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Articles

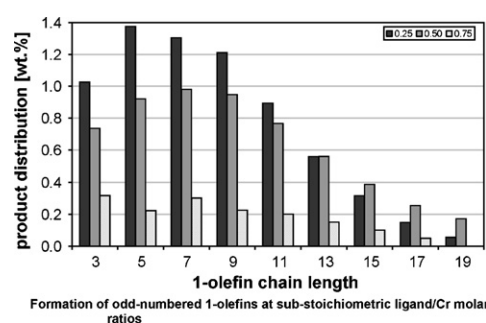
Anina Wöhl, Wolfgang Müller, Normen Peulecke, Bernd H. Müller, Stephan Peitz, Detlef Heller, Uwe Rosenthal

Journal of Molecular Catalysis A: Chemical 297 (2009) 1

Reaction kinetics of the ethene tetramerization catalyst system $\text{CrCl}_3(\text{THF})_3$, $\text{Ph}_2\text{PN}(\text{Pr})\text{PPh}_2$ and MAO: The unexpected and unusual formation of odd-numbered 1-olefins

For the ethene tetramerization catalyst system of $\text{CrCl}_3(\text{THF})_3$, $\text{Ph}_2\text{PN}(\text{Pr})\text{PPh}_2$ and MAO the ligand/Cr ratio influences remarkably the product distribution. With sub-stoichiometric ligand/Cr ratios the selective process towards 1-hexene and 1-octene changes into a Schulz–Flory-like distribution and odd numbered 1-olefins are formed.

This has consequences for the understanding of the catalytic system. Most likely, with the ratio of 0.5 binuclear complexes “(PNP) Cr_2 ” (0.5:1) or higher aggregates with bridging PNP ligands are formed, showing a completely different behavior regarding kinetics and selectivity. The selectivity towards 1-hexene and 1-octene can only be reached by adjustment of a stoichiometric ratio of ligand to chromium, either by a monometallic center like “(PNP)Cr” (1:1) or a bimetallic center like “(PNP) Cr_2 ” (1:1).

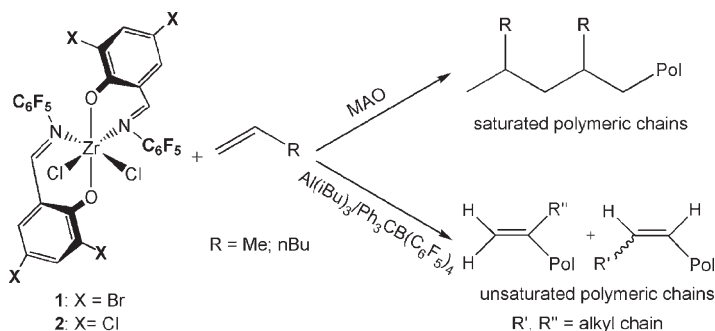


Mina Mazzeo, Marina Lamberti, Daniela Pappalardo, Liana Annunziata, Claudio Pellecchia

Journal of Molecular Catalysis A: Chemical 297 (2009) 9

Polymerization of α -olefins promoted by zirconium complexes bearing bis(phenoxy-imine) ligands with *ortho*-phenoxy halogen substituents

Two new zirconium complexes (**1** and **2**) have been synthesized and used as precatalysts in the polymerization of propylene and 1-hexene. Both complexes promote efficiently the polymerization of propylene to regioregular slightly syndiotactic polymers and the oligomerization of 1-hexene to atactic and regioregular oligomers. By an appropriate choice of the cocatalyst, unsaturated polymeric chains can be selectively produced and subsequently functionalized.

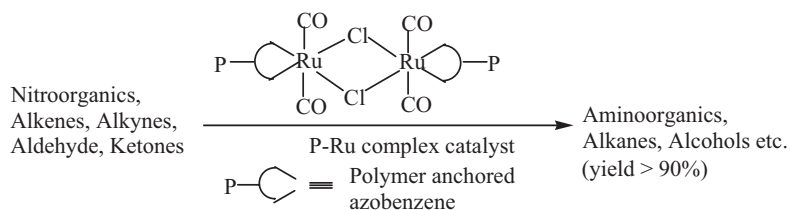


S.M. Islam, K. Tuhina, M. Mubarak, P. Mondal

Journal of Molecular Catalysis A: Chemical 297 (2009) 18

Hydrogenation of various organic substrates using polystyrene anchored orthometallated ruthenium (II) complex as catalyst

The catalytic activity of orthometallated complex $[\text{Ru}(\text{azb})(\text{CO})_2\text{Cl}]_2$ (Hazb = azobenzene) anchored to macroporous polystyrene beads was investigated towards the reduction of nitroorganics, alkenes, nitriles, ketones and aldehydes under high pressure, high temperature conditions. The polymer catalyst was found to be comparable to its homogeneous counterpart in activity and product selectivity but superior in stability and reusability.

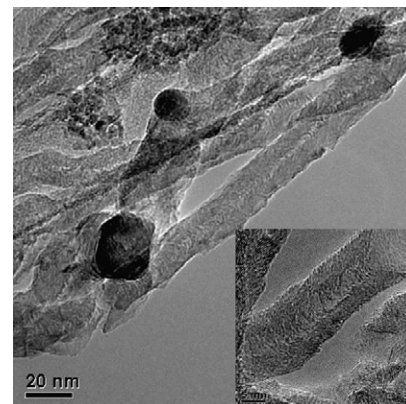


Lingzhi Zhang, Xueqin Wang, Bing Tan, Umit S. Ozkan

Journal of Molecular Catalysis A: Chemical 297 (2009) 26

Effect of preparation method on structural characteristics and propane steam reforming performance of Ni–Al₂O₃ catalysts

Preparation method is seen to play a major role in the activity and long-term stability of Ni–Al₂O₃ catalysts in steam reforming reaction. The primary mode of deactivation is the coke formation on the surface, which appears to go through different mechanisms for catalysts prepared by impregnation versus a sol–gel technique.

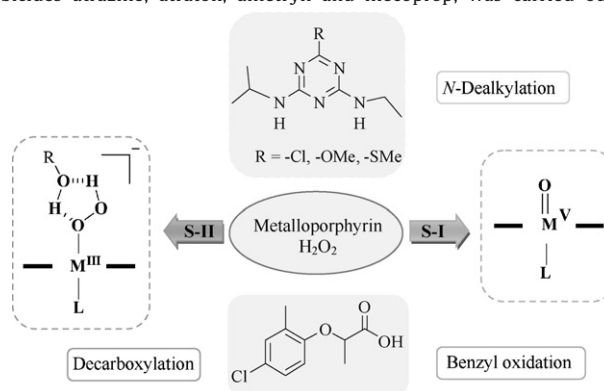


Susana L.H. Rebelo, Mariette M. Pereira, Paula V. Monsanto, Hugh D. Burrows

Journal of Molecular Catalysis A: Chemical 297 (2009) 35

Catalytic oxidative degradation of *s*-triazine and phenoxyalkanoic acid based herbicides with metalloporphyrins and hydrogen peroxide: Identification of two distinct reaction schemes

Oxidative degradation of the herbicides atrazine, atraton, ametryn and mecoprop, was carried out with hydrogen peroxide and metalloporphyrins as catalysts. Different reactivity patterns were observed for different systems of metalloporphyrin and reaction conditions. The results support the involvement of distinct active species, which were assigned to the oxo and hydroperoxy complexes.

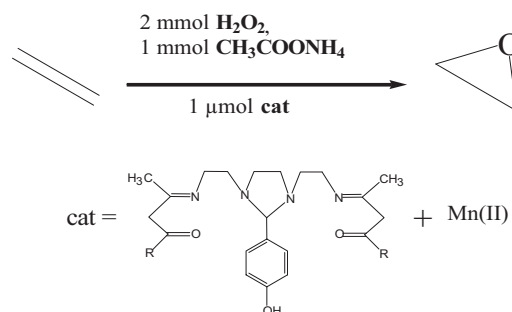


Ag. Stamatis, P. Doutsis, Ch. Vartzouma, K.C. Christoforidis, Y. Deligiannakis, M. Louloudi

Journal of Molecular Catalysis A: Chemical 297 (2009) 44

Epoxidation of olefins with H₂O₂ catalyzed by new symmetrical acetylacetonate-based Schiff bases/Mn(II) homogeneous systems: A catalytic and EPR study

New homogeneous catalytic systems formed by association of Mn(II) with symmetrical acetylacetonate-based Schiff bases have been evaluated for alkene epoxidation with H₂O₂. They are ammonium acetate-dependent. Based on catalytic and EPR data, it is suggested that ammonium acetate-additive promotes Mn(II) oxidation and probably functions as a dual acid-base system.



Miroslav Stanković, Margarita Gabrovska, Jugoslav Krstić, Peter Tzvetkov, Maya Shopska, Tsenka Tsacheva, Predrag Banković, Rumeana Edreva-Kardjieva, Dušan Jovanović

Journal of Molecular Catalysis A: Chemical 297 (2009) 54

Effect of silver modification on structure and catalytic performance of Ni–Mg/diatomite catalysts for edible oil hydrogenation

The effects of silver content on the structure, morphology, texture, H₂-adsorption capacity and catalytic performance in soybean oil hydrogenation of Mg–Ni/diatomite materials have been investigated. The most promising candidate is the catalyst with higher silver content (Ag/Ni = 0.1, SiO₂/Ni = 1.07 and Mg/Ni = 0.1) producing hydrogenated derivatives of lower of solid fat, stearic acid and detrimental *trans* fatty acids.

Stearic acid (empty symbols) and TFA (*trans* fatty acids – filled symbols) profiles vs time.

