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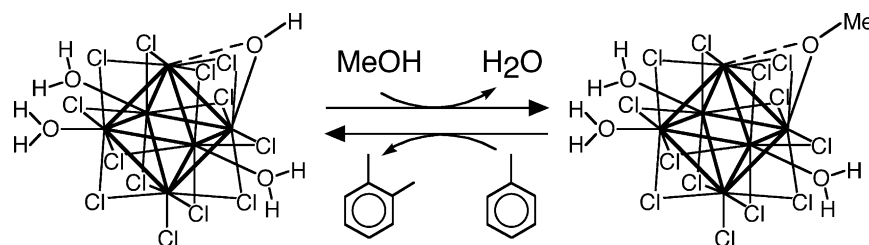
Articles

Satoshi Kamiguchi, Satoru Nishida, Hideki Kurokawa, Hiroshi Miura, Teiji Chihara

Journal of Molecular Catalysis A: Chemical 226 (2005) 1

Formation of Brønsted acid site on halide clusters of group 5 and 6 transition metals. Catalytic methylation and demethylation of methylbenzenes with methanol

Molecular halide clusters of Nb, Mo, Ta, and W supported on SiO₂ developed catalytic activity for methylation of toluene with methanol when treated above 300 °C. Methylation of xylenes also proceeded. However, the main reaction of trimethyl- and tetramethylbenzenes was isomerization. Demethylation of pentamethyl- and hexamethylbenzenes proceeded. IR analyses of adsorbed pyridine showed the formation of a Brønsted acid site.

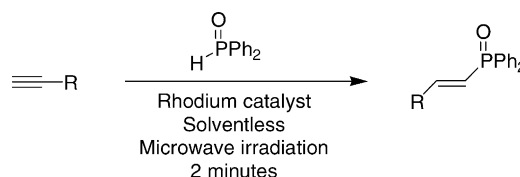


Joshua J. Stone, Robert A. Stockland Jr., Jose M. Reyes Jr., James Kovach, Caton C. Goodman, Eric S. Tillman

Journal of Molecular Catalysis A: Chemical 226 (2005) 11

Microwave-assisted solventless single and double addition of HP(O)Ph₂ to alkynes

The microwave-assisted solventless addition of HP(O)Ph₂ to alkynes has been accomplished. Single addition reactions were complete within 2 min using homogeneous catalysts, while double addition reactions required 40–60 min.

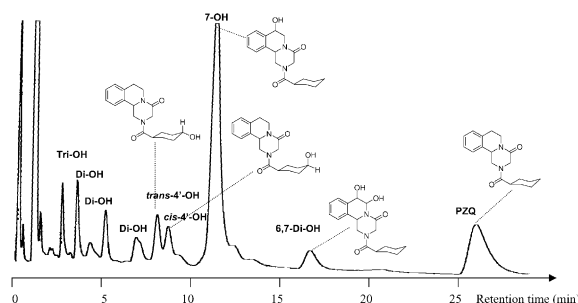


Andrea J.B. Melo, Yassuko Iamamoto, Ana Paula J. Maestrin, John R. Lindsay Smith, Michel D. Santos, Norberto P. Lopes, Pierina S. Bonato

Journal of Molecular Catalysis A: Chemical 226 (2005) 23

Biomimetic oxidation of praziquantel catalysed by metalloporphyrins

Oxidation of praziquantel by iodobenzene using iron(III) tetraarylporphyrins and manganese(III) tetraphenylporphyrin as catalysts was studied. The majority of the oxidation products have been identified by sequential LC–MS/MS and NMR analyses. The selectivities of the oxidations by these cytochrome P-450 models are studied and compared. The initial oxidation occurs predominantly at the 7-position.



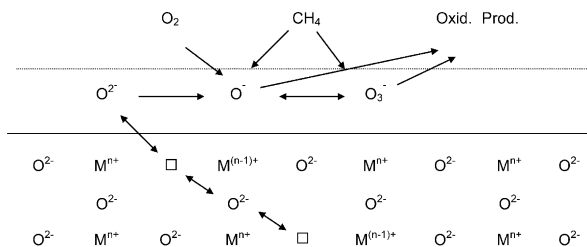
Cesare Oliva, Lucia Bonoldi, Serena Cappelli, Laura Fabbrini, Ilenia Rossetti, Lucio Forni

Journal of Molecular Catalysis A: Chemical 226 (2005) 33

Effect of preparation parameters on SrTiO_{3±δ} catalyst for the flameless combustion of methane

Three SrTiO_{3±δ} catalysts are compared, prepared by either the traditional sol-gel procedure (sample T3) or the recently proposed flame hydrolysis technique (FH) with citric acid (sample T2) or tartaric acid (sample T1) added to the precursor solution. In addition to the common presence of Ti³⁺, in the FH samples reactive O₃⁻ species form, to which the even more reactive O⁻ ions add, especially in T1, which proved to be the best catalyst.

The overall mechanism could then be described as:

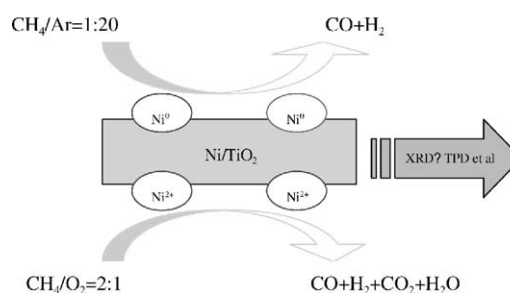


Tinghua Wu, Qiangu Yan, Huilin Wan

Journal of Molecular Catalysis A: Chemical 226 (2005) 41

Partial oxidation of methane to hydrogen and carbon monoxide over a Ni/TiO₂ catalyst

The methane oxidation mechanism changes as the nickel oxidation state changes over Ni/TiO₂. Methane is oxidized by lattice oxygen in NiO by active oxygen in the TiO₂ support via the non-selective mechanism over oxidized Ni/TiO₂, while it is converted into CO and H₂ via a direct oxidation mechanism over reduced Ni/TiO₂.

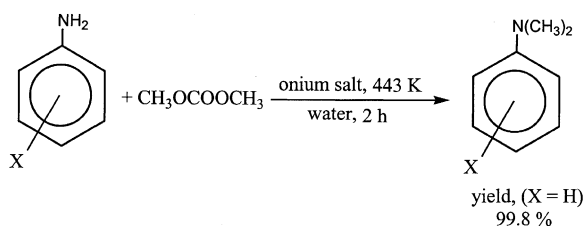


Anand B. Shivarkar, Sunil P. Gupte, Raghunath V. Chaudhari

Journal of Molecular Catalysis A: Chemical 226 (2005) 49

Selective synthesis of *N,N*-dimethyl aniline derivatives using dimethyl carbonate as a methylating agent and onium salt as a catalyst

Onium salts in the presence of a small amount of water are excellent catalysts for selective *N,N*-dialkylation. Side products such as carbamates formed during this reaction are hydrolyzed to *N*-alkylated anilines thereby increasing the selectivity for alkylated products. Reaction network has been proposed which explains the chemistry of *N*-alkylation by DMC. The reusability of catalyst has been demonstrated.

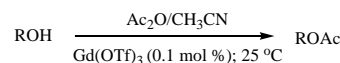


Ramesh Alleli, Meher Perambuduru, Sampak Samantha, V. Prakash Reddy

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Gadolinium triflate: an efficient and convenient catalyst for acetylation of alcohols and amines

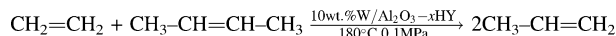
Gadolinium triflate (Gd(OTf)₃) is a simple and efficient catalyst for the acetylation of alcohols and amines using acetic anhydride as the reagent. Aliphatic alcohols as well as phenols and amines undergo acetylations under mild conditions using catalytic amounts of Gd(OTf)₃.



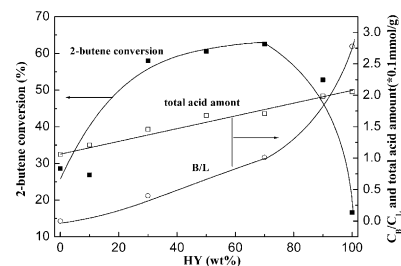
Shengjun Huang, Shenglin Liu, Wenjie Xin, Jie Bai, Sujuan Xie, Qingxia Wang, Longya Xu

Journal of Molecular Catalysis A: Chemical 226 (2005) 61

Metathesis of ethene and 2-butene to propene on W/Al_2O_3 -HY catalysts with different HY contents



Metathesis between ethene and 2-butene to propene is catalyzed by 10wt.% W/Al_2O_3 -xHY with various HY content at temperature 180 °C and pressure 0.1 MPa. Reaction and characterization results reveal that Brønsted acidity of catalysts and the interaction between W species and support simultaneously play their important roles in the reaction.

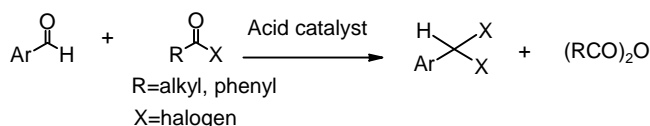


A. Wolfson, O. Shokin, D. Tavor

Journal of Molecular Catalysis A: Chemical 226 (2005) 69

Acid catalyzes the synthesis of aromatic *gem*-dihalides from their corresponding aromatic aldehydes

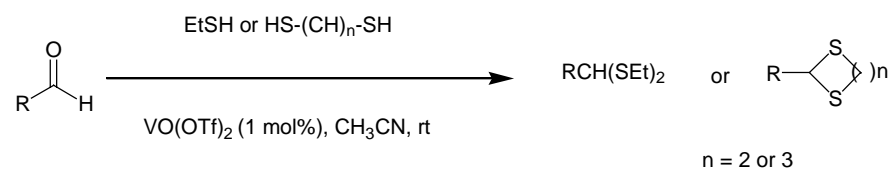
A variety of aromatic *gem*-dihalides were synthesized for the first time from the reaction of their corresponding aldehydes with acid halides in the presence of acid catalysts. Both homogeneous and heterogeneous Lewis and Bronsted acids were successfully employed.



Surya Kanta De

Journal of Molecular Catalysis A: Chemical 226 (2005) 77

Vanadyl triflate as an efficient and recyclable catalyst for chemoselective thioacetalization of aldehydes

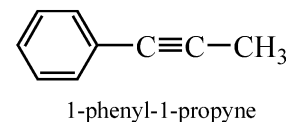


N. Marín-Astorga, G. Alvez-Manoli, P. Reyes

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Stereoselective hydrogenation of phenyl alkyl acetylenes on pillared clays supported palladium catalysts

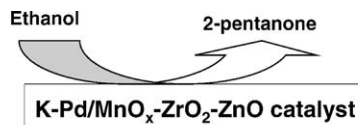
The stereoselective hydrogenation of phenyl alkyl acetylenes at 298 K and atmospheric pressure of hydrogen over Pd-supported catalysts has been studied. The catalysts were prepared by impregnation of Al-PILC and Ca-Mont with $Pd(acac)_2$ precursor, with a metal content close to 1 wt.%. All the solids were characterised by nitrogen adsorption-desorption isotherms at 77 K, TPR, H_2 and CO chemisorption, XRD and TEM measurements. The reactions were found to be zero order concerning the alkyne concentration. All catalysts displayed high selectivity to *cis*-alkene isomer being the 1%Pd/Al-PILC the most active catalyst.



Daiping He, Yunjie Ding, Weimiao Chen, Yuan Lu, Hongyuan Luo

Journal of Molecular Catalysis A: Chemical 226 (2005) 89

One-step synthesis of 2-pentanone from ethanol over K-Pd/MnO_x-ZrO₂-ZnO catalyst

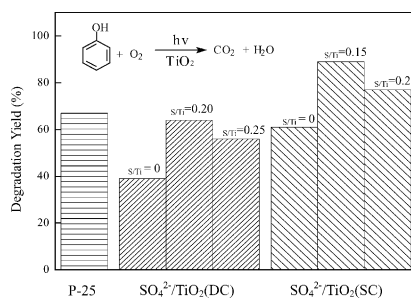


One-step synthesis of 2-pentanone (41.3% selectivity based carbon molar) from ethanol with ca. 100% conversion.

Hexing Li, Guisheng Li, Jian Zhu, Ying Wan

Journal of Molecular Catalysis A: Chemical 226 (2005) 93

Preparation of an active SO₄²⁻/TiO₂ photocatalyst for phenol degradation under supercritical conditions

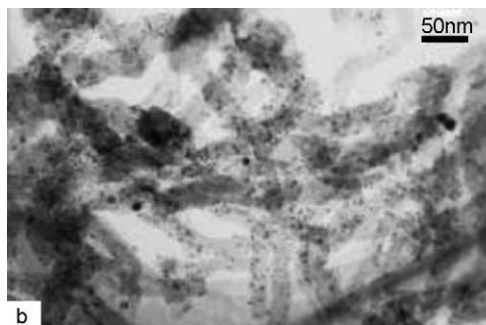


Chun-Hua Li, Zhen-Xing Yu, Ke-Fu Yao, Sheng-fu Ji, Ji Liang

Journal of Molecular Catalysis A: Chemical 226 (2005) 101

Nitrobenzene hydrogenation with carbon nanotube-supported platinum catalyst under mild conditions

Carbon nanotube-supported Pt catalysts show high activity for nitrobenzene directly hydrogenating to aniline under mild conditions. The highly dispersed Pt and mesoporosity structure of acid-oxidized CNT-supported Pt catalyst are responsible for the extraordinary activity.

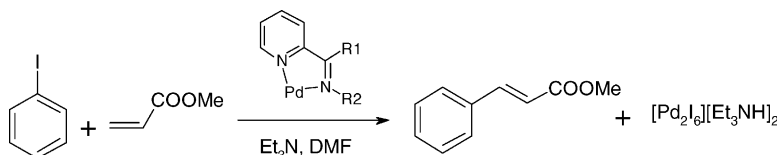


Paolo Pelagatti, Mauro Carcelli, Mirco Costa, Sandra Ianelli, Corrado Pelizzi, Dominga Rogolino

Journal of Molecular Catalysis A: Chemical 226 (2005) 107

Heck reaction catalysed by pyridyl-imine palladium(0) and palladium(II) complexes

Pyridyl-imine Pd(0) and Pd(II) complexes catalyse the Heck coupling between PhI and methyl acrylate in DMF leading to *trans*-methyl cinnamate (TOF up to 1253 h⁻¹); palladium is recovered as [Pd₂I₆][Et₃NH]₂.

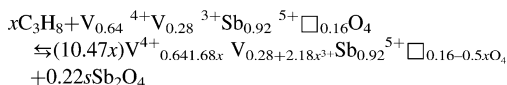


J.M.M. Millet, I.C. Marcu, J.M. Herrmann

Journal of Molecular Catalysis A: Chemical 226 (2005) 111

Study by electrical conductivity measurement of redox properties of vanadium antimonate and mixed vanadium and iron antimonate

Pure vanadium antimonate which was a n-type semiconductor, became p-type after reduction under propane. The change in type of electrical conductivity has been explained by a surface transformation with the formation of antimony oxide and a rutile-type solid solution with only cationic vacancies.



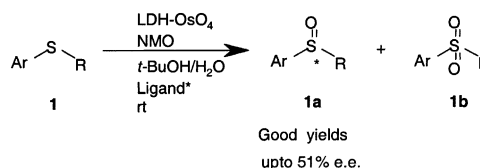
The effect of vanadium substitution by iron on the electrical properties of the phase has been studied to understand the redox behavior of propane ammoxidation catalysts.

M. Lakshmi Kantam, B. Veda Prakash, B. Bharathi, Ch. Venkat Reddy

Journal of Molecular Catalysis A: Chemical 226 (2005) 119

Asymmetric oxidation of sulfides by LDH supported OsO₄ catalyst

Asymmetric oxidation of sulfides by LDH supported OsO₄ catalyst LDH OsO₄-catalyzed asymmetric oxidation of sulfides with *N*-methyl morpholine *N*-oxide in the presence of cinchona alkaloids under heterogeneous conditions to sulfoxides in good yields with moderate enantioselectivities is reported.

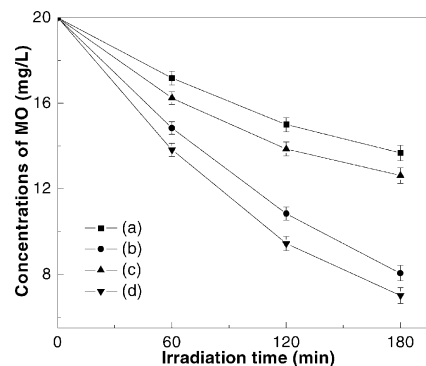


Ji-Chuan Xu, Mei Lu, Xin-Yong Guo, Hu-Lin Li

Journal of Molecular Catalysis A: Chemical 226 (2005) 123

Zinc ions surface-doped titanium dioxide nanotubes and its photocatalysis activity for degradation of methyl orange in water

Zn ions surface-doped TiO₂ nanotubes were synthesized via an assembly process based on ligand exchange reaction and with additional thermal treatment. The as-prepared Zn ions surface-doped TiO₂ nanotubes showed a further improvement on the photocatalysis activity for degradation of methyl orange in water.

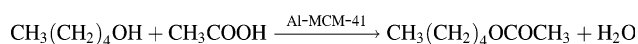


A. Palani, A. Pandurangan

Journal of Molecular Catalysis A: Chemical 226 (2005) 129

Esterification of acetic acid over mesoporous Al-MCM-41 molecular sieves

Esterification of acetic acid with amyl alcohol was carried out in the vapour phase using Al-MCM-41 (Si/Al = 25, 50, 75 and 100) between 150 and 250 °C. At each temperature the activity of the catalysts followed the order Al-MCM-41 (100) > Al-MCM-41 (75) > Al-MCM-41 (50) > Al-MCM-41 (25). The order suggests that the hydrophobic property of the catalysts over their reactivity in part to their density of acid sites. The study of the time on stream at 250 °C showed about 25% decrease in conversion at the end of 5 h. Above 250 °C the conversion was insignificant.

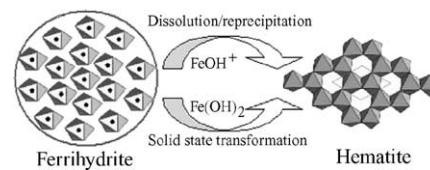


Hui Liu, Yu Wei, Yuhan Sun

Journal of Molecular Catalysis A: Chemical 226 (2005) 135

The formation of hematite from ferrihydrite using Fe(II) as a catalyst

Hematite forms rapidly from ferrihydrite in the presence of trace amounts of Fe(II) by two mechanisms.



Maurizio Solinas, Serafino Gladiali, Mauro Marchetti

Journal of Molecular Catalysis A: Chemical 226 (2005) 141

Hydroformylation of aryloxy ethylenes by Rh/BINAPHOS complex. Catalyst deactivation path and application to the asymmetric synthesis of 2-aryloxypropanoic acids

The enantioselective synthesis of 2-aryloxypropanoic acids precursors, an important class of chiral agrochemicals, via hydroformylation of the relative aryl vinyl ethers catalyzed by Rh(I)-(*S,R*)/BINAPHOS complex proceeds with enantiomeric excesses up to 80%.

