

## Contents

### Vol. 138, No. 1

#### Articles

##### *Chemical and metal complex catalysis*

- The photocatalytic autoxidation of sulfur oxoanions by water-soluble porphyrin complexes  
S.-M. Chen (Taipei, Taiwan) . . . . . 1
- Chemo- and diastereoselective epoxidation of allylic alcohols with a titania–silica aerogel  
M. Dusi, T. Mallat and A. Baiker (Zürich, Switzerland) . . . . . 15
- Regioselective synthesis of ibuprofen via the palladium complex catalyzed hydrocarboxylation of 1-(4-isobutylphenyl) ethanol  
E.J. Jang, K.H. Lee, J.S. Lee and Y.G. Kim (Pohang, South Korea) . . . . . 25
- Zirconium complexes as catalysts for the oligomerisation of ethylene: the role of chelate ligands and the Lewis acid cocatalyst in the generation of the active species  
D. Jones, K. Cavell (Hobart, Australia) and W. Keim (Aachen, Germany) . . . . . 37
- A convenient synthesis of phenylpropanoic acids: the palladium catalyzed hydrocarboxylation of styrene derivatives in a two-phase system  
F. Bertoux (Villeneuve d'Ascq, France), S. Tilloy, E. Monflier (Lens, France), Y. Castanet and A. Mortreux (Villeneuve d'Ascq, France) . . . . . 53

##### *Molecular aspects of heterogeneous catalysis*

- Non-expanding mica incorporating alumina in the interlayer regions: a new preparation technique of fine particles of alumina  
K. Hashimoto and N. Toukai (Osaka, Japan) . . . . . 59
- Gas phase synthesis of MTBE on dodecatungstosilicic acid as the catalyst  
A. Małecka, J. Poźniczek, A. Micek-Ilnicka and A. Bielański (Kraków, Poland) . . . . . 67
- FTIR study of the interaction of NO<sub>2</sub> and propene with Pt/BaCl<sub>2</sub>/SiO<sub>2</sub>  
J.M. Coronado and J.A. Anderson (Dundee, UK) . . . . . 83
- Isomerisation on the CrCp<sub>2</sub>/SiO<sub>2</sub> catalyst during polymerisation of ethylene: pressure dependence  
R. Blom, I.M. Dahl (Oslo, Norway), A. Follestad and K.J. Jens (Stathelle, Norway) . . . . . 97

#### Letter

##### *Chemical and metal complex catalysis*

- Efficient methoxycarbonylation of benzyl chloride without external carbon monoxide: a further application of methyl formate in synthesis using PdCl<sub>2</sub>(PPh<sub>3</sub>)<sub>2</sub> as catalyst  
S. Pellegrini, Y. Castanet and A. Mortreux (Villeneuve d'Ascq, France) . . . . . 103

### Vol. 138, No. 2

#### Articles

##### *Biomimetic catalysis*

- Photoinduced hydrogen evolution with viologen-linked ruthenium(II) complexes and hydrogenase  
T. Hiraiishi, T. Kamachi and I. Okura (Yokohama, Japan) . . . . . 107

**Chemical and metal complex catalysis**

Rhenium-catalyzed oxidation of arenes—an improved synthesis of vitamin K <sub>3</sub> W.A. Herrmann, J.J. Haider and R.W. Fischer (Garching, Germany) . . . . .	115
New chiral auxiliaries in enantioselective heterogeneous catalytic hydrogenations: (–) and (+)-dihydro-apovincaminic acid. Comparison with (–)-dihydro-apovincaminic acid ethyl ester. III G. Farkas, K. Fodor, A. Tugler, T. Máthé, G. Tóth (Budapest, Hungary) and R.A. Sheldon (Delft, Netherlands) . . . . .	123
Homogeneous hydrogenation of maleic anhydride to succinic anhydride catalyzed by Rh complex catalyst L. Pu, L. Ye and Y. Yuanqi (Lanzhou, China) . . . . .	129
Kinetic study of organotin-catalyzed alcohol–isocyanate reactions. Part 1: Inhibition by carboxylic acids in toluene A.-C. Draye and J.-J. Tondeur (Mons, Belgium) . . . . .	135
Dioxygen-activated reductive epoxidation of cyclohexene using Mn(III) porphyrin as catalyst and hexylviologen as electron mediator Y. Tsuda (Sabae, Japan), K. Takahashi, T. Yamaguchi (Kanazawa, Japan), S. Matsui (Sabae, Japan), T. Komura (Kanazawa, Japan) and I. Nishiguchi (Nagaoka, Japan) . . . . .	145
Hydroformylation of ethene with triphenylphosphine modified rhodium catalyst: kinetic and mechanistic studies G. Kiss, E.J. Mozeleski (Annandale, NJ, USA), K.C. Nadler, E. VanDriessche and C. DeRoover (Machelen, Belgium) . . . . .	155

**Molecular aspects of heterogeneous catalysis**

A study on reduction behaviors of the supported platinum–iron catalysts J. Jia (Dalian, China), J. Shen (Nanjing, China), L. Lin, Z. Xu, T. Zhang and D. Liang (Dalian, China) . . . . .	177
Cluster model study on the surface interactions of $\gamma$ -alumina-supported metal oxides W.S. Xia, H.L. Wan (Xiamen, China) and Y. Chen (Nanjing, China) . . . . .	185
Gas phase reaction of hydrogen with carboxyl and carbonyl functions in aromatic systems over Ni/SiO <sub>2</sub> M.A. Keane (Leeds, UK) . . . . .	197
Deposition of tungsten hexacarbonyl on alumina: a diffuse reflectance infrared Fourier transform spectroscopy study M. Suvanto and T.A. Pakkanen (Joensuu, Finland) . . . . .	211
Oxygen transfer mechanism in the Mn-salen catalysed epoxidation of olefins A. Méou, M.-A. Garcia and P. Brun (Marseille, France) . . . . .	221
Catalytic reduction of nitric oxide over copper. Part III: Influence of water vapour H. Lu (Stockholm, Sweden), C.-M. Pradier (Paris, France) and U.O. Karlsson (Stockholm, Sweden) . . . . .	227
Double-bond activation in unsaturated aldehydes: conversion of acrolein to propene and ketene on Pt(111) surfaces J.C. De Jesús and F. Zaera (Riverside, CA, USA) . . . . .	237
Control of acidity and selectivity of titania–silica aerogel for the epoxidation of $\beta$ -isophorone R. Hutter, T. Mallat, A. Peterhans and A. Baiker (Zürich, Switzerland) . . . . .	241
Influence of calcination treatment on the structure of grafted WO <sub>x</sub> species on titania A. Scholz, B. Schnyder (Villigen, Switzerland) and A. Wokaun (Zürich, Switzerland) . . . . .	249
A catalytic method for the selective chlorination of benzyl chloride to 4-chlorobenzyl chloride using zeolite catalysts S.M. Kale and A.P. Singh (Pune, India) . . . . .	263
Selective hydrogenation of $\alpha,\beta$ -unsaturated aldehyde to $\alpha,\beta$ -unsaturated alcohol over polymer-stabilized platinum colloid and the promotion effect of metal cations W. Yu, H. Liu, M. Liu and Q. Tao (Beijing, China) . . . . .	273
Photocatalyzed degradation of lignin on TiO <sub>2</sub> K. Tanaka (Ibaraki, Japan), R.C.R. Calanag (Tagig, Philippines) and T. Hisanaga (Ibaraki, Japan) . . . . .	287
Selective hydrogenation of <i>o</i> -chloronitrobenzene over polymer-stabilized ruthenium colloidal catalysts M. Liu, W. Yu and H. Liu (Beijing, China) . . . . .	295

**Letters****Chemical and metal complex catalysis**

Selective formation of methanol over nickel carbonyl with potassium methoxide S. Ohyama (Tokyo, Japan), E.S. Lee and K.-i. Aika (Yokohama, Japan) . . . . .	305
Oxidative carbonylation of phenol to diphenyl carbonate catalyzed by Pd–Sn complexes with redox catalyst H. Ishii (Ibaraki, Japan), M. Ueda (Yamagata, Ibaraki, Japan), K. Takeuchi and M. Asai (Ibaraki, Japan) . . . . .	311

**Molecular aspects of heterogeneous catalysis**

Silicate xerogels containing cobalt as heterogeneous catalysts for the side-chain oxidation of alkyl aromatic compounds with <i>tert</i> -butyl hydroperoxide M. Rogovin and R. Neumann (Jerusalem, Israel) . . . . .	315
'On the nature of spilt-over hydrogen' M. Boudart (Stanford, CA, USA) . . . . .	319
PatentsALERT . . . . .	323
Author index . . . . .	333
Subject index . . . . .	335
Contents . . . . .	341