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# 催化学报

(CUIHUA XUEBAO)

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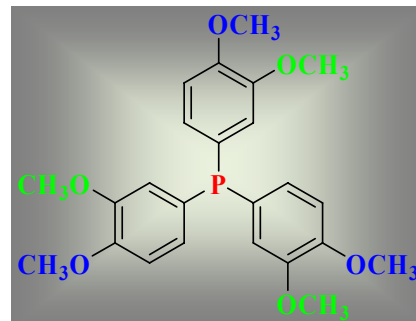
### Communication

*Chin. J. Catal.*, 2010, 31: 1093–1097 doi: 10.1016/S1872-2067(10)60105-2

#### Synthesis of the Novel Ligand Tris-(3,4-dimethoxyphenyl)phosphine and Its Catalytic Performance in 1-dodecene Hydroformylation

YUAN Maolin, FU Haiyan, LI Ruixiang, CHEN Hua\*, LI Xianjun  
*Sichuan University*

Tris-(3,4-dimethoxyphenyl)phosphine (TDMOPP) was synthesized in a two-step procedure from inexpensive 1,2-dimethoxybenzene. Higher catalytic activity was obtained for the homogenous hydroformylation of 1-dodecene at a low P/Rh molar ratio and low temperature when TDMOPP was used as a ligand.

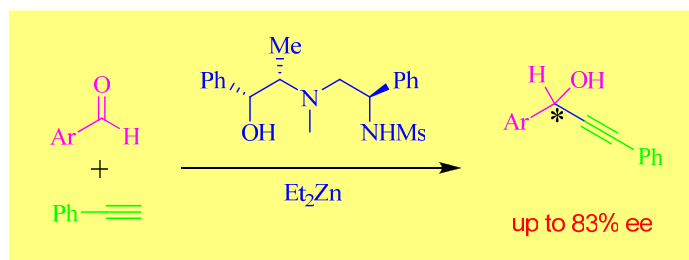


### Articles

*Chin. J. Catal.*, 2010, 31: 1098–1102 doi: 10.1016/S1872-2067(10)60106-4

#### Methylsulfonyl-Based Sulfamide-Amine Alcohol as a Ligand for Enantioselective Alkynylation of Aldehydes

JIN Wei, HUANG Yongbo, WAN Boshun\*  
*Dalian Institute of Chemical Physics, Chinese Academy of Sciences*



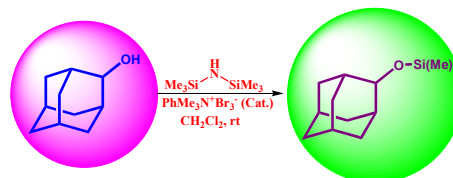
Newly developed methylsulfonyl-based sulfamide-amine alcohol ligands, which were conveniently synthesized from commercially available starting materials in two simple steps, have been found to be effective ligands for the asymmetric alkynylation of aromatic aldehydes with up to 83% ee.

*Chin. J. Catal.*, 2010, 31: 1103–1106 doi: 10.1016/S1872-2067(10)60107-6

#### Chemoselective and Catalytic Trimethylsilylation of Alcohols and Phenols by 1,1,1,3,3,3-Hexamethyldisilazane and Catalytic Amounts of $\text{PhMe}_3\text{N}^+\text{Br}_3^-$

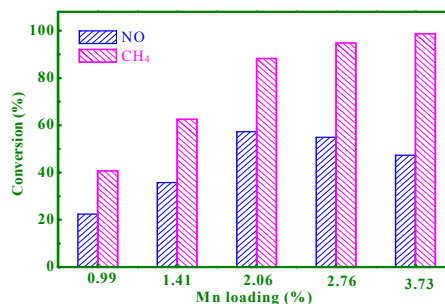
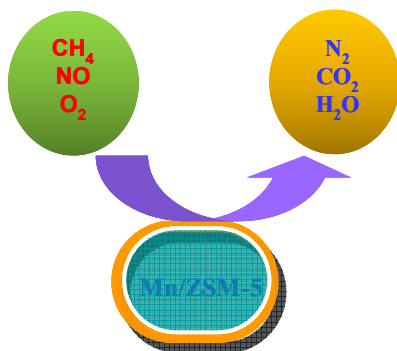
Arash GHORBANI-CHOGHAMARANI\*, Nasrin CHERAGHI-FATHABAD  
*Ilam University, Iran*

An efficient method for the trimethylsilylation of alcohols and phenols using 1,1,1,3,3,3-hexamethyldisilazane in the presence of catalytic amounts of phenyltrimethylammonium tribromide in  $\text{CH}_2\text{Cl}_2$  at room temperature is reported.



### Selective Catalytic Reduction of NO in Excess Oxygen by Methane over Mn/ZSM-5 Catalysts

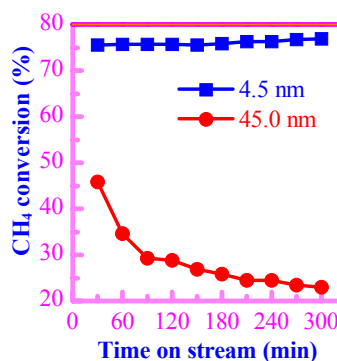
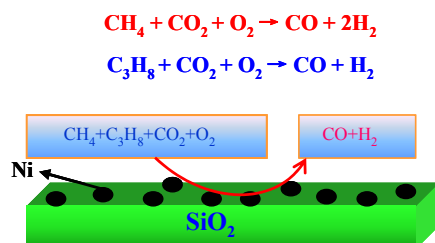
CHEN Shuwei, YAN Xiaoliang, CHEN Jiaqi, MA Jinghong, LI Ruifeng\*  
Taiyuan University of Technology



Mn/ZSM-5 prepared by the ion-exchange method with a Mn loading of 2.06% exhibited the maximum NO conversion and was more tolerant to SO<sub>2</sub> poisoning at higher temperature.

### Autothermal Reforming of CH<sub>4</sub> and C<sub>3</sub>H<sub>8</sub> to Syngas in a Fluidized-Bed Reactor

GUO Jianzhong\*, HOU Zhaoyin, ZHENG Xiaoming  
Zhejiang A & F University; Zhejiang University

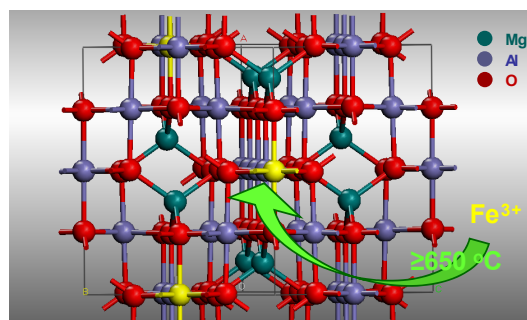


The small Ni particle size might be responsible for higher catalytic activity and stability of Ni/SiO<sub>2</sub> catalyst because it promotes the dissociation of methane and propane and offers resistance to carbon deposition.

### Preparation and Catalytic Properties of MgFe<sub>0.1</sub>Al<sub>1.9</sub>O<sub>4</sub> in Oxidative Dehydrogenation of Ethylbenzene with CO<sub>2</sub>

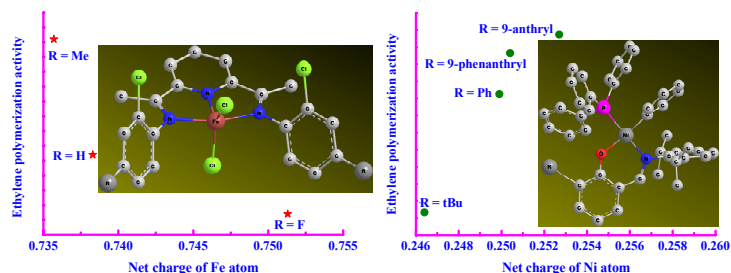
JIA Cuiying, CHEN Xin, JI Min\*  
Dalian University of Technology

The intact spinel structure of the Mg-Fe-Al ternary composite oxide can be formed at temperature higher than 650 °C by a sol-gel method. The Fe<sup>3+</sup> species in the framework exhibits good catalytic activity for ethylbenzene dehydrogenation with CO<sub>2</sub>.



### Density Functional Theory Study on the Relationship between Polymerization Activity and Substituent Electronic Effect of Polyolefin Catalysts

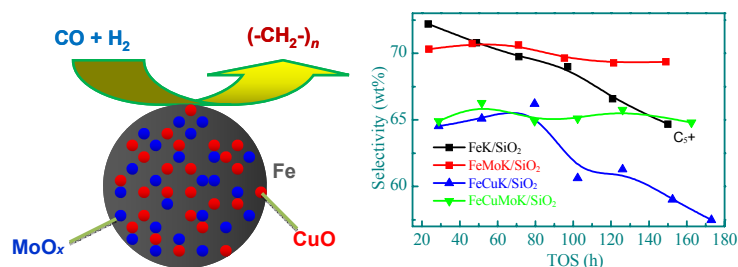
LI Huayi\*, ZHANG Liaoyun, HU Youliang  
Institute of Chemistry, Chinese Academy of Sciences



Eighteen polyolefin catalysts have been calculated using the density functional theory. The QEq charge of the central metal and HOMO and LUMO energies have good correlation with the polymerization activity.

### Mo and Cu Modified FeK/SiO<sub>2</sub> Catalysts for Fischer-Tropsch Synthesis

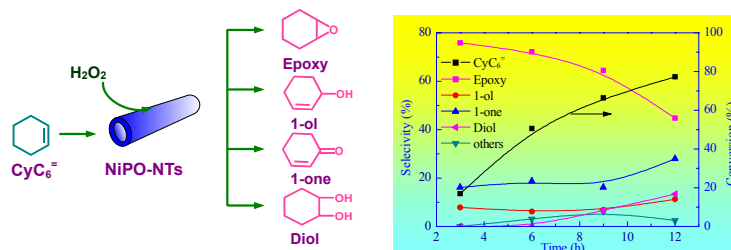
QIN Shaodong, ZHANG Chenghua\*, XU Jian, WU Baoshan, XIANG Hongwei, LI Yongwang  
Institute of Coal Chemistry, Chinese Academy of Sciences



Mo and Cu co-promotion stabilizes the selectivity to heavy hydrocarbons (C<sub>5+</sub>) over FeCuMoK/SiO<sub>2</sub> catalyst without sacrificing its catalytic activity during Fischer-Tropsch synthesis.

### Synthesis of Nickel Phosphate Nanotubes and Their Catalytic Performance for Cyclohexene Epoxidation

WU Guang, WANG Anjie\*, LI Xiang, WANG Yao, HU Yongkang  
Dalian University of Technology; Heilongjiang University



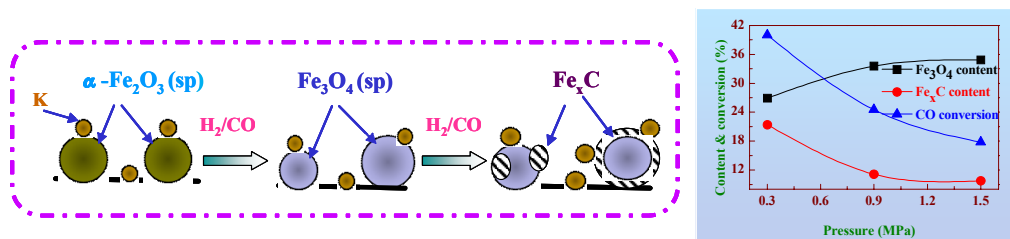
Nickel phosphate nanotubes(NiPO-NTs) with inner pore size distribution of 2.7–4.2 nm were prepared by urea-assisted hydrothermal synthesis. The NiPO-NTs showed higher catalytic activity in the epoxidation of cyclohexene.



### Relationship between Iron Phase and Activity of Iron-Based Fischer-Tropsch Synthesis Catalyst

DING Mingyue\*, YANG Yong, XIANG Hongwei, LI Yongwang

Guangzhou Institute of Energy Conversion, Chinese Academy of Sciences; Institute of Coal Chemistry, Chinese Academy of Sciences

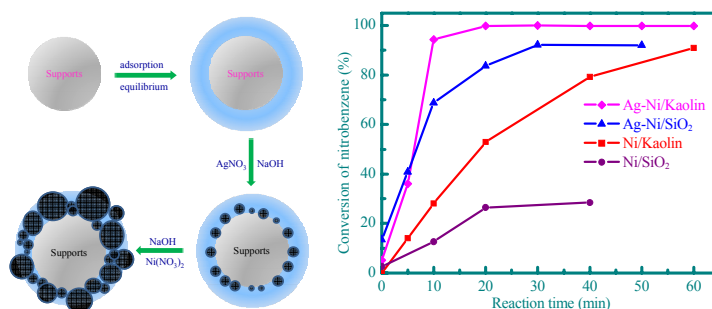


The Fe-based Fischer-Tropsch synthesis (FTS) catalyst undergoes phase transformation from  $\alpha\text{-Fe}_2\text{O}_3$  to  $\text{Fe}_3\text{O}_4$  and then to  $\text{Fe}_x\text{C}$  in the syngas atmosphere, accompanied with the increase in the FTS reactivity.

### Liquid-Phase Hydrogenation of Nitrobenzene over Ag-Ni Bimetallic Catalysts Prepared by Adsorption Phase Synthesis

JIANG Xin, DONG Kezeng, WANG Haihua, WANG Ting\*

Zhejiang University

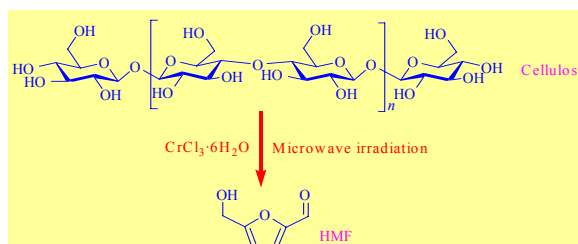


The supports (kaolin and  $\text{SiO}_2$ ) and addition of a second metal element are the two factors that affect the morphology and activity of the Ag-Ni catalysts prepared by adsorption phase synthesis.

### Production of 5-Hydroxymethylfurfural from Cellulose Catalyzed by Lewis Acid under Microwave Irradiation in Ionic Liquid

WU Shuchang, WANG Chunlei, GAO Yongjun, ZHANG Shaochun, MA Ding\*, ZHAO Zongbao

Dalian Institute of Chemical Physics, Chinese Academy of Sciences; Dalian University of Technology

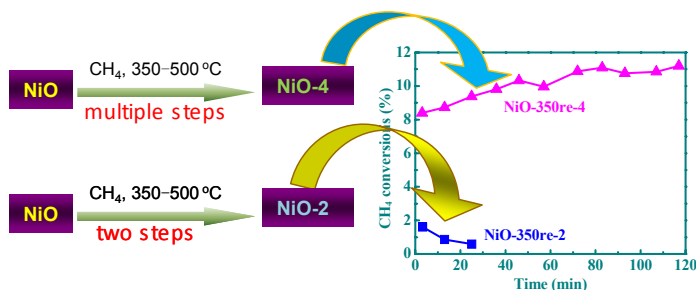


Direct conversion of cellulose into 5-hydroxymethylfurfural catalyzed by Lewis acid in [bmim]Cl with high yield was carried out under microwave irradiation.

### Influence of Step Temperature Elevating Decomposition on the Catalytic Activity of Non-supported Ni for Methane Decomposition

ZHANG Wei, GE Qingjie\*, XU Hengyong\*

Dalian Institute of Chemical Physics, Chinese Academy of Sciences

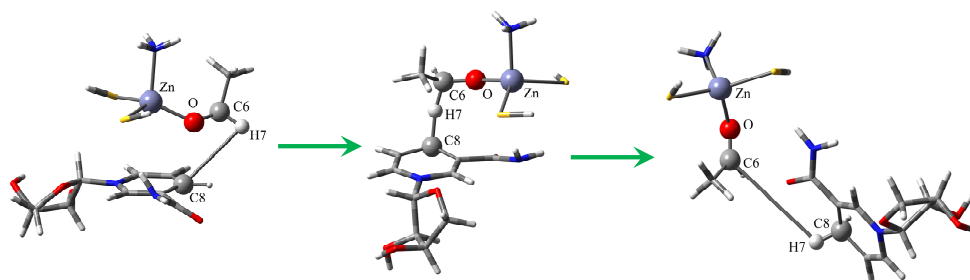


High catalytic activity and stability of the non-supported nickel catalyst for methane decomposition could be obtained by multiple step temperature elevating decomposition.

### Theoretical Study on the Mechanism of Ethanol Oxidation to Acetaldehyde Catalyzed by Liver Alcohol Dehydrogenase

LI Xiaoying, WANG Changsheng\*

Liaoning Normal University

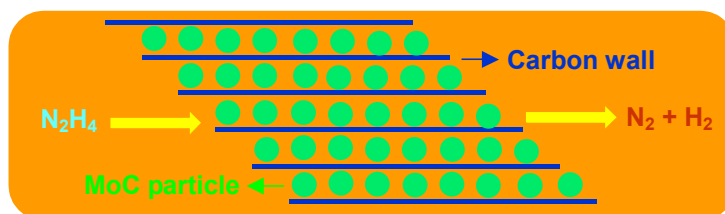


The mechanism of ethanol oxidation to aldehyde catalyzed by liver alcohol dehydrogenase in water and in protein environments was studied by the density function theory B3LYP method. The role of the liver alcohol dehydrogenase in the reaction was explored.

### Preparation of Metal Carbide Imbedded Ordered Mesoporous Carbon and Its Catalytic Properties for N<sub>2</sub>H<sub>4</sub> Decomposition

WANG Hui, ZHANG Hui, WANG Aiqin, ZHANG Tao\*

Dalian Institute of Chemical Physics, Chinese Academy of Sciences; Shanghai Research Institute of Petrochemical Technology, SINOPEC



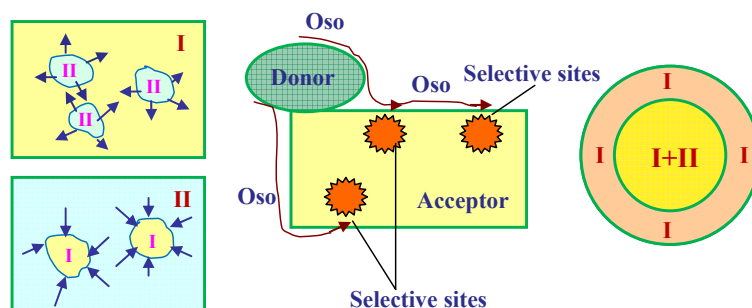
Metal carbides-doped ordered mesoporous carbon was synthesized by a simple method, and this material has excellent catalytic properties in decomposition of hydrazine to nitrogen and hydrogen.

### Biphasic Synergistic Effects of Mg-V-O Catalysts in Oxidative Dehydrogenation of Cyclohexane

JIN Mei, CHENG Zhenmin\*, JIANG Xiaoxia, GAO Yulan, FANG Xiangchen

*East China University of Science and Technology*

*Fushun Research Institute of Petroleum and Petrochemicals, SINOPEC*

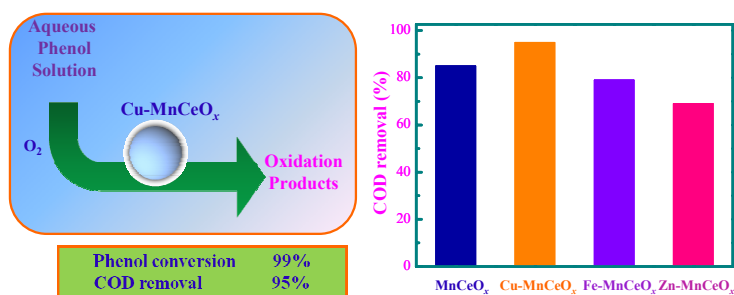


Biphasic synergistic effects of Mg-V-O catalysts for cyclohexane oxidative dehydrogenation were derived from the formation of coherent interface, the remote control mechanism (Oso), and the formation of a surface contamination layer of one phase on the catalyst surface.

### Promoting Effect of Cu on MnCeO<sub>x</sub>-Catalyzed Phenol Oxidation in Aqueous Phase

TONG Changshui, TONG Xiaoxia, JIN Menggui\*, YE Nianjun

*China University of Geosciences; Henan Institute of Geological Survey; Nanjing Institute of Geology and Mineral Resources*



Cu-modified MnCeO<sub>x</sub> catalysts exhibited higher COD removal in the oxidation of phenol in aqueous phase. The CuMn<sub>2</sub>O<sub>4</sub> species in Cu-MnCeO<sub>x</sub> was favorable for the increase of its catalytic activity in phenol oxidation.