

## Contents

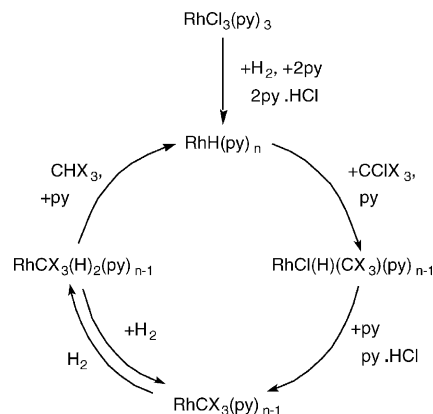
### Articles

**Attila Sisak, Ottó Balázs Simon, Károly Nyíri**

*Journal of Molecular Catalysis A: Chemical 213 (2004) 163*

Homogeneous catalytic hydrodechlorination of CFC and HCFC compounds

Rhodium and palladium complexes effectively hydrodechlorinate CFC and HCFC compounds in homogeneous phase. For example,  $\text{RhCl}_3(\text{py})_3$  in the presence of an excess of pyridine surpassed  $\text{Pd}/\text{Al}_2\text{O}_3$ , the most active heterogeneous catalyst tested in the transformation of  $\text{CF}_3\text{CHFCl}$  to  $\text{CF}_3\text{CH}_2\text{F}$ . The formation of  $\text{RhH}(\text{py})_n$  ( $n = 3, 4$ ) as active catalyst was proposed for this rhodium complex-catalyzed system.

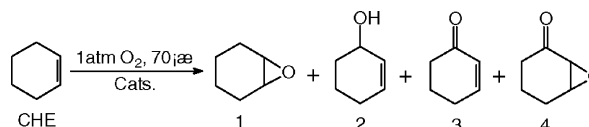


**Zhi-wang Yang, Qiao-xiang Kang, Heng-chang Ma, Cui-lin Li, Zi-qiang Lei**

*Journal of Molecular Catalysis A: Chemical 213 (2004) 169*

Oxidation of cyclohexene by dendritic PAMAMSA-Mn(II) complexes

Dendritic catalysts PAMAMSA-Mn(II) show promising activities for the oxidation of cyclohexene by molecular oxygen under mild conditions. The oxidation gives 7-oxabicyclo[4,1,0]heptane **1**, 2-cyclohexen-2-ol **2**, 2-cyclohexen-2-one **3** and 7-oxabicyclo[4,1,0]heptan-2-one **4** as the major products.

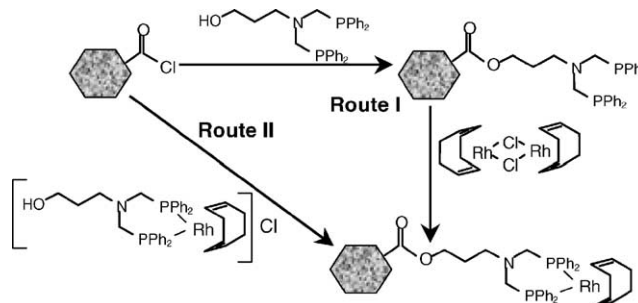


**M. Carmen Román-Martínez, José A. Díaz-Auñón, Concepción Salinas-Martínez de Lecea, Howard Alper**

*Journal of Molecular Catalysis A: Chemical 213 (2004) 177*

Rhodium-diphosphine complex bound to activated carbon. An effective catalyst for the hydroformylation of 1-octene

A rhodium (I) diphosphine complex was anchored on activated carbon through a covalent bond. After functionalization of the carbon surface (with acid chloride groups), two strategies were developed: **Route I**: ligand anchorage followed by complex formation, and **Route II**: synthesis of a rhodium diphosphine complex followed by anchorage. The catalysts are active, and recyclable, for 1-octene hydroformylation. Route II gives the best results.

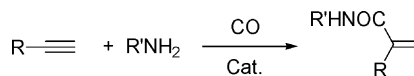


**U. Matteoli, A. Scrivanti, V. Beghetto**

*Journal of Molecular Catalysis A: Chemical* 213 (2004) 183

Aminocarbonylation of phenylacetylene catalysed by palladium acetate in combination with (2-pyridyl)diphenylphosphine and methanesulfonic acid

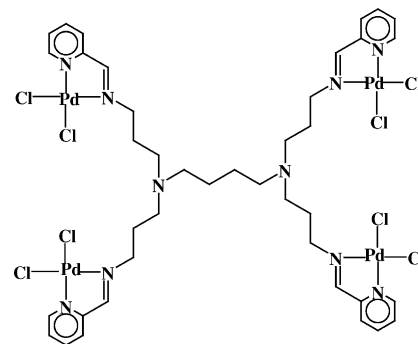
High reaction rates have been obtained in the carbonylation of phenylacetylene in the presence of aniline using the catalytic system formed by Pd(OAc)<sub>2</sub> in combination with 2-PyPPh<sub>2</sub> and CH<sub>3</sub>SO<sub>3</sub>H. An appropriate tuning of the reactions conditions leads to a complete chemo- and regioselectivity towards the branched amide.

**Gregory S. Smith, Selwyn F. Mapolie**

*Journal of Molecular Catalysis A: Chemical* 213 (2004) 187

Iminopyridyl-palladium dendritic catalyst precursors: evaluation in Heck reactions

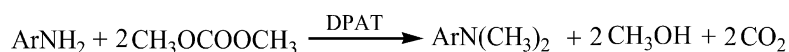
First and second generation poly(propyleneimine) dendrimers were prepared and complexed with PdCl<sub>2</sub>(COD) to produce palladium containing metal dendrimers. These were used as catalysts in Heck coupling of iodobenzene with activated olefins.

**Zhen Lu Shen, Xuan Zhen Jiang**

*Journal of Molecular Catalysis A: Chemical* 213 (2004) 193

Selective *N,N*-dimethylation of primary aromatic amines with dimethyl carbonate in the presence of diphenylammonium triflate

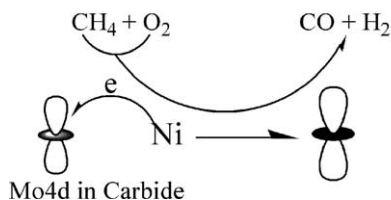
A facile synthesis of *N,N*-dimethylanilines from primary aromatic amines and dimethyl carbonate has been achieved for the first time in the presence of diphenylammonium triflate.

**Quanli Zhu, Bin Zhang, Jun Zhao, Shengfu Ji, Jian Yang, Jiixin Wang, Hanqing Wang**

*Journal of Molecular Catalysis A: Chemical* 213 (2004) 199

The effect of secondary metal on Mo<sub>2</sub>C/Al<sub>2</sub>O<sub>3</sub> catalyst for the partial oxidation of methane to syngas

Promoted carbide catalyst for the partial oxidation of methane to syngas

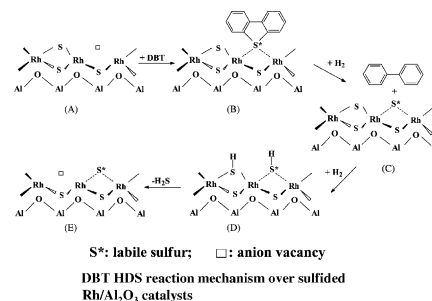


**Jeayoung Lee, Atsushi Ishihara, Franck Dumeignil, Eika W. Qian, Toshiaki Kabe**

*Journal of Molecular Catalysis A: Chemical* 213 (2004) 207

Novel hydrodesulfurization catalysts derived from a supported rhodium carbonyl complex. -Effect of the support on the catalytic activity and the sulfur behavior

Catalysts derived from rhodium carbonyl supported on alumina, silica, titania and silica-alumina were synthesized. Whilst the pre-reduced 4Rh/SiO<sub>2</sub> catalyst exhibited a number of labile sulfur (S<sub>OA</sub>) slightly lower than the pre-sulfided one, the labile sulfur atoms created on the former exhibited a significantly greater mobility (*k*<sub>RE</sub>), which explains the observed higher HDS activity of the pre-reduced catalysts.



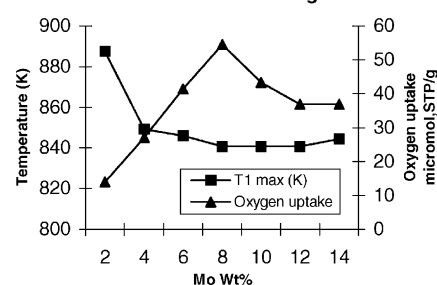
**Manoj Kumar, F. Aberuagba, J.K. Gupta, K.S. Rawat, L.D. Sharma, G. Murali Dhar**

*Journal of Molecular Catalysis A: Chemical* 213 (2004) 217

Temperature-programmed reduction and acidic properties of molybdenum supported on MgO–Al<sub>2</sub>O<sub>3</sub> and their correlation with catalytic activity

Monolayer completion of MoO<sub>3</sub> at 8% Mo loading on the surface of MgO–Al<sub>2</sub>O<sub>3</sub> (1:1) mixed oxide has been established by TPR technique and corroborated by LTOC results. Incorporation of basic MgO into the lattice of amphoteric Al<sub>2</sub>O<sub>3</sub> in MgO–Al<sub>2</sub>O<sub>3</sub> introduces moderate acidity neutralizing the strong acid sites of alumina. Impregnation of molybdenum on MgO, Al<sub>2</sub>O<sub>3</sub> and MgO–Al<sub>2</sub>O<sub>3</sub> enhances the acidity due to acidic nature of MoO<sub>3</sub>. Eight percent Mo/MgO has demonstrated higher HDS activity than Mo/Al<sub>2</sub>O<sub>3</sub> or Mo/MgO–Al<sub>2</sub>O<sub>3</sub>.

**Variation of T1 max and Oxygen uptake with Mo loading**

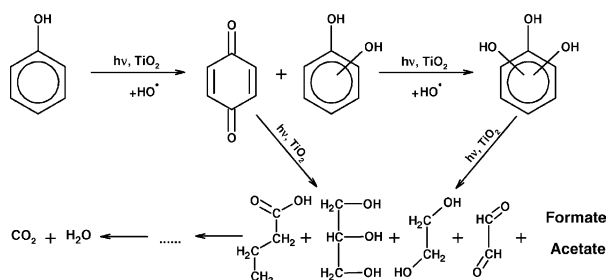


**Andrzej Sobczyński, Łukasz Duczmal, Wojciech Zmudzinski**

*Journal of Molecular Catalysis A: Chemical* 213 (2004) 225

Phenol destruction by photocatalysis on TiO<sub>2</sub>: an attempt to solve the reaction mechanism

Six hydroxylated aromatic compounds, *p*-benzoquinone and four aliphatic compounds were detected as intermediates of the reaction of phenol photocatalytic oxidation in the presence of illuminated TiO<sub>2</sub>. The next mechanism of phenol full mineralisation is proposed: The reactions on TiO<sub>2</sub>: photooxidation of phenol and its primary intermediates—dihydroxybenzenes show 1st order behaviour versus their initial concentrations.

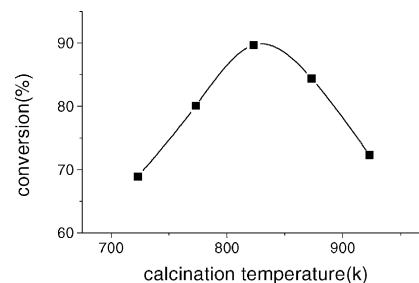


**Yue-Xiu Jiang, Xiao-Mei Chen, Yun-Fen Mo, Zhang-Fa Tong**

*Journal of Molecular Catalysis A: Chemical* 213 (2004) 231

Preparation and properties of Al-PILC supported SO<sub>4</sub><sup>2-</sup>/TiO<sub>2</sub> superacid catalyst

The SO<sub>4</sub><sup>2-</sup>/TiO<sub>2</sub>/Al-pillared clay superacid catalyst was prepared. The structure properties of the catalyst were studied by means of XRD and the adsorption of N<sub>2</sub>. Acidity properties of the catalyst were tested by Hammett indicator method and Py-IR spectra. The reaction of esterification of *n*-pentanol with benzoic acid on catalyst was investigated as well.

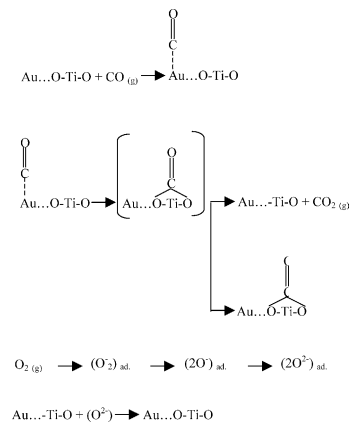


**P. Konova, A. Naydenov, Cv. Venkov,  
D. Mehandjiev, D. Andreeva, T. Tabakova**

*Journal of Molecular Catalysis A: Chemical* 213 (2004) 235

Activity and deactivation of Au/TiO<sub>2</sub> catalyst in CO oxidation

The results on catalytic activity, long-term stability and deactivation process of nanosize gold-supported Au/TiO<sub>2</sub> catalyst in CO oxidation were present. Two main reasons for the catalysts deactivation were found: (i) formation of monolayer of carbonates as a result of oxidation process and (ii) connected with the agglomeration of the gold nanosize particles.

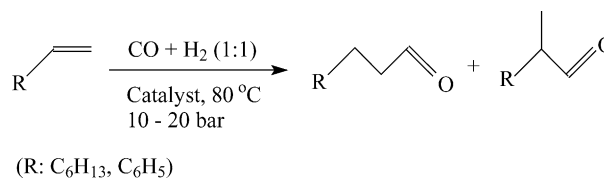


**L. Huang, Y. He, S. Kawi**

*Journal of Molecular Catalysis A: Chemical* 213 (2004) 241

Catalytic studies of aminated MCM-41-tethered rhodium complexes for hydroformylation of 1-octene and styrene

Hydroformylation of 1-octene and styrene is studied in the presence of Rh<sub>4</sub>(CO)<sub>12</sub>, RhCl(PPh<sub>3</sub>)<sub>3</sub> and MCM-41-tethered complexes derived from Rh<sub>4</sub>(CO)<sub>12</sub> and RhCl(PPh<sub>3</sub>)<sub>3</sub> via an amine ligand. RhCl(PPh<sub>3</sub>)<sub>3</sub>/MCM-41(NH<sub>2</sub>) displays marked superiority in activity and selectivity except for *n/i* aldehyde ratio. Adding excess PPh<sub>3</sub> to the catalyst systems enhances effectively all catalytic performances.

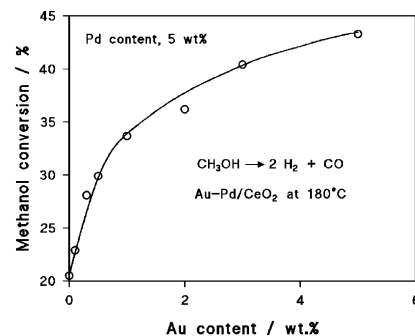


**Mahendra P. Kapoor, Yuichi Ichihashi,  
Toshie Nakamori, Yasuyuki Matsumura**

*Journal of Molecular Catalysis A: Chemical* 213 (2004) 251

Chemical promotional effect of gold added to palladium supported on cerium oxide in catalytic methanol decomposition

Additional of gold to palladium supported on cerium oxide increases the catalytic activity for methanol decomposition to carbon monoxide and hydrogen at 180 °C probably because of formation of bimetallic clusters of Pd-Au.



**Shainaz M. Landge, M. Chidambaram,  
A.P. Singh**

*Journal of Molecular Catalysis A: Chemical* 213 (2004) 257

Benzoylation of toluene with *p*-toluoyl chloride over triflic acid functionalized mesoporous Zr-TMS catalyst

Benzoylation of toluene with *para*-toluoylchloride has been studied with triflic acid functionalized mesoporous Zr-TMS catalysts. The conversion of *p*-T-Cl, rate of *p*-T-Cl conversion, selectivity to 4,4'-DMBP ratio over f-Zr-TMS-15, after 8 h of reaction time and at 403 K are ca. 50.7%, 14.5 (10<sup>-1</sup> h<sup>-1</sup> mol<sup>-1</sup> S), 73.5% and 3.2, respectively.

