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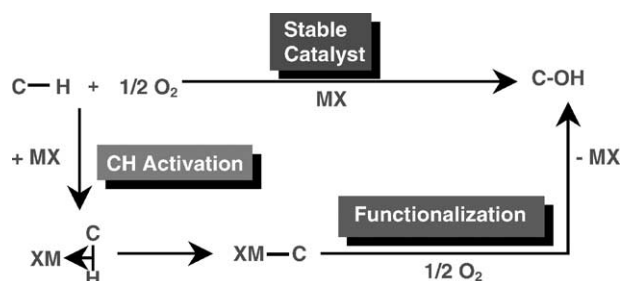
Articles

**Roy A. Periana, Gaurav Bhalla,
William J. Tenn III, Kenneth J.H. Young,
Xiang Yang Liu, Oleg Mironov,
CJ Jones, Vadim R. Ziatdinov**

*Journal of Molecular Catalysis A: Chemical 220
(2004) 7*

Perspectives on some challenges and approaches for developing the next generation of selective, low temperature, oxidation catalysts for alkane hydroxylation based on the CH activation reaction

Challenges and approaches to the *de novo*, rational development of the next generation of organometallic, alkane functionalization catalysts based on the CH activation reaction.

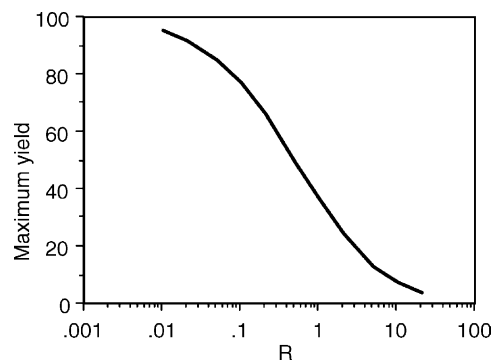


Jay A. Labinger

*Journal of Molecular Catalysis A: Chemical 220
(2004) 27*

Selective alkane oxidation: hot and cold approaches to a hot problem

Selective oxidations require mechanisms that do not make the desired products inherently more reactive than their alkane precursors. Strategies for achieving that situation are examined.

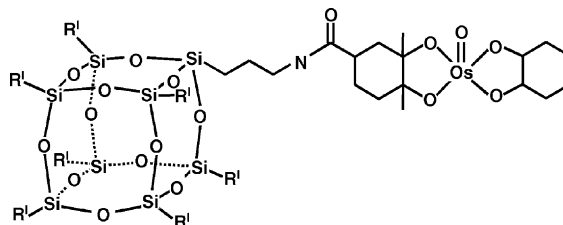


**Paolo P. Pescarmona, Anthony F. Masters,
Jan C. van der Waal, Thomas Maschmeyer**

*Journal of Molecular Catalysis A: Chemical 220
(2004) 37*

Osmium silsesquioxane as model compound and homogeneous catalyst for the dihydroxylation of alkenes

The reaction of OsO₄ with a silsesquioxane ligand containing a tetrasubstituted olefin moiety yielded a complex that proved to be an active, selective and safe homogeneous catalyst for the dihydroxylation of alkenes as well as a model compound for a silica-supported, heterogeneous Os-catalyst.

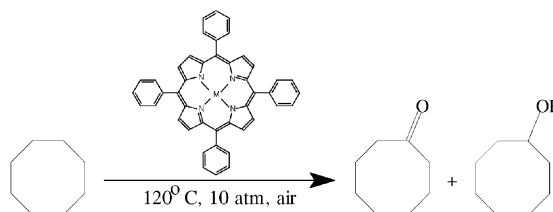


J. Połtowicz, J. Haber

Journal of Molecular Catalysis A: Chemical 220 (2004) 43

The oxyfunctionalization of cycloalkanes with dioxygen catalyzed by soluble and supported metalloporphyrins

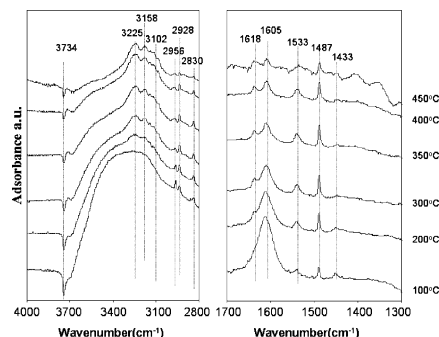
Metalloporphyrins are active and selective catalysts, homogeneous and heterogenized for partial oxidation of cycloalkanes to alcohols and ketones in mild conditions and without reduction agent.

**Chang Liu, Umit S. Ozkan**

Journal of Molecular Catalysis A: Chemical 220 (2004) 53

Effect of chlorine on redox and adsorption characteristics of Mo/Si:Ti catalysts in the oxidative dehydrogenation of ethane

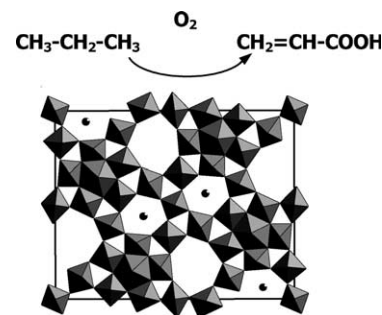
A series of sol-gel 10%Mo/Si:Ti = 1:1 catalysts modified with chlorine (Cl/Mo = 0.1–2.0) were studied with regard to their activity for the oxidative dehydrogenation of ethane. The loading effect of chlorine on the redox and adsorption characteristics has been investigated. The characterization results were correlated with the catalytic reaction performance to achieve a better understanding of the catalytic behavior of the chlorine-modified catalysts.

**Damien Vitry, Jean-Luc Dubois, Wataru Ueda**

Journal of Molecular Catalysis A: Chemical 220 (2004) 67

Strategy in achieving propane selective oxidation over multi-functional Mo-based oxide catalysts

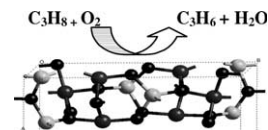
Strategical elements for developing complicated oxide catalysts, typically Mo–V–Te(Sb)–Nb–O, and for achieving industrial processes of the selective oxidation of propane to acrylic acid, are discussed on the basis of recent scientific researches and industrial approaches.

**Thomas Davies, Stuart H. Taylor**

Journal of Molecular Catalysis A: Chemical 220 (2004) 77

The oxidative dehydrogenation of propane using gallium–molybdenum oxide-based catalysts

Catalysts based on a physical mixture of Ga₂O₃ and MoO₃ have been prepared and tested for propane partial oxidation to propene. The catalyst produced appreciable propene yields by combining the alkane activation properties of Ga₂O₃ and the partial oxidation behaviour MoO₃ in a synergistic manner.

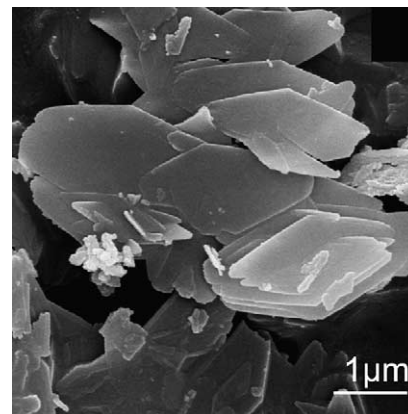


**Luisa Sartoni, Jonathan K. Bartley,
Richard P.K. Wells, Christopher J. Kiely,
Jean Claude Volta, Graham J. Hutchings**

Journal of Molecular Catalysis A: Chemical 220 (2004) 85

Promotion of vanadium phosphate catalysts using gallium compounds: effect of low Ga/V molar ratios

The doping of vanadium phosphate catalysts by low levels of gallium significantly enhances the activity of the catalyst. The promotional effect is considered to be due to both structural and electronic effects.

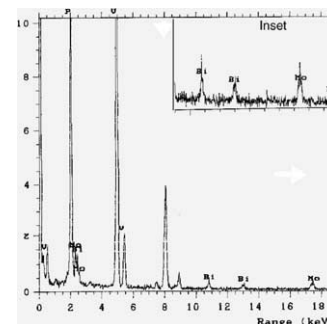


Kostantinos Kourtakis, Pratibha L. Gai

Journal of Molecular Catalysis A: Chemical 220 (2004) 93

Novel microstructures and reactivity for *n*-butane oxidation: advances and challenges in vapor phase alkane oxidation catalysis

The development of novel microstructures is reported for vanadium phosphorus oxide catalysts for the oxidation of *n*-butane to maleic anhydride by grafting alkoxides of Bi and Mo on to pre-formed precursor.

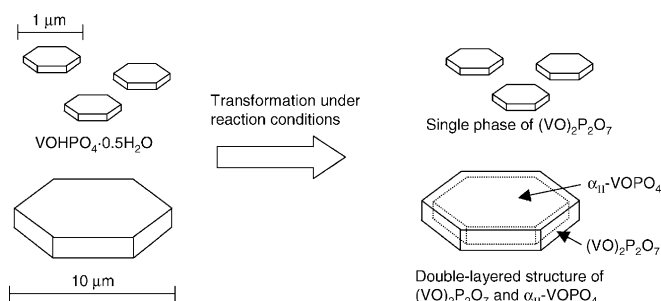


**Yuichi Kamiya, Norihito Hiyoshi,
Naonori Ryumon, Toshio Okuhara**

Journal of Molecular Catalysis A: Chemical 220 (2004) 103

Microstructures of V–P–O catalysts derived from $\text{VOHPO}_4 \cdot 0.5\text{H}_2\text{O}$ of different crystallite sizes

Small $\text{VOHPO}_4 \cdot 0.5\text{H}_2\text{O}$ crystallite transforms into single-phase $(\text{VO})_2\text{P}_2\text{O}_7$ with high selectivity to maleic anhydride for selective oxidation of *n*-butane. In contrast, the catalyst formed from large $\text{VOHPO}_4 \cdot 0.5\text{H}_2\text{O}$ crystallites has a double-layered structure, consisting of peripheral $(\text{VO})_2\text{P}_2\text{O}_7$ and internal $\alpha_{\text{II}}\text{-VOPO}_4$.



**Louisa Griesel, Jonathan K. Bartley,
Richard P.K. Wells, Graham J. Hutchings**

Journal of Molecular Catalysis A: Chemical 220 (2004) 113

Preparation of vanadium phosphate catalysts from $\text{VOPO}_4 \cdot 2\text{H}_2\text{O}$: effect of $\text{VOPO}_4 \cdot 2\text{H}_2\text{O}$ preparation on catalyst performance

