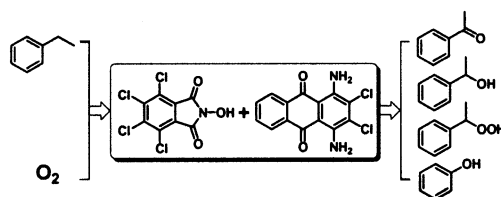


## Organocatalytic Aerobic Oxidation of Ethylbenzene Using 3, 4, 5, 6-Tetrachloro-N-hydroxyphthalimide and 1, 4-Diamino-2, 3-dichloro-anthraquinone

YANG Guan-yu, Lin Xue-song, ZHAO Jun-feng,  
ZHANG Qiao-hong, MA Hong, XU Jie

J. Mol. Catal. (China) **2007**, 21(2), 97 ~ 98

Aerobic oxidation of ethylbenzene was organocatalyzed



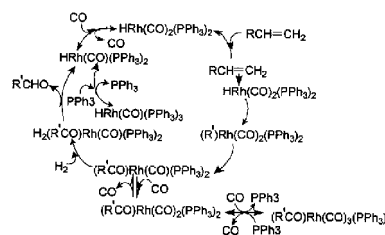
efficiently by 3, 4, 5, 6-Tetrachloro-N-hydroxyphthalimide and 1, 4-Diamino-2, 3-dichloro-anthraquinone in the absence of solvent.

## Kinetics of Hydroformylation of 1-Butene Catalyzed By Rhodium Phosphine Complex

YU Chao-ying, ZHAO Pei-qing, CHEN Ge-xin,  
XIA Chun-gu, YAO Cai-lan, WANG Jin-mei,  
ZHANG Jin-hua, ZHAO Zhi-yuan, CHEN Yi

J. Mol. Catal. (China) **2007**, 21(2), 99 ~ 103

The detail Kinetic of 1-Butene Hydroformylation using RhH



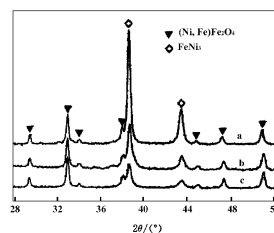
$(\text{CO})(\text{PPh}_3)_3$  as a homogeneous catalyst has been first studied. A nonlinear semiempirical kinetic model has been proposed.

## Investigation of Catalytic Decomposition Unsymmetrical Dimethylhydrazine via Ozonation in Wastewater over Ni/Fe Catalysts

YANG Bao-jun, CHEN Jian-ping, JIAO Tian-shu,  
LI Zhi-kun, LIANG Kai-lun, LU Gong-xuan

J. Mol. Catal. (China) **2007**, 21(2), 104 ~ 108

The ozonation of unsymmetrical dimethylhydrazine in wastewater can be improved over Ni/Fe catalysts prepared by co-



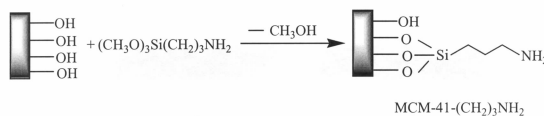
precipitation method. The decomposition of the intermediates (dimethylnitrosoamine and formaldehyde) was enhanced because of the formation of  $\text{FeNi}_3$  alloy in the Ni/Fe catalysts during treatment with hydrogen and ethanol-air mixture.

## Surface Amino Functionalization of Mesoporous Molecular Sieve MCM-41 and Application

ZHANG Yi-ping, ZHOU Chun-hui, FEI Jin-hua,  
YU Ying-min<sup>3</sup>, ZHENG Xiao-ming

J. Mol. Catal. (China) **2007**, 21(2), 109 ~ 114

The mesoporous molecular sieve MCM-41 was



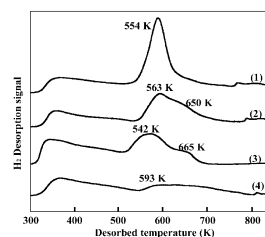
amino functionalized successfully while its hexagonal structural character was mostly retained, and it was used as support to immobilize ruthenium catalyst for  $\text{CO}_2$  hydrogenation to formic acid.

## Promotion Effect of Zn on Amorphous Co-B alloy and Their Catalytic Performance for Selective Hydrogenation of Cinnamaldehyde to Cinnamyl Alcohol

LIU Zi-li, LIU Qi-hai, WANG Peng-hua,  
HUANG Peng-mian, ZENG Ling-min

J. Mol. Catal. (China) **2007**, 21(2), 115 ~ 121

A new active site for hydrogenation was formed when Zn was introduced into amorphous Co-B catalyst, and its adsorptive



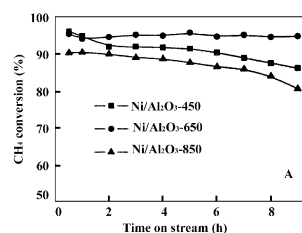
intensity to H<sub>2</sub> was stronger with Zn mole ratio increased. So at the assistance of couple effect of side bond adsorption of amorphous Co-Zn-B catalyst, a suitable content of Zn had excellent promoted effect for the selective hydrogenation performance of amorphous Co-B catalyst on cinnamaldehyde hydrogenation.

## Tri-reforming of Methane to Syngas over Ni/ Al<sub>2</sub>O<sub>3</sub>

JIANG Hong-tao, LI Hui-quan,  
ZHANG Yi

J. Mol. Catal. (China) **2007**, 21(2), 122 ~ 127

Catalyst calcined at 650 °C exhibited better stability in tri-reforming of methane reaction than catalysts calcined at other



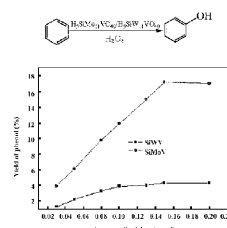
temperatures. High temperature and low pressure were favorable to TRM reaction. Feedstock compositions affected only on CO<sub>2</sub> conversion and  $n(\text{H}_2)/n(\text{CO})$  ratio of syngas, not on CH<sub>4</sub> conversion.

## The Catalytic Performance of Silicon-substituted Heteropolymolybdates and Heteropolytungstates for the Direct Oxydation of Benzene to Phenol Using Hydrogen Peroxide

LUO Qian, DONG Liang, WANG Jin-yue,  
JIAN Min, ZHANG Jin, LI Gui-ying,  
HU Chang-wei

J. Mol. Catal. (China) **2007**, 21(2), 128 ~ 131

The direct oxylation of benzene to phenol was studied



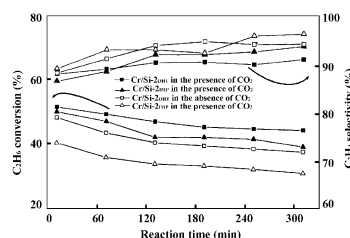
using two Keggin-type heteropolyacids. When 0.10 ~ 0.15 mmol of heteropolyacids, 4 ~ 5 mL of hydrogen peroxide were used and keeping the reaction temperature at 323K for 80 ~ 100 min, the yields of phenol over silicon-substituted heteropolymolybdates and heteropolytungstates could reach 17.2% and 4.3%, with the selectivities of 90.3% and 87.2%, respectively.

## Effect of Preparation Methods on the Performance of Cr/Si-2 Catalysts during the Dehydrogenation of Ethane to Ethylene with CO<sub>2</sub>

ZHAO Xin-hong, LI Shun-qing,  
YANG Ke-li, WANG Xiao-lai

J. Mol. Catal. (China) **2007**, 21(2), 132 ~ 138

Ethane conversion decreased markedly with increasing reaction time during the dehydrogenation of ethane in the presence or absence of CO<sub>2</sub> over Cr/Si-2<sub>DHT</sub> and Cr/Si-2<sub>IMP</sub> catalysts. In the presence of CO<sub>2</sub>, Cr/Si-2<sub>DHT</sub> catalyst showed a lower deactiva-



tion rate in comparison to Cr/Si-2<sub>IMP</sub>. In the absence of CO<sub>2</sub>, the deactivation rate showed no significant difference for the two catalysts.

### Catalytic Acylation of Anisole over Co-catalysts

ZHAO Zhen-hua

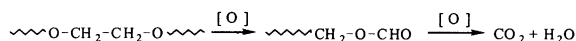
J. Mol. Catal. (China) **2007**, 21(2), 139 ~ 143

The co-catalysts was first used to catalyse the acylation reaction of anisole with an acylating agent, acetyl chloride.

### Mechanism Study on Photocatalytic Degradation of Polyethylene Glycol

WU Ying, CHEN Hong,

FAN Chong-zheng

J. Mol. Catal. (China) **2007**, 21(2), 144 ~ 148

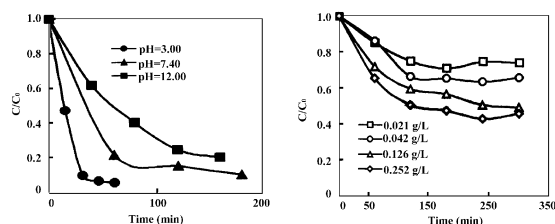
Polyethylene glycol was degraded by photocatalyst. The intermediates and products were characterized by GC, TG, FT-IR, NMR. The progress of degradation has been guessed.

### Study of Photocatalytic Degradation of Organic Pigment in the Presence of Nonionic Surfactant

ZHANG Tian-yong, HU Juan,

CHAI Yi, ZHANG You-lan,

ZHAO Jin-cai

J. Mol. Catal. (China) **2007**, 21(2), 149 ~ 154

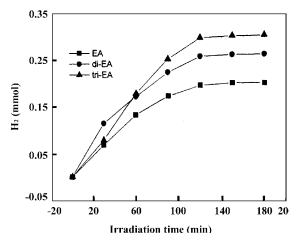
examined in aqueous  $\text{TiO}_2$  dispersions containing nonionic surfactant OP-10 under UV light irradiation. OP-10 considerably accelerated the degradation rate of R6B in acidic media while a more complicate behavior was observed on its own.

### Photocatalytic Hydrogen Generation in the Presence of Ethanolamines over Pt/ $\text{TiO}_2$

YIN Zhong-huan, LI Yue-xiang,

PENG Shao-qin, LU Gong-xuan,

LI Shu-ben

J. Mol. Catal. (China) **2007**, 21(2), 155 ~ 161

Ethanolamine, diethanolamine and triethanolamine enhance photocatalytic hydrogen generation activity notably with their

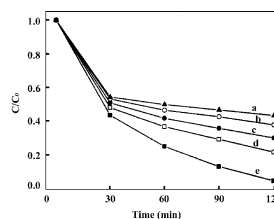
quick degradation. The photocatalytic oxidation of ethanolamines mainly produces  $\text{CO}_2$ ,  $\text{H}_2\text{O}$  and  $\text{NH}_3$ . The effect of irradiation time, the initial concentrations and pH-value were investigated and a possible reaction mechanism was discussed.

### Degradation of 2-CEES ( a Simulate Agent of Mustard) with Iron(II) Bipyridine/H<sub>2</sub>O<sub>2</sub> System under Visible Irradiation

GUAN Chen, XI Hai-ling, ZHAO Jin-cai,  
QIAO Jiang-bo, GUO Nan

J. Mol. Catal. (China) **2007**, 21(2), 162 ~ 167

Degradation of 2-CEES(2-chloroethyl ethyl sulfide, a kind of stimulant of Mustard) under visible irradiation( $\lambda > 450$  nm) was reported. Effects of degradation reaction under different con-



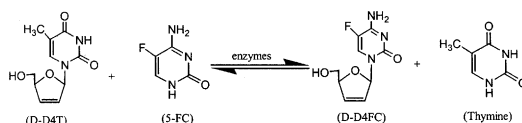
ditions were examined and the high active species which was produced during the reaction progress was confirmed by EPR. Products were analyzed with GC-MS and NMR, and also the evolution of TOC was followed. According to the results, the mechanism of the degradation of 2-CEES under visible irradiation was discussed.

### Enzymatic Synthesis of $\beta$ -D-2', 3'-unsaturated-5-fluorocytidine

QI Na, FU Shao-jun, ZHU Li-min

J. Mol. Catal. (China) **2007**, 21(2), 168 ~ 171

Using the catalytic property of N-deoxyribosyl transferase from *Lactobacillus helveticus*, we established a practical proce-



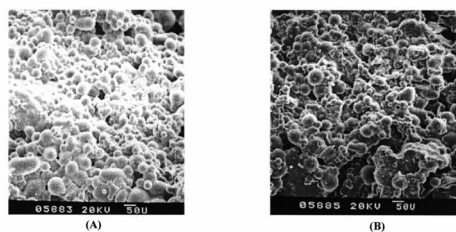
cedure for the enzymatic synthesis of the new antiviral drug of 0634-D-2', 3'-unsaturated-5-fluorocytidine (D-D4FC). Further, the effect of pH value, reaction time, different buffers and the initial concentration of substrate on the production of D-D4FC was studied.

### Synthesis and Properties of Hydrophilic Copolymer Support for $\alpha$ -amylase

CAI Li, LIAO Yang, CHAI Lan-lan,  
WAN Fang, MA Yu-jie, ZHAO Shi-lin

J. Mol. Catal. (China) **2007**, 21(2), 172 ~ 177

Reactive, macroporous and beaded acrylamide (AM)-N-hydroxysuccinimide (NHM)-N, N'-methylene-bis(acrylamide)



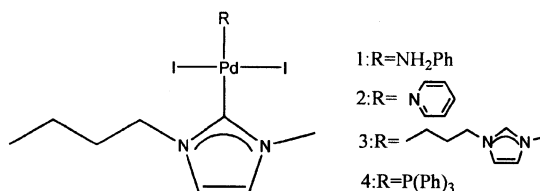
(MBAA) copolymers carrier of widely varying densities were synthesized with solution of ethanol as porogenic agent by inverse suspension copolymerization. This carrier has not been reported until now in the literature.

### ESI-MS Analysis of Four Palladium( II ) Complexes Bearing N-heterocyclic Carbenes

HU Xiao-xue, ZHENG Shu-zhan,  
PENG Xin-gao, XIA Chun-gu

J. Mol. Catal. (China) **2007**, 21(2), 178 ~ 181

The successful detection of four palladium( II ) bearing N-heterocyclic carbenes by electrospray ionization mass spectrometry



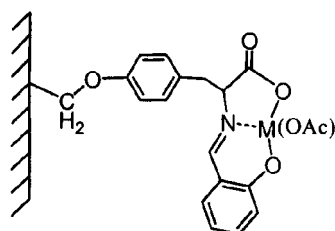
is reported. Requirements for the optimum signal-to-noise ratio in ESI mass spectra include: polar solvents (such as acetonitrile), low ionization source temperature, low skimmer voltage (5 ~ 35 V).

## Influence of Metal Center in Polymer-Bound Schiff Base Metal Complexes in Catalytic Activation of Dioxygen

SHEN Guo-rui, HE Yu-feng, DUAN Zong-fan,  
WANG Rong-min, XIA Chun-gu

J. Mol. Catal. (China) **2007**, 21(2), 182 ~ 185

The influence of different metal center (Mn, Co, Cu) of polymer-bound Schiff base metal complexes in activation of dioxygen were investigated in mild condition when cyclohexene,



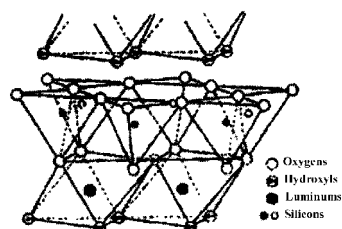
cumene and ethylbenzene were used as substrates. It is found the polymer Schiff base copper complex is the best one in catalytic oxidation of above substrates.

## Research Development of Zeolite Synthesized from Kaolin

SUN Shu-hong, WANG Zhi-feng, MA Jian-tai

J. Mol. Catal. (China) **2007**, 21(2), 186 ~ 192

Latest progress in zeolite formation from kaolin was reviewed, including kaolin properties, heat modification of kaolin, the zeolite formation mechanism from kaolin, and the research



progress of different zeolite synthesized diagram matics ketch of the structure of the kaolin crystal from kaolin. Based on the investigation, the design route of catalyst synthesized from kaolin was present.

## 欢迎订阅《分子催化》

《分子催化》是由中国化学会主办、科学出版社出版,由中国科学院兰州化学物理研究所承办的向国内外公开发行的学术刊物. 主要报导有关分子催化方面的最新进展与研究成果. 辟有学术论文、研究简报、研究快报及进展评述等栏目. 内容侧重于络合催化、酶催化、光助催化、催化过程中的立体化学问题、催化反应机理与动力学、催化剂表面态的研究及量子化学在催化学科中的应用等. 工业催化过程中均相催化剂、固载化的均相催化剂、固载化的酶催化剂等的活化、失活和再生,以及用于新催化过程的催化剂的优选与表征等方面的稿件,本刊也很欢迎. 读者对象主要是科研单位及工矿企业中从事催化工作的科技人员、研究生、高等院校化学系和化工系师生. 欢迎相关专业人员投稿.

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