



## Contents

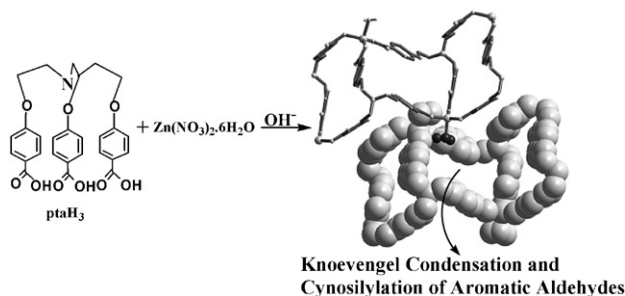
### Articles

**Subhadip Neogi, Manish K. Sharma,  
Parimal K. Bharadwaj**

*Journal of Molecular Catalysis A: Chemical 299 (2009) 1*

Knoevenagel condensation and cyanosilylation reactions catalyzed by a MOF containing coordinatively unsaturated Zn(II) centers

A MOF built with Zn(II) and a podand ligand contains a number of water molecules in the lattice including one metal bound. Upon heating, these water molecules can be removed to form a crystalline product that can be used as a heterogeneous catalyst for a number of Knoevenagel condensation and cyanosilylation reactions.

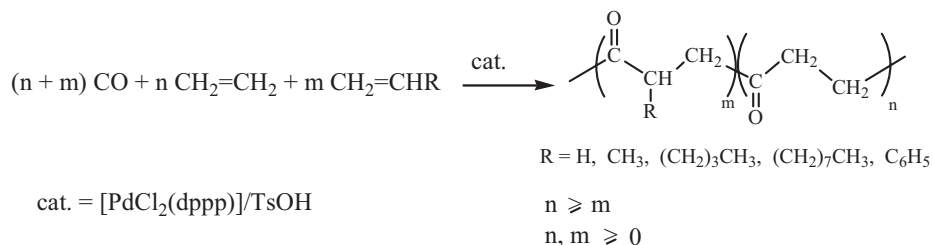


**Andrea Vavasori, Lucio Ronchin,  
Emanuele Amadio, Luigi Toniolo,  
Gianni Cavinato**

*Journal of Molecular Catalysis A: Chemical 299 (2009) 5*

Terpolymerisation of 1-olefin and ethene with CO catalysed by the [PdCl<sub>2</sub>(dppp)] complex in methanol as a solvent [dppp = 1,3-bis(diphenylphosphino)propane]

The catalytic system [PdCl<sub>2</sub>(dppp)]/TsOH (1/8) catalyses the terpolymerisation of propene (P), 1-hexene (Hex), 1-decene (D) and styrene (S) with ethene (E) and CO, in methanol (H<sub>2</sub>O = 1000 ppm) as a solvent. At 90 °C and 45 atm (E/CO = 1/1), the best productivity were 5000 g PE<sub>2</sub>CO/(g Pd h), 5600 g HexE<sub>2</sub>CO/(g Pd h), 5650 g DECO/(g Pd h), and 4100 g SECO/(g Pd h). It has been studied the effect of olefin concentration on the productivity, average molecular weight and melting temperature and a mechanism of reaction has been proposed and discussed.

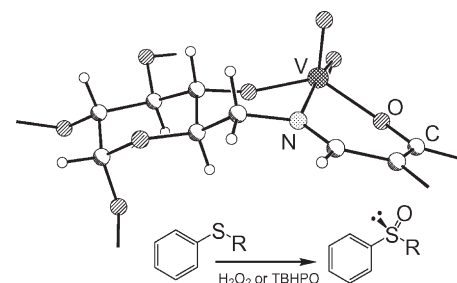


**Ines Lippold, Jana Becher, Dieter Klemm,  
Winfried Plass**

*Journal of Molecular Catalysis A: Chemical 299 (2009) 12*

Chiral oxovanadium(V) complexes with a 6-amino-6-deoxyglucopyranoside-based Schiff-base ligand: Catalytic asymmetric sulfoxidation and structural characterization

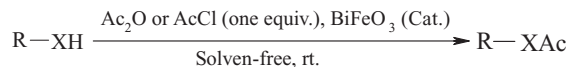
Vanadium(V) complexes with carbohydrate-based functionalized Schiff-base ligands have been synthesized and structurally characterized. These complexes have been tested for the catalytic oxidation of sulfides.



**Saeid Farhadi, Masoumeh Zaidi***Journal of Molecular Catalysis A: Chemical* 299 (2009) 18

Bismuth ferrite (BiFeO<sub>3</sub>) nanopowder prepared by sucrose-assisted combustion method: A novel and reusable heterogeneous catalyst for acetylation of amines, alcohols and phenols under solvent-free conditions

Bismuth ferrite (BiFeO<sub>3</sub>) nanopowder was prepared by the novel combustion technique using sucrose as the fuel and used as a green and recyclable heterogeneous catalyst for efficient and selective acetylation of various amines, alcohols and phenols using acetic anhydride and/or acetyl chloride as the acetylating agents at room temperature under solvent-free conditions.

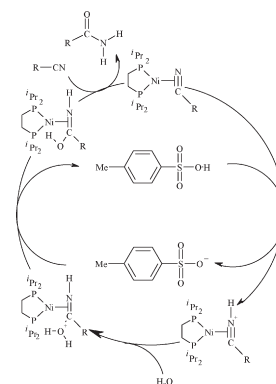


R=Aryl, Benzyl, Alkyl,  
X=NH, O, S

**Marco G. Crestani, Juventino J. García***Journal of Molecular Catalysis A: Chemical* 299 (2009) 26

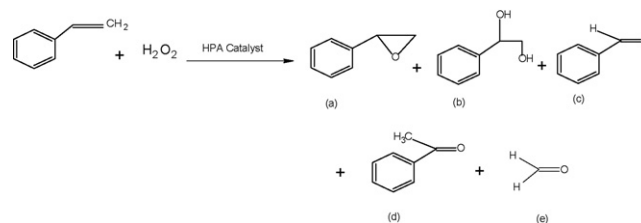
Catalytic hydration of mono and dinitriles using nickel(0) and PTSA

The catalytic hydration of mono and dinitriles using molecular nickel (0) catalysts of the type [(dippe)Ni(η<sup>2N</sup>,C-R)] (R = -Me, -Ph, -(CH<sub>2</sub>)<sub>2</sub>-CN, -(CH<sub>2</sub>)<sub>4</sub>-CN) and *p*-toluenesulfonic acid monohydrate, PTSA, under thermal conditions is presented.

**Pankaj Sharma, Anjali Patel***Journal of Molecular Catalysis A: Chemical* 299 (2009) 37

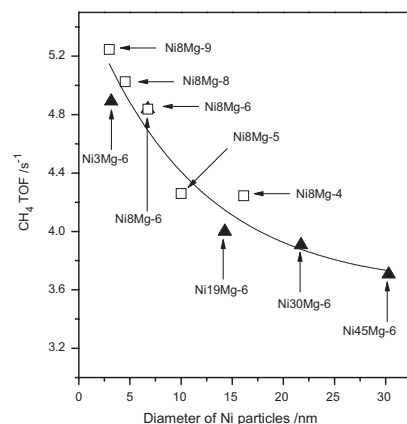
Supported 12-molybdophosphoricacid: Characterization and non-solvent liquid phase oxidation of styrene

Non-solvent oxidative cleavage of styrene has been carried out over supported 12-molybdophosphoricacid with a clean, economical and environmentally friendly oxidant, H<sub>2</sub>O<sub>2</sub> by varying different parameters. The present catalysts show high % conversion and % selectivity, towards benzaldehyde and epoxide which are important products used as intermediate in many synthetic preparation.

**Yu-He Wang, Hong-Mei Liu, Bo-Qing Xu***Journal of Molecular Catalysis A: Chemical* 299 (2009) 44

Durable Ni/MgO catalysts for CO<sub>2</sub> reforming of methane: Activity and metal-support interaction

Two series of Ni/MgO catalysts were prepared by reducing NiO/MgO precursors of different calcination temperatures or of different Ni loadings. These catalysts were investigated in CO<sub>2</sub> reforming of methane and characterized with XRD, TPR and H<sub>2</sub>-TPD. The hard reduction of NiO in NiO-MgO solid solution is helpful for the stability of Ni/MgO and the readily reduction NiO in NiO/MgO is responsible for Ni/MgO deactivation.

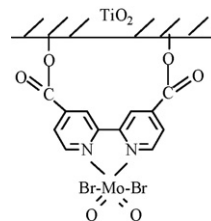


**Carlos A. Páez, Oscar Lozada, Nelson J. Castellanos, Fernando O. Martínez, Fabio Ziarelli, Giuseppe Agrifoglio, Edgar A. Páez-Mozo, Henri Arzoumanian**

*Journal of Molecular Catalysis A: Chemical* 299 (2009) 53

Arylalkane photo-oxidation under visible light and O<sub>2</sub> catalyzed by molybdenum(VI)dioxo-dibromo (4,4'-dicarboxylato-2,2'-bipyridine) anchored on TiO<sub>2</sub>

The anchoring of the molybdenum-dioxo complex on the TiO<sub>2</sub> matrix increased significantly the O-transfer capability, via the photogenerated flux onto the molybdenum coordination sphere, and furthermore isolated the metallic centers and avoided any undesired deactivation by μ-oxo dimer formation, lengthening, thus, significantly the lifetime of the catalyst.



Enhanced Photocatalytic O-Transfer with O<sub>2</sub>

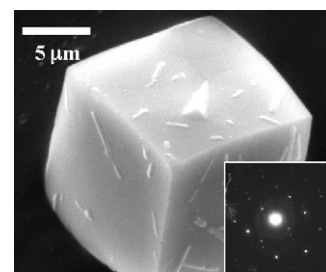
- Visible Light
- Room Temperature
- Atmospheric Pressure

**Jiguang Deng, Lei Zhang, Hongxing Dai, Hong He, Chak Tong Au**

*Journal of Molecular Catalysis A: Chemical* 299 (2009) 60

Hydrothermally fabricated single-crystalline strontium-substituted lanthanum manganite microcubes for the catalytic combustion of toluene

Single-crystalline perovskite-type oxide La<sub>1-x</sub>Sr<sub>x</sub>MnO<sub>3-δ</sub> microcubes are fabricated via a hydrothermal route. 100% toluene conversion is achieved over the La<sub>0.5</sub>Sr<sub>0.5</sub>MnO<sub>3-δ</sub> catalyst at 255 °C, which is 113 °C lower than that over the polycrystalline La<sub>0.5</sub>Sr<sub>0.5</sub>MnO<sub>3-δ</sub> catalyst. The excellent performance is related to the high Mn<sup>4+</sup>/Mn<sup>3+</sup> ratio, distinct oxygen nonstoichiometry, and single-crystalline structure.

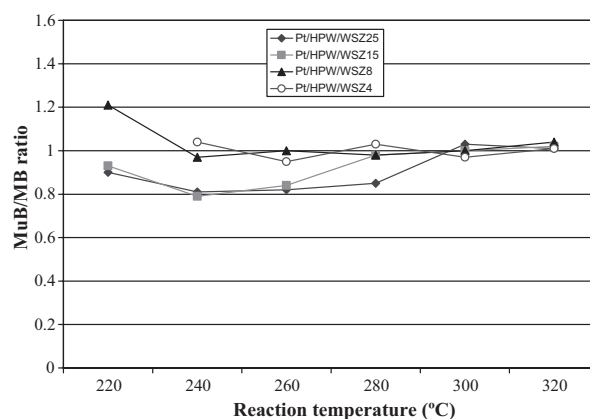


**J.A. Wang, X.L. Zhou, L.F. Chen, L.E. Noreña, G.X. Yu, C.L. Li**

*Journal of Molecular Catalysis A: Chemical* 299 (2009) 68

Hydroisomerization of n-heptane on the Pt/H<sub>3</sub>PW<sub>12</sub>O<sub>40</sub>/Zr-MCM-41 catalysts

High molar ratio (R) of multi-branched to monobranched isoheptanes in the products varying between 0.8 and 1.2 was obtained by the hydroisomerization of n-heptane over the Pt/H<sub>3</sub>PW<sub>12</sub>O<sub>40</sub>/Zr-MCM-41 catalysts. The R-value is several times higher than that obtained by using zeolite-containing catalysts at similar reaction conditions.



**Georgiy B. Shul'pin, Yuriy N. Kozlov, Svetlana N. Kholuiskaya, Maryam I. Plieva**

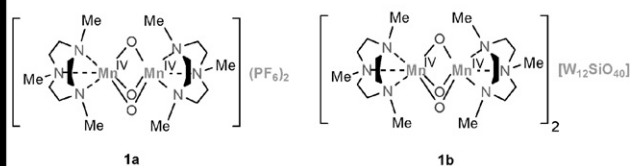
*Journal of Molecular Catalysis A: Chemical* 299 (2009) 77

Oxidations by the system 'hydrogen peroxide-[Mn<sub>2</sub>L<sub>2</sub>O<sub>3</sub>]<sup>2+</sup> (L = 1,4,7-trimethyl-1,4,7-triazacyclononane) -oxalic acid'. Part 11. Degradation of dye Rhodamine 6G and oxygenation of cyclohexene

Soluble [LMn(O)<sub>3</sub>MnL](PF<sub>6</sub>)<sub>2</sub> and insoluble [LMn(O)<sub>3</sub>MnL]<sub>2</sub>[SiW<sub>12</sub>O<sub>40</sub>] (L is 1,4,7-trimethyl-1,4,7-triazacyclononane, TMTACN) manganese complexes efficiently catalyze decoloration of dye Rhodamine 6G and oxygenation of cyclohexene with hydrogen peroxide in the presence of oxalic acid which is an obligatory co-catalyst. The kinetics of the reaction have been studied and a mechanism for the generation of two different oxidizing species has been proposed.



catalysts:

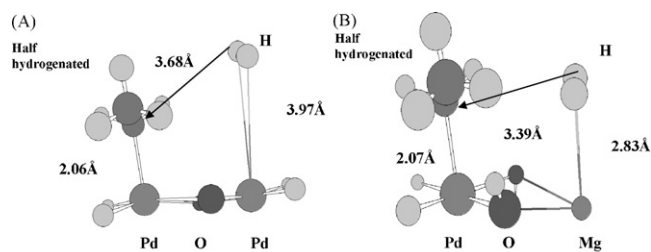


**Gabriela M. Tonetto, Jhon F. Sánchez M.,  
María L. Ferreira, Daniel D. Damiani**

*Journal of Molecular Catalysis A: Chemical* 299 (2009) 88

Partial hydrogenation of sunflower oil: Use of edible modifiers of the *cis/trans*-selectivity

Two edible modifiers of the selectivity, magnesium glycinate and ethyl benzoate were used in the partial hydrogenation of sunflower oil on a supported-Pd catalyst. It was found that the hydrogenation rate diminishes with the additions of the modifiers. Regarding the *cis/trans*-selectivity, ethyl benzoate promoted the formation of *trans*-isomers, whereas the magnesium glycinate diminished it. Theoretical calculations are used in order to explain the experimental results.



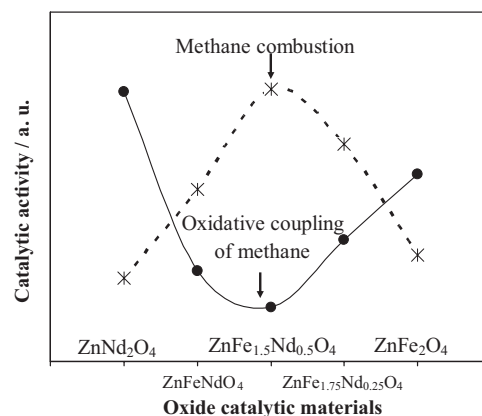
Structural findings of the half hydrogenated model adsorbed on (A) Pd<sub>2</sub>O<sub>2</sub>H<sub>4</sub> and (B) PdMgO<sub>2</sub>H<sub>4</sub>

**Florica Papa, Luminita Patron, Oana Carp,  
Carmen Paraschiv, Balint Ioan**

*Journal of Molecular Catalysis A: Chemical* 299 (2009) 93

Catalytic activity of neodymium substituted zinc ferrites for oxidative conversion of methane

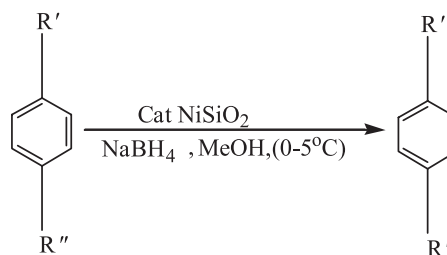
The catalytic behavior for oxidative conversion of methane in oxygen excess (methane combustion) and in reducing conditions (oxidative coupling of methane) was investigated for the first time over pure and neodymium substituted zinc ferrites. The activity was related to the structure of the oxides, to the defects created by substitution as well as to the composition of the reaction mixture.



**Ateeq Rahman, S.B. Jonnalagadda**

*Journal of Molecular Catalysis A: Chemical* 299 (2009) 98

Rapid and selective reduction of aldehydes, ketones, phenol, and alkenes with Ni-boride-silica catalysts system at low temperature



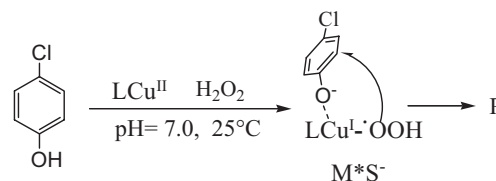
R' = CHO    R'' = CH<sub>3</sub>, OH, Br, -C=C-, COC<sub>6</sub>H<sub>5</sub> or COCH<sub>3</sub>.

**Jian-Mei Li, Xiang-Guang Meng, Chang-Wei Hu,  
Juan Du, Xian-Cheng Zeng**

*Journal of Molecular Catalysis A: Chemical* 299 (2009) 102

Oxidation of 4-chlorophenol catalyzed by Cu(II) complexes under mild conditions: Kinetics and mechanism

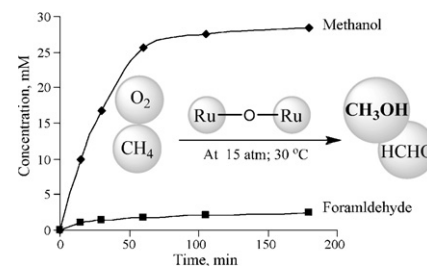
Three synthesized copper(II) complexes exhibited remarkable catalytic activity for 4-CP oxidation by H<sub>2</sub>O<sub>2</sub> under mild conditions. Fluorescence and UV-vis spectrophotometers tests proved that 4-CP oxidation was not predominated by free hydroxyl radical. LCu<sup>I</sup>-OOH (M<sup>\*</sup>) was the possible predominant reactive species. Copper(II) complex can not only activate H<sub>2</sub>O<sub>2</sub> but also decrease the pK<sub>a</sub> of 4-CP to form active intermediate M<sup>\*</sup>S<sup>-</sup>.



**Munir D. Khokhar, Ram S. Shukla, Raksh V. Jasra***Journal of Molecular Catalysis A: Chemical* 299 (2009) 108

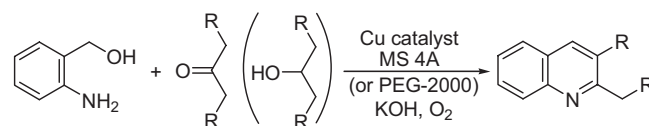
Selective oxidation of methane by molecular oxygen catalyzed by a bridged binuclear ruthenium complex at moderate pressures and ambient temperature

A binuclear bridged ruthenium complex was found to be an efficient catalyst for methane oxidation by molecular oxygen yielding selectively methanol with small amount of formaldehyde at moderate pressure and ambient temperature. Methanol formation was found to be favorable on increasing the total pressure,  $\text{CH}_4:\text{O}_2$  ratio, catalyst concentration and the partial pressures of  $\text{CH}_4$  and  $\text{O}_2$ .

**Chan Sik Cho, Wen Xiu Ren, Nam Sik Yoon***Journal of Molecular Catalysis A: Chemical* 299 (2009) 117

A recyclable copper catalysis in modified Friedländer quinoline synthesis

2-Aminobenzyl alcohol is oxidatively cyclized with ketones and secondary alcohols under a recyclable copper catalytic system (copper catalyst/MS 4A or PEG-2000) to give quinolines.

**Ching-Fu Chang, Shih-Tzung Liu***Journal of Molecular Catalysis A: Chemical* 299 (2009) 121

Catalytic oxidation of anilines into azoxybenzenes on mesoporous silicas containing cobalt oxide

Synthesis of mesoporous silicas containing cobalt oxide via a templating method using a metal-bound copolymer as a surfactant was reported. This cobalt-based material proved to be a good catalyst for conversion of anilines into the corresponding azoxybenzenes. Further, the catalyst was recycled and no major change in the conversion and selectivity was observed.

