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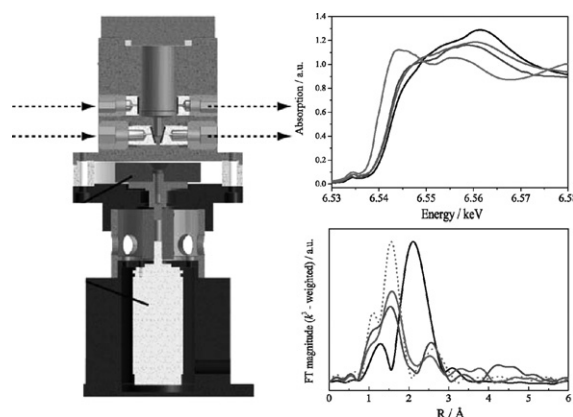
Articles

Fabian Jutz, Jan-Dierk Grunwaldt, Alfons Baiker

Journal of Molecular Catalysis A: Chemical 297 (2009) 63

In situ XAS study of the Mn(III)(salen)Br catalyzed synthesis of cyclic organic carbonates from epoxides and CO₂

In situ X-ray absorption spectroscopy at the Mn K- and Br K-edge was employed to study the cycloaddition of carbon dioxide to propylene oxide and styrene oxide, catalyzed by Mn(III) salen bromide complexes. The use of specially designed spectroscopic batch cells allowed monitoring the behavior of three different homogeneous catalysts as well as of an immobilized derivative. The data obtained shed light on the key elements of the catalysts on a molecular level and allowed proposing a consistent reaction mechanism.

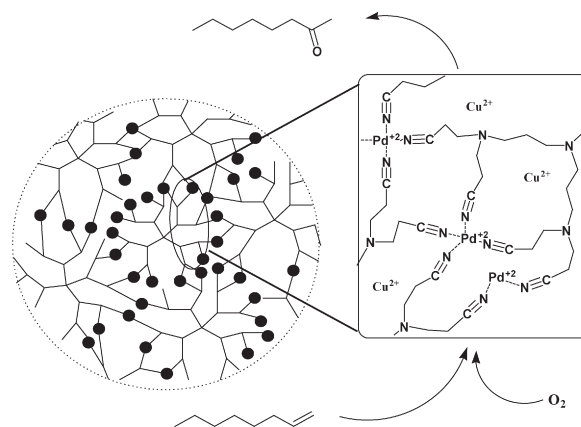


Edward A. Karakhanov, Anton L. Maximov, Boris N. Tarasevich, Vitaliy A. Skorkin

Journal of Molecular Catalysis A: Chemical 297 (2009) 73

Dendrimer-based catalysts in Wacker-oxidation: Unexpected selectivity to terminal double bonds

Wacker-oxidation of alkenes was catalyzed by palladium–copper complexes of PPI based on dendrimers. High selectivity to terminal double bond was demonstrated.

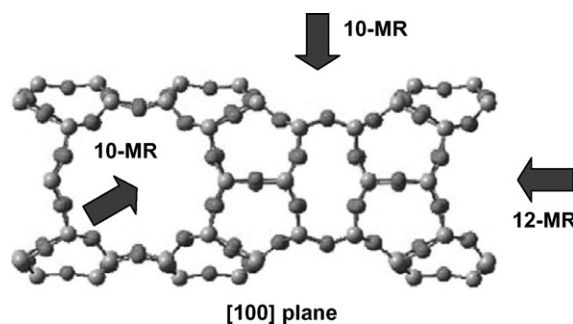


Tomoko Shibata, Hiroaki Kawagoe, Hiroaki Naiki, Kenichi Komura, Yoshihiro Kubota, Yoshihiro Sugi

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The alkylation of naphthalene over MCM-68 with MSE topology

The alkylation of naphthalene was examined over MCM-68 zeolite with MSE topology. The selectivities for the least bulky 2,6-dialkyl naphthalene were increased with the bulkiness of alkylating agents, propene, 1-butene, and 2-methylpropene. The differences are due to the steric restriction of the isomers at their transition states in MCM-68 channels, resulting in the selective formation of 2,6-dialkyl naphthalene with bulky alkyl moieties.

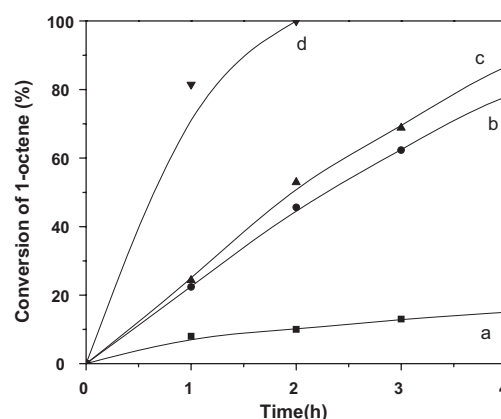


Yu Liu, Lin Xu, Bingbing Xu, Zhikui Li, Liping Jia, Weihua Guo

Journal of Molecular Catalysis A: Chemical 297 (2009) 86

Toluene alkylation with 1-octene over supported heteropoly acids on MCM-41 catalysts

The liquid phase alkylation of toluene with 1-octene catalyzed by bulk and MCM-41 supported Keggin-type heteropoly acids (HPA), has been studied. The supported catalysts exhibit excellent activity and reusability. The conversion of 1-octene was 100% and selectivity for monoalkylation products was 99.9% after 2 h of reaction at 120 °C.
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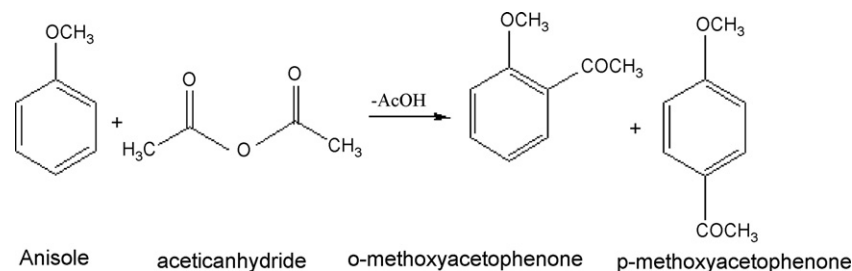


K.M. Parida, Sujata Mallick, G.C. Pradhan

Journal of Molecular Catalysis A: Chemical 297 (2009) 93

Acylation of anisole over 12-heteropolyacid of tungsten and molybdenum promoted zirconia

It has been found that 12-heteropoly acid of W and Mo (PWM) supported on zirconia (ZPWM) is an efficient catalyst for the acylation of anisole with acetic anhydride to give ortho-methoxyacetophenone and para-methoxyacetophenone. The interaction of anhydride molecule with Brønsted acid sites of PWM generates acylium ion, which subsequently attacks the π-electrons of anisole to form methoxyacetophenone.

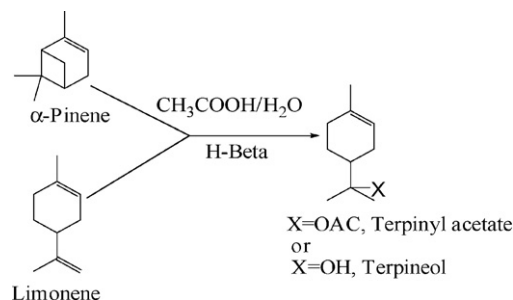


Mukesh Kr. Yadav, Mallikarjun V. Patil, Raksh V. Jasra

Journal of Molecular Catalysis A: Chemical 297 (2009) 101

Acetoxylation and hydration of limonene and α-pinene using cation-exchanged zeolite beta

Hydration and acetoxylation of limonene and α-pinene into terpineol and terpinyl acetate in the liquid phase have been studied using transition metal and rare earth ion-exchanged beta zeolite. Conversions of 9–26% and 58–82% were obtained for limonene in presence of glacial and aqueous acetic acid, respectively, and the selectivity for major products α-terpinyl acetate and terpineol were up to 54% and 65%, respectively. Conversion values in the range of 62–100% and 72–100% were obtained for α-pinene in the presence of glacial and aqueous acetic acid, respectively.

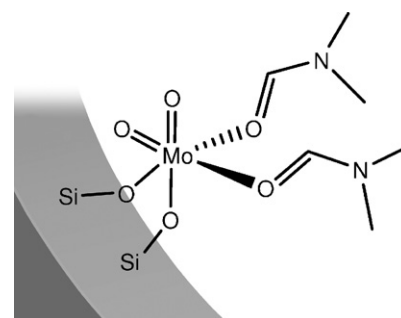


Bernardo Monteiro, Salete S. Balula, Sandra Gago, Carla Grosso, Sónia Figueiredo, André D. Lopes, Anabela A. Valente, Martyn Pillinger, João P. Lourenço, Isabel S. Gonçalves

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Comparison of liquid-phase olefin epoxidation catalysed by dichlorobis-(dimethylformamide) dioxomolybdenum (VI) in homogeneous phase and grafted onto MCM-41

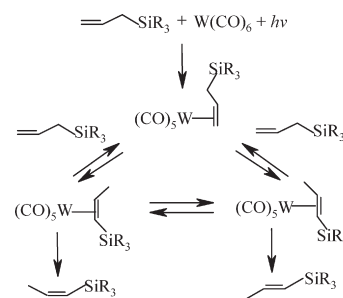
Isolated Mo^{VI} active sites have been grafted onto the inner surfaces of MCM-41 mesoporous silica via a MoO₂Cl₂(dmf)₂ precursor, to generate a stable and recyclable catalyst for the liquid-phase epoxidation of unfunctionalised olefins using *tert*-butylhydroperoxide as oxidant. The derivatised material was characterised by powder X-ray diffraction, N₂ adsorption, FTIR spectroscopy, ¹³C and ²⁹Si MAS NMR, and Mo K-edge EXAFS.



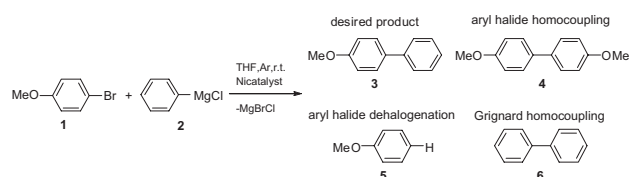
Bożena Adrjan, Teresa Szymańska-Buzar*Journal of Molecular Catalysis A: Chemical* 297 (2009) 118

Facile double-bond migration of allylsilanes in the coordination sphere of tungsten complexes

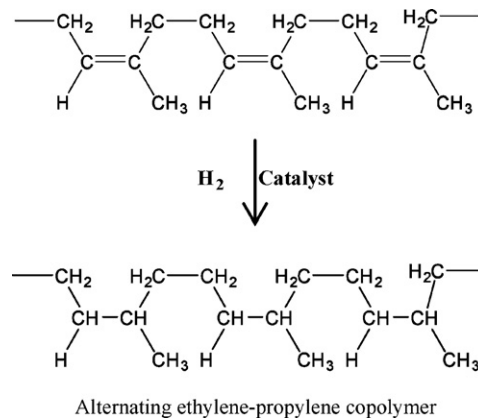
Tungsten(0)- η^2 -allylsilane complexes $[\text{W}(\text{CO})_5(\eta^2\text{-CH}_2=\text{CH}-\text{CH}_2\text{-SiR}_3)]$ and *trans*- $[\text{W}(\text{CO})_4(\eta^2\text{-CH}_2=\text{CH}-\text{CH}_2\text{-SiR}_3)_2]$ ($\text{R}_3 = \text{Me}_3, (\text{OMe})_3, \text{ClMe}_2, \text{Cl}_3$) have been generated during photolysis of $\text{W}(\text{CO})_6$ and allylsilane, and their molecular structure has been elucidated by IR and NMR spectroscopic methods. Facile double-bond migration of allylsilanes in the coordination sphere of $[\text{W}(\text{CO})_5(\eta^2\text{-allylsilane})]$ complexes has been revealed.

**John M. Richardson, Christopher W. Jones***Journal of Molecular Catalysis A: Chemical* 297 (2009) 125

Leached nickel promotes catalysis using supported Ni(II) complex precatalysts in Kumada-Corriu reactions

**Aungsutorn Mahittikul, Pattarapan Prasassarakich, Garry L. Rempel***Journal of Molecular Catalysis A: Chemical* 297 (2009) 135Hydrogenation of natural rubber latex in the presence of $[\text{Ir}(\text{cod})(\text{PCy}_3)(\text{py})]\text{PF}_6$

Natural rubber latex was hydrogenated using $[\text{Ir}(\text{cod})(\text{PCy}_3)(\text{py})]\text{PF}_6$ as catalyst. A detailed kinetic investigation was carried out by monitoring the amount of hydrogen consumption. The kinetic results obtained were used to formulate a reaction mechanism for the hydrogenation process. Acid addition helped to suppress the poisoning of the catalyst by impurities.

**Evgenii V. Kondratenko, Haihui Wang, Vita A. Kondratenko, Jürgen Caro***Journal of Molecular Catalysis A: Chemical* 297 (2009) 142Selective oxidation of CH_4 and C_2H_6 over a mixed oxygen ion and electron conducting perovskite—A TAP and membrane reactors study

By combining steady-state tests with transient mechanistic analysis, the selectivity-determining factors of an oxygen-conducting perovskite $\text{BaCo}_x\text{Fe}_y\text{Zr}_{1-x-y}\text{O}_{3-\delta}$ (BCFZ) membrane in the partial oxidation of methane and ethane to syngas and ethylene were determined. They are (i) the reduction degree of the perovskite surface; and (ii) the residence time at the catalyst surface.

