic acid.

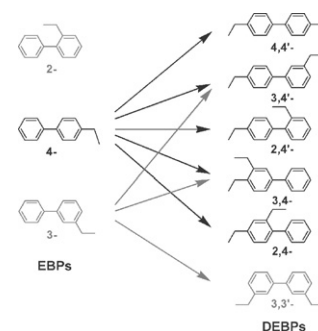


**Yoshihiro Sugi, Seiji Watanabe,
Yasunori Imada, Suresh B. Waghmode,
Kenichi Komura, Yoshihiro Kubota,
Taka-aki Hanaoka, Takehiko Matsuzaki,
Katsutoshi Nakajima, Kimio Kunimori**

Journal of Molecular Catalysis A: Chemical 285
(2008) 101

The ethylation of biphenyl over H-mordenite:
Reactivities of the intermediates in the catalysis

Ethylation of biphenyl (BP) was examined over H-mordenite (MOR). The formation of ethylbiphenyls (EBPs) and diethylbiphenyls (DEBPs) was non-shape-selective, although the selectivity for DEBPs with 4-ethyl groups was higher than 80%. 4-EBP, 4,4'-DEBP formed inside the MOR channels are ethylated preferentially to higher ethylates.

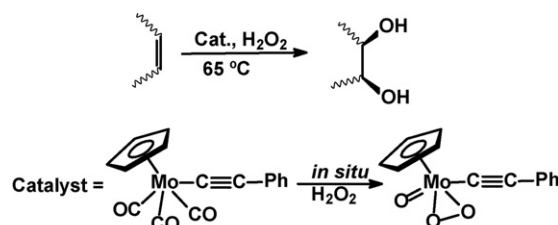


**Ankush V. Biradar, Bhaskar R. Sathe,
Shubhangi B. Umbarkar, Mohan K. Dongare**

Journal of Molecular Catalysis A: Chemical 285
(2008) 111

Selective *cis*-dihydroxylation of olefins using recyclable homogeneous molybdenum acetylide catalyst

Selective *cis*-dihydroxylation of various olefins using molybdenum acetylide complex CpMo(CO)₃(C≡CPh) as efficient and recyclable catalyst with H₂O₂ as oxidant has been reported. The extensive characterization of catalyst and intermediate species suggest molybdenum oxo-peroxo complex to be catalytically active species and formation of dimeric molybdenum complex with mixed valence Mo(V) and Mo(VI) as reaction intermediate. Based on the characterization results possible mechanism is proposed.

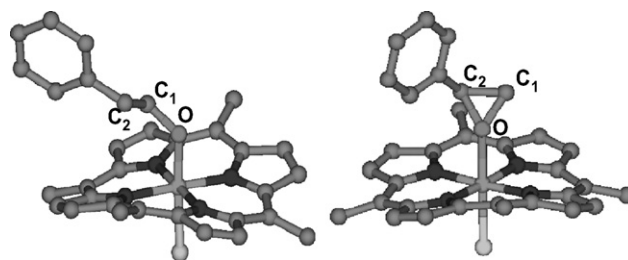


**María C. Curet-Arana, Gloria A. Emberger,
Linda J. Broadbelt, Randall Q. Snurr**

Journal of Molecular Catalysis A: Chemical 285
(2008) 120

Quantum chemical determination of stable intermediates for alkene epoxidation with Mn-porphyrin catalysts

Density functional theory (DFT) and hybrid quantum mechanics/molecular mechanics (QM/MM) calculations were used to study stable intermediates for alkene epoxidation using Mn-porphyrin catalysts. For the reaction intermediate involving complexation of the alkene with the oxidized Mn-porphyrin, our calculations show that the product complex has the lowest energy, followed by the radical intermediate.

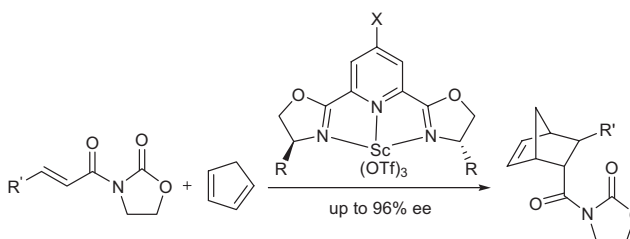


**Hong Wang, Hongming Wang, Peng Liu,
Hengquan Yang, Jianliang Xiao, Can Li**

Journal of Molecular Catalysis A: Chemical 285
(2008) 128

Electronic and steric effects of bis(oxazolanyl) pyridine ligands on asymmetric Diels–Alder reactions

High enantioselectivity was obtained in the asymmetric Diels–Alder reaction when the Pybox ligand contains an electron-withdrawing substituent X at the 4 position and a sterically bulky moiety R at the 4' position near the Lewis acid center.

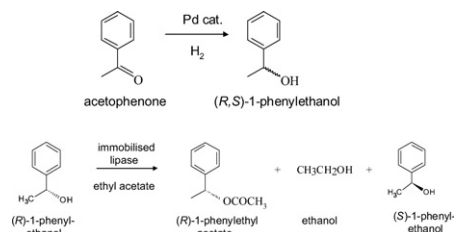


**Päivi Mäki-Arvela, Serap Sahin,
Narendra Kumar, Teemu Heikkilä,
Vesa-Pekka Lehto, Tapio Salmi,
Dmitry Yu. Murzin**

Journal of Molecular Catalysis A: Chemical 285
(2008) 132

Cascade approach for synthesis of *R*-1-phenyl ethyl acetate from acetophenone: Effect of support

One-pot synthesis of *R*-1-phenylethylacetate starting from acetophenone hydrogenation was studied over supported palladium catalysts in combination with an immobilized lipase. The effect of support acidity was systematically investigated by using mesoporous Pd–H–MCM-41, Pd–Si–MCM-41 as well as Pd–SiO₂ and Pd–Al₂O₃ catalysts. A reaction network is proposed.

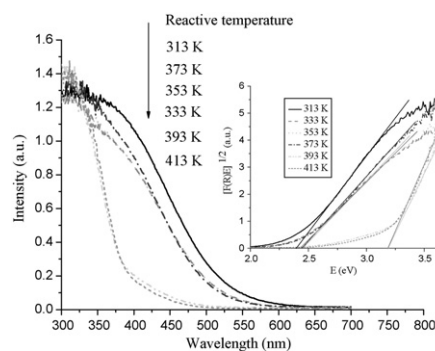


Yi Xie, Xiujian Zhao

Journal of Molecular Catalysis A: Chemical 285
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The effects of synthesis temperature on the structure and visible-light-induced catalytic activity of F–N-codoped and S–N-codoped titania

UV–vis diffuse reflectance spectra of F–N-codoped titania. F–N-codoping extended the absorbance spectra of the as-synthesized photocatalyst into visible region up to 620 nm.

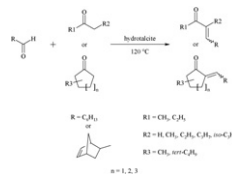


Jaroslav Červený, Jana Šplíchalová, Petr Kačer,
František Kovanda, Marek Kuzma, Libor
Červený

Journal of Molecular Catalysis A: Chemical 285
(2008) 150

Molecular shape selectivity of hydrotalcite in mixed
aldol condensations of aldehydes and ketones

The work has engaged in the effect of activated hydrotalcite for aldol condensation of cyclic and linear ketones with *n*-heptanal and norborn-5-ene-2-carbaldehyde. It was found a significant configuration selectivity of the catalyst, the condensation of the cyclic ketones was strongly preferred compare to the linear one. The mechanism of the surface reaction was predicted by the methods of molecular modeling.

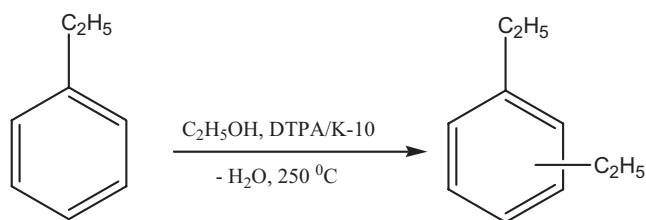


Vijay V. Bokade, Ganapati D. Yadav

Journal of Molecular Catalysis A: Chemical 285
(2008) 155

Heteropolyacid supported on acidic clay: A novel
efficient catalyst for alkylation of ethylbenzene with
dilute ethanol to diethylbenzene in presence of C₈
aromatics

Vapor phase alkylation of ethylbenzene with 80% aqueous ethanol, at mole ratio of 3:1, gives per pass conversion of 21.1% of ethylbenzene with 90.5% selectivity to diethylbenzene, over 15% (w/w) of dodecatungstophosphoric acid–K-10 clay at 250 °C. The catalyst is tolerant to xylenes and water.

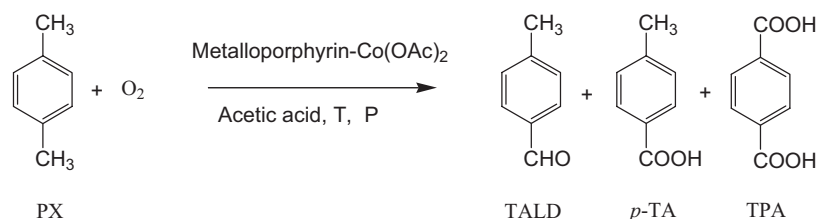


Quan Jiang, Yang Xiao, Ze Tan, Qing-Hong Li,
Can-Cheng Guo

Journal of Molecular Catalysis A: Chemical 285
(2008) 162

Aerobic oxidation of *p*-xylene over metalloporphyrin
and cobalt acetate: Their synergy and mech-
anism

The aerobic liquid-phase oxidation of *p*-xylene (PX) over metalloporphyrin–Co(OAc)₂ was studied, and the co-catalysis between metalloporphyrin and Co(OAc)₂ for the oxidation of PX was discovered. A possible mechanism for the observed synergy between metalloporphyrin and Co(OAc)₂ as co-catalysts for the aerobic liquid-phase oxidation of PX was proposed based on some experimental observations.



Takehiko Ono, Minoru Nakamura, Kenji Unno,
Adiya Oyun, Jyunpei Ohnishi,
Masakazu Kataoka, Katsuhiko Fujio

Journal of Molecular Catalysis A: Chemical 285
(2008) 169

Partial oxidation of CH₄ over Al/silica catalysts using molecular oxygen

