



## Contents

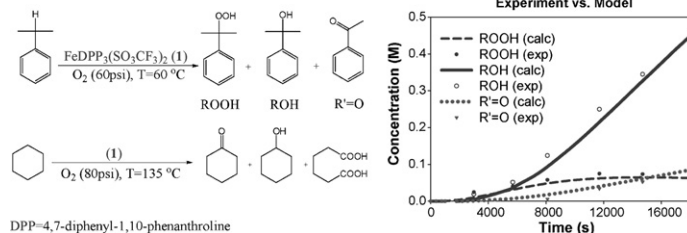
### Articles

**Ana Ison, Cheng Xu, G. Ken Weakley, David E. Richardson**

*Journal of Molecular Catalysis A: Chemical 293 (2008) 1*

Catalytic autoxidations using tris-diimine iron(II) coordination complexes

The hydrocarbon-soluble coordination complex  $[\text{Fe}(4,7\text{-diphenyl-1,10-phenanthroline})_3](\text{SO}_3\text{CF}_3)_2$  (**1**) is an active catalyst for the autoxidation of cumene and cyclohexane. The activity of **1** in the autoxidation of cumene at 60 °C is comparable to that of tetra(pentafluorophenyl)porphyrin iron(III) chloride (**2**), a halogenated iron porphyrin with high autoxidation activity. The kinetic data have been fit by a mechanism in which the iron catalyst is activated by reaction with peroxide and the resulting active complex acts as a peroxide decomposition catalyst producing chain-carrying radicals. The activity of **1** is also comparable to that of **2** in the autoxidation of cyclohexane at 135 °C. The utility of catalyst **1** is enhanced by its solubility in pure hydrocarbon substrates.

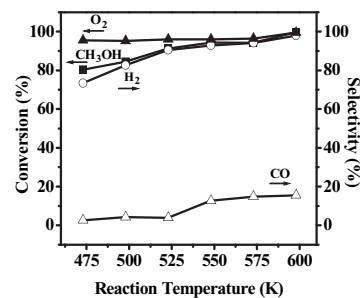


**Ti-Cheng Ou, Feg-Wen Chang, L. Selva Roselin**

*Journal of Molecular Catalysis A: Chemical 293 (2008) 8*

Production of hydrogen via partial oxidation of methanol over bimetallic Au–Cu/TiO<sub>2</sub> catalysts

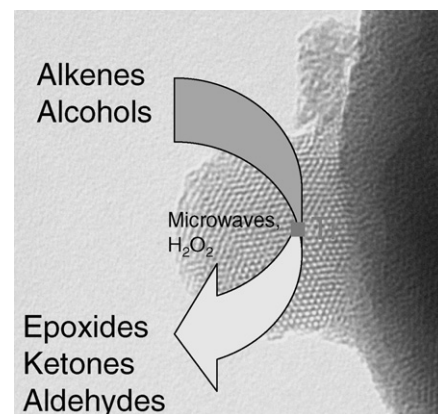
Hydrogen production via partial oxidation of methanol was studied over Au–Cu/TiO<sub>2</sub> (1–1 wt.%) and Au/TiO<sub>2</sub> (2 wt.%) and Cu/TiO<sub>2</sub> (2 wt.%) catalysts. The Au–Cu/TiO<sub>2</sub> catalyst exhibits higher activity, stability and selectivity towards the desired product. This is due to Au–Cu interaction that creates smaller metal particles and stabilizes the active Au species for POM to produce hydrogen.



**Alina M. Balu, Jose M. Hidalgo, Juan M. Campelo, Diego Luna, Rafael Luque, Jose M. Marinas, Antonio A. Romero**

*Journal of Molecular Catalysis A: Chemical 293 (2008) 17*

Microwave oxidation of alkenes and alcohols using highly active and stable mesoporous organotitanium silicates

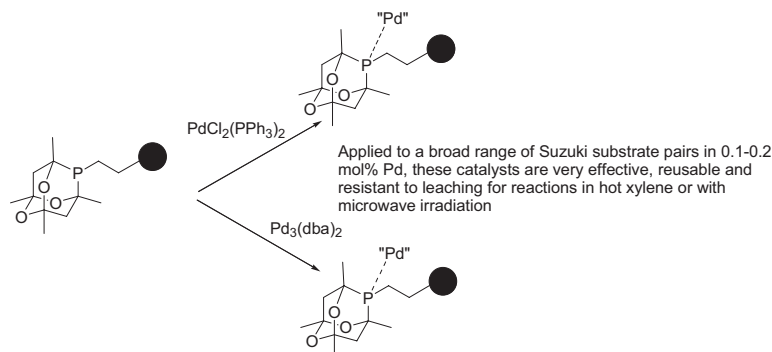


**Meritzell Guinó, Alice C. Sullivan,  
John R.H. Wilson**

*Journal of Molecular Catalysis A: Chemical* 293 (2008) 25

Silicaethylphosphatrioxaadamantane—A new support for palladium catalysts and evaluation in Suzuki coupling reactions

We report on the immobilisation of the phosphaadamantane function onto silica via an ethyl linker group and the development of heterogeneous catalysts for use in Pd-catalysed Suzuki couplings.

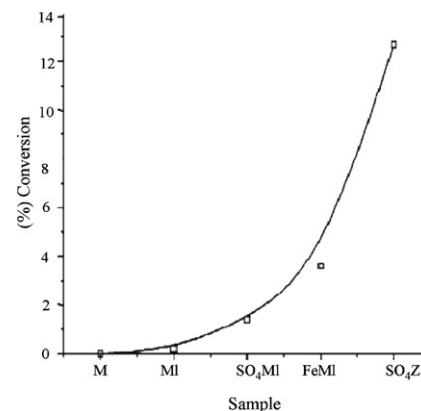


**Alcinea C. Oliveira, Nadine Essayem, Alain Tuel,  
Jean-Marc Clacens, Younes Ben Tâarit**

*Journal of Molecular Catalysis A: Chemical* 293 (2008) 31

Comparative study of transformation of linear alkanes over modified mordenites and sulphated zirconia catalysts: Influence of the zeolite acidity on the performance of *n*-butane isomerization

Iron or sulphates impregnated on dealuminated mordenite showed an enhanced conversion in the transformation of *n*-butane to isobutane compared to non-dealuminated or dealuminated mordenite. Fe or SO<sub>4</sub><sup>2-</sup> species produce new active sites that promote the catalytic activity due to the highest strength of few sites and/or to the occurrence of an initial red-ox activation step over iron species. However, modified mordenites remain less active than conventional sulphated zirconia, used as reference catalyst.



**Praveen K. Tandon, Manisha Purwar, Satpal Singh,  
Nidhi Srivastava, Manish Srivastava**

*Journal of Molecular Catalysis A: Chemical* 293 (2008) 39

Graphical separation of un-catalyzed and catalyzed reactions in iridium(III) catalyzed oxidation of cinnamaldehyde by cerium(IV) in aqueous acidic medium

Addition of catalyst changes the order of reaction in oxidant and its intercept gives the value of the rate of un-catalyzed reaction in Ir<sup>III</sup> catalyzed oxidation of cinnamaldehyde by Ce<sup>IV</sup> in acidic medium. Cerium(IV) is not reduced before the slow step with cinnamic acid as the oxidation product. Catalyzed path may be given as

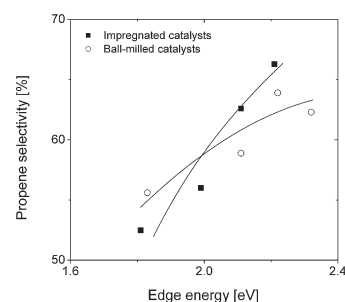
$$\frac{-d[\text{Ce}^{\text{IV}}]}{dt} = \frac{kK_1K_2[\text{Ce}^{\text{IV}}][\text{S}][\text{Ir}^{\text{III}}]}{1 + K_1K_2[\text{Ce}^{\text{IV}}][\text{S}]}$$

**O. Schwarz, D. Habel, O. Ovsitser, E.V. Kondratenko,  
C. Hess, R. Schomäcker, H. Schubert**

*Journal of Molecular Catalysis A: Chemical* 293 (2008) 45

Impact of preparation method on physico-chemical and catalytic properties of VO<sub>x</sub>/γ-Al<sub>2</sub>O<sub>3</sub> materials

Two preparation methods (wet saturation impregnation and ball-milling) were applied to produce VO<sub>x</sub>/γ-Al<sub>2</sub>O<sub>3</sub> materials with comparable physico-chemical and catalytic properties although very different precursors were used. The calcination step during catalyst preparation was found to be essential for dispersing VO<sub>x</sub> species on the support material surface. A correlation between edge energies derived from UV/vis-DRS experiments and catalytic performance was established.



**M. Badawi, L. Vivier, G. Pérot, D. Duprez***Journal of Molecular Catalysis A: Chemical* 293 (2008) 53

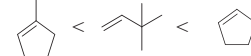
Promoting effect of cobalt and nickel on the activity of hydrotreating catalysts in hydrogenation and isomerization of olefins

**Relative reactivity in hydrogenation:**

On sulfided CoMo and Mo catalysts :



On sulfided NiMo catalyst :

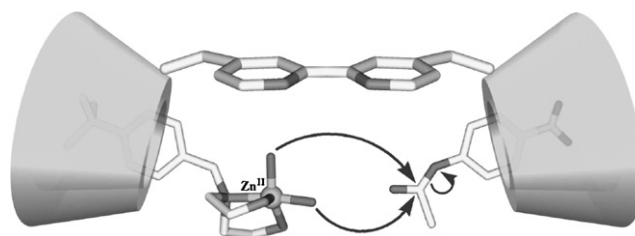
**Promoting effect:**

In hydrogenation: Co < Ni  
In isomerization: Ni < Co

**Ying-Hua Zhou, Meng Zhao, Ji-Hui Li, Zong-Wan Mao, Liang-Nian Ji***Journal of Molecular Catalysis A: Chemical* 293 (2008) 59

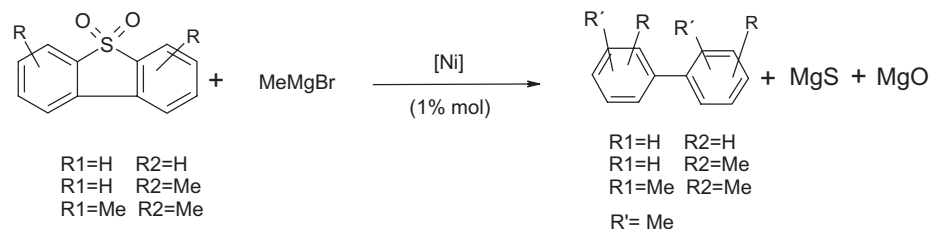
Carboxylic ester hydrolysis catalyzed by a host-guest system constructed by cyclodextrin dimer and zinc complex

A new  $\beta$ -cyclodextrin dimer was synthesized and further assembled with a zinc complex containing a hydrophobic group as a new supramolecular system of catalyzing ester hydrolysis. Thermodynamic properties of the supramolecular complex in solution and kinetics of catalyzing *p*-nitrophenyl acetate hydrolysis were investigated and obtained very good consistent results in hydroxyl active species. Compared with an unassembled host or guest analogue, the supramolecular complex exhibits much higher catalytic activity.

**Alberto Oviedo, Jorge Torres-Nieto, Alma Arévalo, Juventino J. García***Journal of Molecular Catalysis A: Chemical* 293 (2008) 65

Deoxydesulfurization of sulfones derived from dibenzothiophene using nickel compounds

The use of catalytic amounts of compounds of the type  $[\text{Ni}(\text{diphosphine})\text{H}_2]$  allowed the deoxydesulfurization of dibenzothiophene-sulfones, quantitatively yielding biphenyls.

**Kenichi Komura, Hideki Nakamura, Yoshihiro Sugi***Journal of Molecular Catalysis A: Chemical* 293 (2008) 72

Heterogeneous copper-free Sonogashira coupling reaction of terminal alkynes with aryl halides over a quinoline-2-carboimine palladium complex immobilized on MCM-41

Heterogeneous Sonogashira cross-coupling of terminal alkynes with aryl halides was studied over a quinoline-carboimine palladium complex immobilized on MCM-41 (Pd-2QC-MCM) as catalyst. Cross-coupling of phenyl acetylene with iodobenzene proceeded within 3 h at 80 °C by adding two-fold amount of piperidine in NMP solvent to afford toluene in excellent yield. Pd-2QC-MCM can be reused without significant loss of activity until 4th recycles.

