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目　次

综　述

605 (国际版/特约)
含 TiO_2(B) 介孔氧化钛材料的制备、特性和应用
陈闪山，朱银华，李伟，刘维佳，李力成，杨祝红，刘畅，姚文俊，陆小华，冯新

研究快讯

615 (国际版/英文)
无溶剂条件下锰(Ⅲ)-席夫碱配合物催化过氧化氢氧化醇
Hamid GOLCHOUBIAN, Seyyed Ebrahim BABAEI

619 (国际版)
不同形貌的 CeO_2 催化 1,4-丁二醇选择性脱水合成 3-丁烯-1-醇
贺永艺，李奇飚，王永钊，赵永祥

623 (国际版)
用于苯与分子氧羟基化制苯酚的长链脂肪胺修饰的杂多酸催化剂
周长江，葛汉青，冷炎，王军

研究论文

626 (国际版/英文/封面文章)
粒子尺寸对 Cu/MgO 上 1-辛醇转移脱氢反应的影响
师瑞娟，王非，牟效玲，塔娜，李勇，黄秀敏，申文杰

631 (国际版/英文)
纳米 $Ce_1Mg_xZr_{1-x}O_2$ 固体多相催化剂的制备、表征及催化合成四氢苯并[*b*]吡喃衍生物的性能
Sandip RATHOD, Balasaheb ARBAD, Machhindra LANDE

637 (国际版)
SAPO-5 分子筛的制备及其催化合成对氨基苯酚
王淑芳，王延吉，高杨，赵新强

645
HZSM-5 分子筛上乙烯芳构化过程中 C4 至 C6 中间体的反应机理
曹亮，周丹红，邢双英，李新

651
脂肪酶 Novozyme 435 选择性催化 2,2-二甲基环丙烷甲酸乙酯合成 *S*-(+)-2,2-二甲基环丙烷甲酸
王普，祝加男，何军邀

656
含膦和含氮配体功能化离子液体中 $RuCl_3·3H_2O$ 催化分子氧氧化醇
周成亮，刘晔

661
PVP 稳定的纳米 Au 溶胶对葡萄糖液相选择氧化的催化性能
石玲玲，刘克增，邹旭华，金明善，索掌怀

666
$ZnCl_2$ 改性离子交换树脂的制备及其催化乙醇和乙酸酯化反应性能
张凤，蒋晓原，洪俊杰，楼辉，郑小明

671
碱金属助剂对 Au-Pt/CeO_2 催化剂催化水煤气变换反应活性的影响
于强强，李杨，邹旭华，卓红英，姚媛媛，索掌怀

677
氮化硼载体对 Ru-Ba/BN 氨合成催化剂性能的影响
徐春凤，欧阳亮，张佳，周斌，李瑛，刘化章

683
CuCl/SiO_2-TiO_2 催化剂的结构及其催化甲醇氧化羰基化反应性能
李忠，刘树森，任军，牛燕燕，郑华艳，赵强，崔丽萍

689
丙烷选择氧化单斜 $TeMo_5O_{16}$ 催化剂中钒掺杂的作用
董雪，朱艺涵，李晗，陆维敏

695
高分散 Ru/MMT 催化剂的制备及其催化喹啉加氢性能
周丽梅，付海燕，李强，陈华，李瑞祥，李贤均

701
共聚法和嫁接法制备二茂铁杂化介孔材料及其催化性能
张铁明，高鹏飞，高春光，杨恒权，赵永祥

705
双杂原子 Fe-V-β 沸石的合成、表征及催化性能
肖质文，何红运

711
高透量 PdAu/陶瓷复合膜的表征与性能评测
史蕾，曾高峰，徐恒泳

相关信息

614　《催化学报》2009年度文献计量指标 (*JCR*)
644　关于召开现代催化研究方法讲习班的通知
716　作者索引

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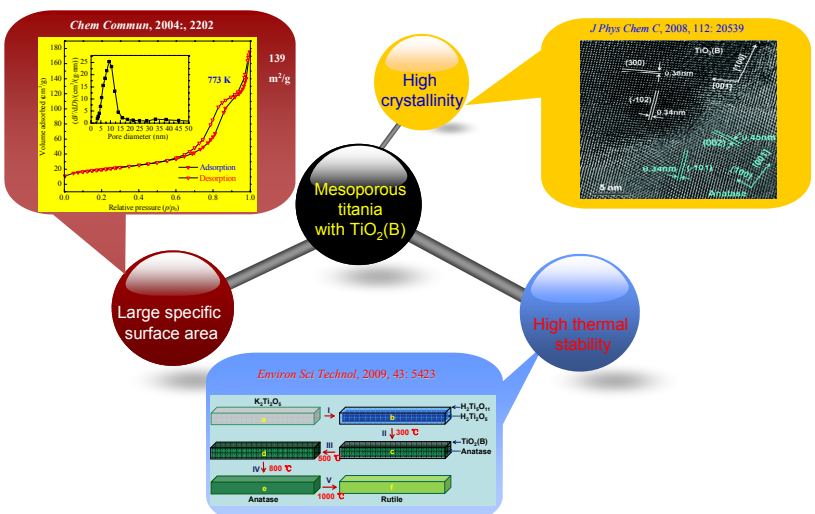
Contents

Review

Chin. J. Catal., 2010, 31: 605–614 doi: 10.1016/S1872-2067(09)60073-5

Synthesis, Features, and Applications of Mesoporous Titania with TiO_2(B)

CHEN Shanshan, ZHU Yinhua, LI Wei, LIU Weijia, LI Licheng, YANG Zhuhong, LIU Chang, YAO Wenjun, LU Xiaohua*, FENG Xin
Nanjing University of Technology



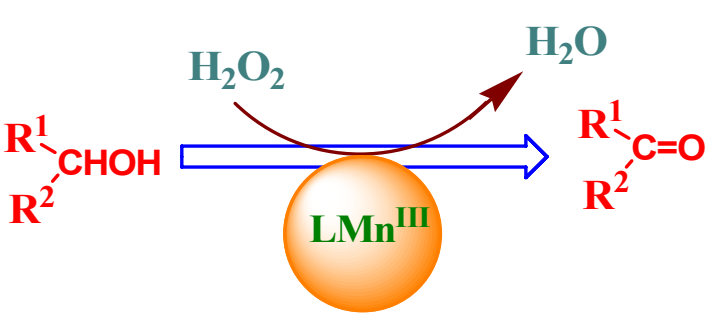
This review presents the research progress of synthesis, structure, and function towards mesoporous titania with TiO_2(B), which has large specific surface area and pore wall of high crystallinity and high thermostability.

Communications

Chin. J. Catal., 2010, 31: 615–618 doi: 10.1016/S1872-2067(09)60074-7

Solvent-Free Oxidation of Alcohols Catalyzed by a Mn(III) Schiff-Base Complex Using Hydrogen Peroxide as an Oxidant

Hamid GOLCHOUBIAN*, Seyyed Ebrahim BABAEI
University of Mazandaran, Iran; Islamic Azad University-Ghaemshahr Branch, Iran

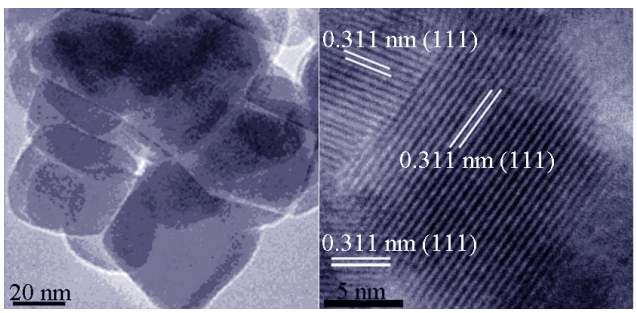


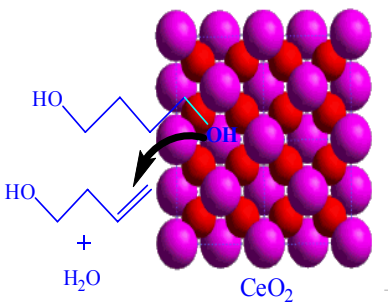
The oxidation of aliphatic and aromatic alcohols to the corresponding ketones or carboxylic acids with aqueous hydrogen peroxide as an oxidant in the presence of a Mn(III) Schiff-base complex as a catalyst under solvent-free conditions was studied.

Chin. J. Catal., 2010, 31: 619–622 doi: 10.1016/S1872-2067(09)60075-9

Selective Catalytic Dehydration of 1,4-Butanediol to 3-Buten-1-ol over CeO_2 with Different Morphology

HE Yongyi, LI Qibiao, WANG Yongzhao, ZHAO Yongxiang*
Shanxi University





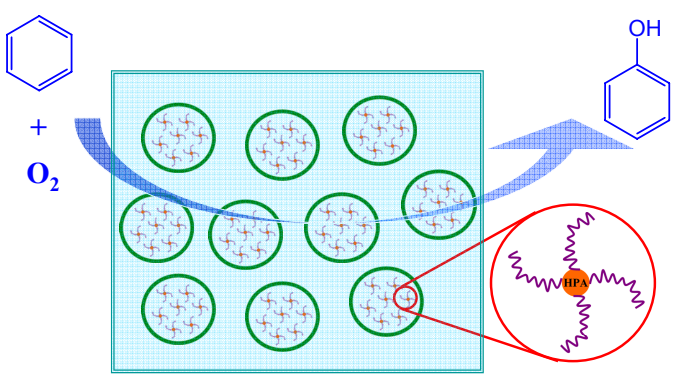
Precipitation by Na_2CO_3 gave a CeO_2 sample possessing regular rectangular morphology with clear edges, larger crystallite size, well-grown crystals, and preferentially exposed (111) facets and showing better catalytic performance for the selective dehydration of 1,4-butanediol to 3-buten-1-ol with conversion of 94.5% and 3-buten-1-ol yield of 59.7%.

Chin. J. Catal., 2010, 31: 623–625 doi: 10.1016/S1872-2067(09)60076-0

Long Chain Aliphatic Amine-Modified Heteropolyacid Catalysts for Hydroxylation of Benzene to Phenol with Molecular Oxygen

ZHOU Changjiang, GE Hanqing, LENG Yan, WANG Jun*
Nanjing University of Technology

The yield of phenol in the hydroxylation of benzene with molecular oxygen over molybdovanadophosphoric acid catalysts increased remarkably, up to 11.5%, upon modification of the heteropolyacid catalysts with laurylamine.



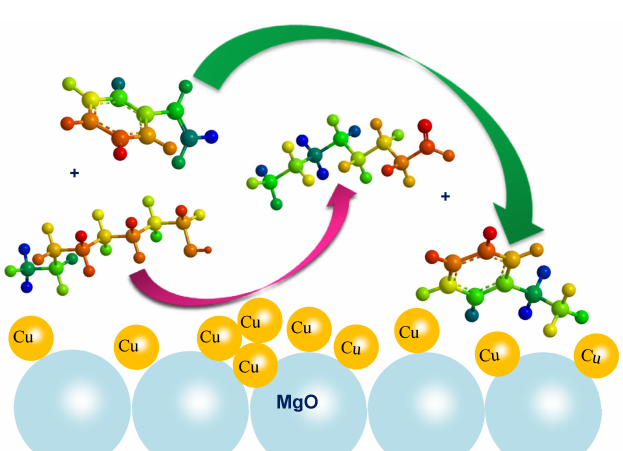
Articles

Chin. J. Catal., 2010, 31: 626–630 doi: 10.1016/S1872-2067(09)60077-2

Transfer Dehydrogenation of 1-Octanol to 1-Octanal over Cu/MgO Catalyst: Effect of Cu Particle Size

SHI Ruijuan, WANG Fei, MU Xiaoling, Ta Na, LI Yong, HUANG Xiumin, SHEN Wenjie*
Dalian Institute of Chemical Physics, Chinese Academy of Sciences

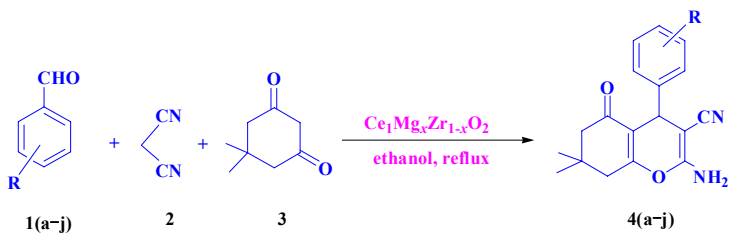
The Cu/MgO catalyst is sufficiently active for transfer dehydrogenation of primary aliphatic alcohols, like 1-octanol. With increasing the size of Cu particles from 4.6 to 7.4 nm, the yield of 1-octanal decreased from 65% to 55%.



Chin. J. Catal., 2010, 31: 631–636 doi: 10.1016/S1872-2067(09)60078-4

Preparation, Characterization, and Catalytic Application of a Nanosized $Ce_1Mg_xZr_{1-x}O_2$ Solid Heterogeneous Catalyst for the Synthesis of Tetrahydrobenzo[*b*]pyran Derivatives

Sandip RATHOD, Balasaheb ARBAD, Machhindra LANDE*
Dr. Babasaheb Ambedkar Marathwada University, India

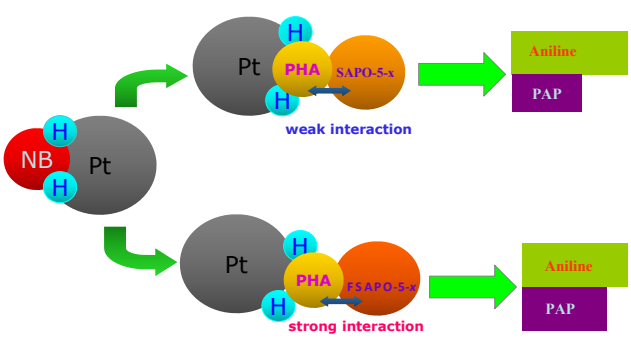


A series of mixed metal oxide $Ce_1Mg_xZr_{1-x}O_2$ solid heterogeneous catalysts were prepared, and their catalytic activity for the synthesis of biologically important compound tetrahydrobenzo[*b*]pyran derivatives was investigated. The present method is simple, efficient, and environmentally benign.

Chin. J. Catal., 2010, 31: 637–644 doi: 10.1016/S1872-2067(09)60079-6

Preparation of SAPO-5 and Its Catalytic Synthesis of *p*-Aminophenol

WANG Shufang, WANG Yanji*, GAO Yang, ZHAO Xinqiang
Hebei University of Technology

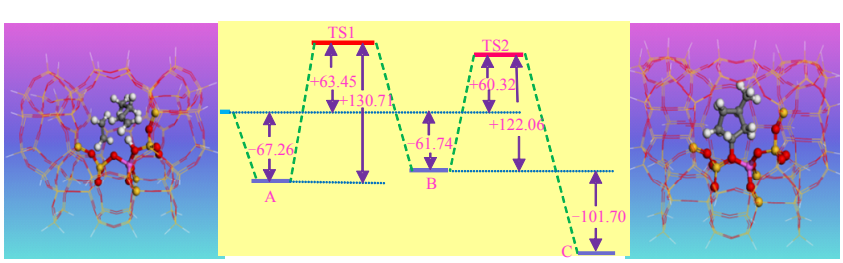


SAPO-5 prepared in a HF medium exhibits better performance in the synthesis of *p*-aminophenol because of the increase in acid strength and the consequent enhancement of the interaction between SAPO-5 and PHA.

Chin. J. Catal., 2010, 31: 645–650 doi: 10.3724/SP.J.1088.2010.91121

Reaction Mechanism of Ethylene Aromatization over HZSM-5 Zeolite: From C4 to C6 Intermediates

CAO Liang, ZHOU Danhong*, XING Shuangying, LI Xin
Liaoning Normal University; Dalian Institute of Chemical Physics, Chinese Academy of Sciences

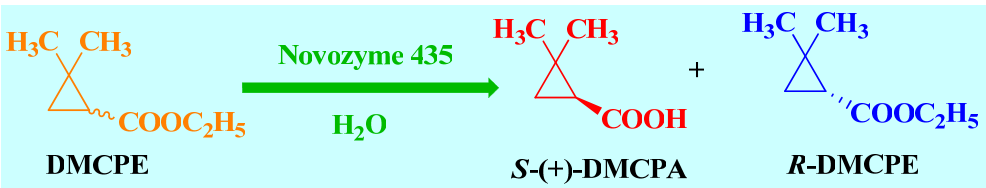


The reaction mechanism of ethylene aromatization for C4 to C6 intermediates over HZSM-5 zeolite was studied by the ONIOM2 method. The five-membered ringed methylcyclopentane was formed as the crucial intermediate.

Chin. J. Catal., 2010, 31: 651–655 doi: 10.3724/SP.J.1088.2010.91101

Enantioselective Synthesis of *S*-(+)-2, 2-Dimethylcyclopropanecarboxylic Acid from Ethyl-2,2-dimethylcyclopropanecarboxylate Catalyzed by Lipase Novozyme 435

WANG Pu*, ZHU Jianan, HE Junyao
Zhejiang University of Technology

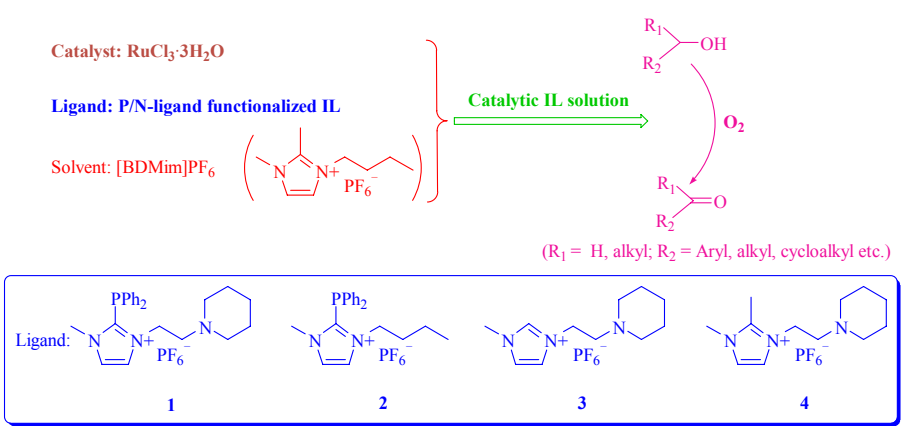


Asymmetric hydrolysis of racemic ethyl-2,2-dimethylcyclopropanecarboxylate (DMCPE) for the preparation of (*S*)-(+)-2,2-dimethyl-cyclopropanecarboxylic acid (DMCPA) can be successfully conducted using lipase Novozyme 435.

Chin. J. Catal., 2010, 31: 656–660 doi: 10.3724/SP.J.1088.2010.91122

Selective Oxidation of Alcohols with Molecular Oxygen Catalyzed by $RuCl_3 \cdot 3H_2O$ in P- and N-Containing Ligand Functionalized Ionic Liquids

ZHOU Chengliang, LIU Ye*
East China Normal University



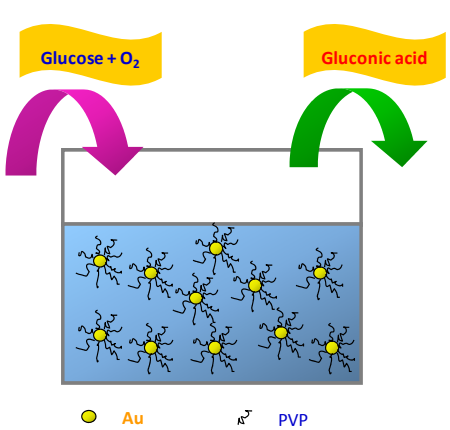
In the absence of co-oxidant, green oxidation of alcohols to aldehydes and ketones using O_2 was performed in an ionic liquid (IL) solution composed of $RuCl_3 \cdot 3H_2O$ catalyst, P/N-ligand functionalized IL, and ambient IL of $[BDMim]PF_6$.

Chin. J. Catal., 2010, 31: 661–665 doi: 10.3724/SP.J.1088.2010.91137

Selective Oxidation of Glucose in the Presence of PVP-Protected Colloidal Gold Solution

SHI Lingling, LIU Kezeng, ZOU Xuhua, JIN Mingshan,
SUO Zhanghuai*
Yantai University

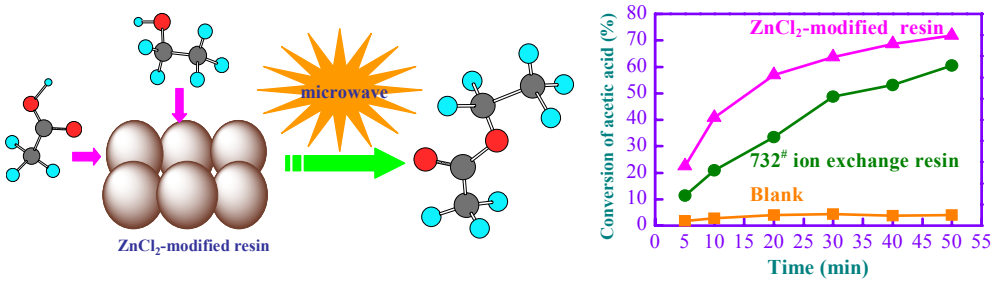
High activity for selective oxidation of glucose to gluconic acid in an aqueous phase using molecular oxygen as the oxidant at atmospheric pressure is achieved in the presence of PVP-protected colloidal gold solution.



Chin. J. Catal., 2010, 31: 666–670

Preparation of $ZnCl_2$-Modified Ion Exchange Resin and Its Catalytic Activity for Esterification of Ethanol and Acetic Acid under Microwave

ZHANG Feng, JIANG Xiaoyuan*, HONG Junjie, LOU Hui, ZHENG Xiaoming
Zhejiang University

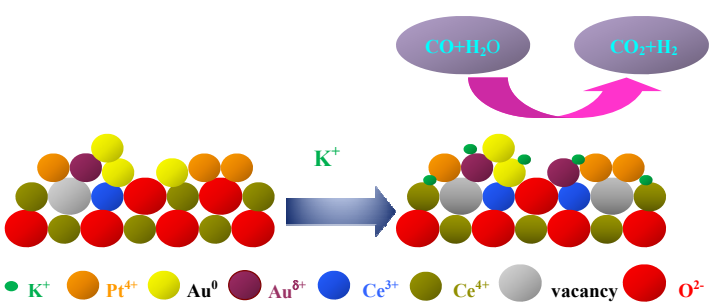


$ZnCl_2$-modified cation exchange resin has perfect performance for the esterification of ethanol and acetic acid under microwave. Acetic acid conversion increased from 60.2% to 71.3% using the modified resin compared with the unmodified resin.

Chin. J. Catal., 2010, 31: 671–676 doi: 10.3724/SP.J.1088.2010.91131

Effect of Alkali Metal Promoters on Water-Gas Shift Activity over Au-Pt/CeO_2 Catalyst

YU Qiangqiang, LI Yang, ZOU Xuhua, ZHUO Hongying, YAO Yuanyuan, SUO Zhanghuai*
Yantai University

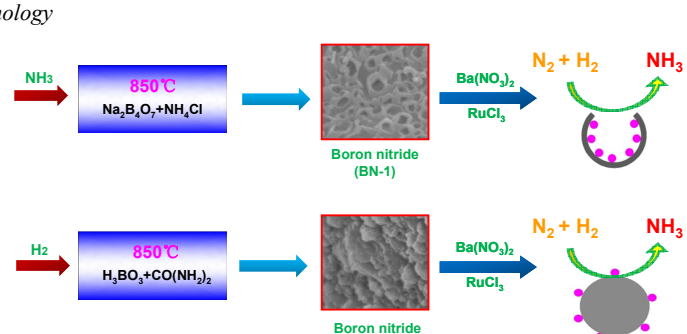


The introduction of K into Au-Pt/CeO_2 favored the reduction of cationic Au species and the enrichment of Ce^{3+} on the surface of ceria, which generated more oxygen vacancies and improved the catalyst activity for water-gas shift reaction.

Chin. J. Catal., 2010, 31: 677–682

Effect of Boron Nitride Support on Catalytic Activity of Ru-Ba/BN for Ammonia Synthesis

XU Chunfeng, OUYANG Liang, ZHANG Jia, ZHOU Bin, LI Ying*, LIU Huazhang
Zhejiang University of Technology

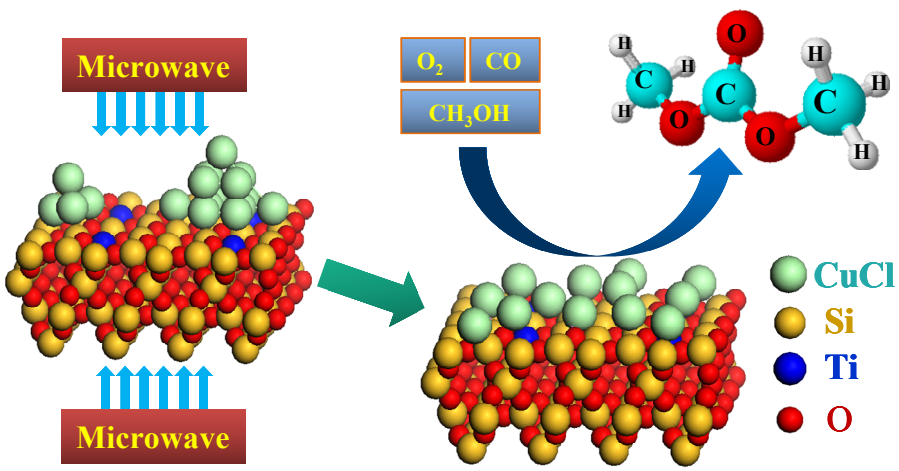


The Ru-Ba/BN catalyst supported on boron nitride was prepared by temperature-programmed nitridation and showed higher activity and better thermal stability than commercial boron nitride for ammonia synthesis.

Chin. J. Catal., 2010, 31: 683–688 doi: 10.3724/SP.J.1088.2010.91147

Structure of $CuCl/SiO_2$-TiO_2 Catalyst and Its Catalytic Properties for oxidative Carbonylation of Methanol

LI Zhong, LIU Shusen, REN Jun*, NIU Yanyan, ZHENG Huayan, ZHAO Qiang, CUI Liping
Taiyuan University of Technology



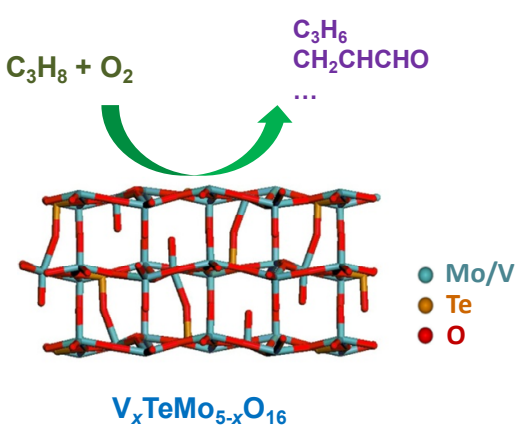
Microwave heating of CuCl and SiO_2-TiO_2 mixed oxide leads to high dispersion of CuCl on the surface of SiO_2-TiO_2 support and improves the catalyst activity in the synthesis of dimethyl carbonate from methanol.

Chin. J. Catal., 2010, 31: 689–694 doi: 10.3724/SP.J.1088.2010.91153

Roles of Vanadium Substitution of Monoclinic $TeMo_5O_{16}$ Catalyst for Propane Selective Oxidation

DONG Xue, ZHU Yihan, LI Han, LU Weimin*
Zhejiang University

Vanadium was doped into the mono-$TeMo_5O_{16}$ catalyst, which improved the catalyst activity in the propane selective oxidation. Redox properties of the surface and bulk of the catalyst were discussed.

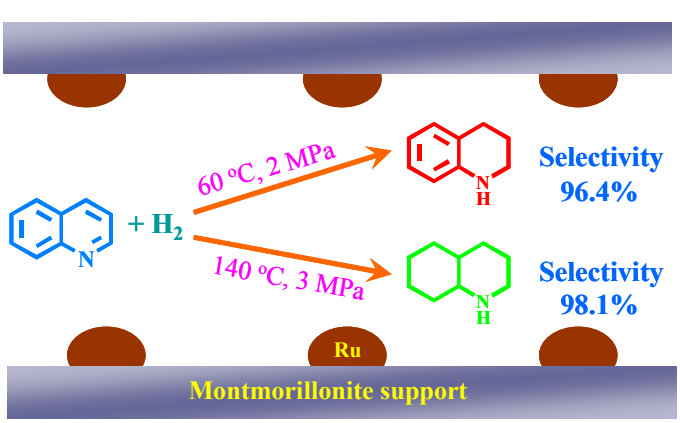


Chin. J. Catal., 2010, 31: 695–700 doi: 10.3724/SP.J.1088.2010.91206

Preparation of Highly Dispersed Ru/MMT Catalyst and Its Catalytic Activity for Quinoline Hydrogenation

ZHOU Limei, FU Haiyan, LI Qiang, CHEN Hua*,
LI Ruixiang, LI Xianjun
Sichuan University; *China West Normal University*

The highly dispersed Ru/MMT catalyst exhibited high activity and high selectivity in the hydrogenation of quinoline.

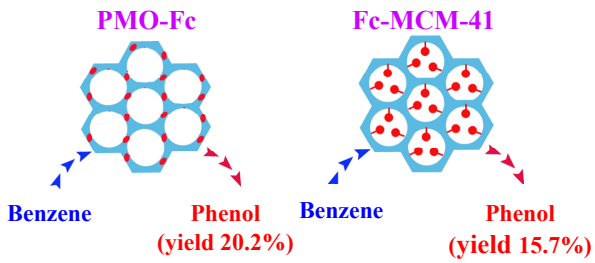


Chin. J. Catal., 2010, 31: 701–704 doi: 10.3724/SP.J.1088.2010.91150

Ferrocene-Containing Hybrid Mesoporous Materials Prepared by Co-condensation and Grafting Methods and Their Catalytic Properties

ZHANG Tieming, GAO Pengfei, GAO Chunguang, YANG Hengquan, ZHAO Yongxiang*
Shanxi University

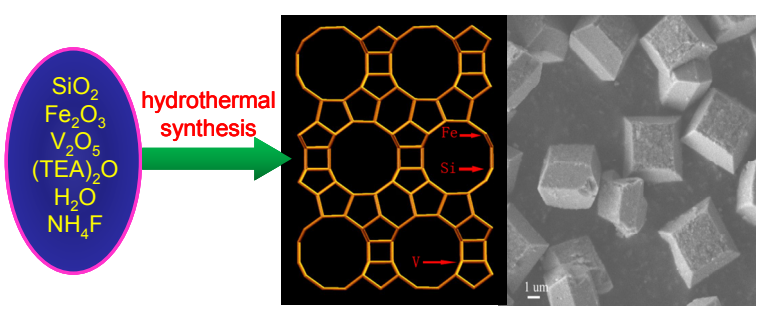
A ferrocene-containing hybrid mesoporous material, PMO-Fc, prepared by co-condensation exhibited higher catalytic activity in benzene hydroxylation than the Fc-MCM-41 material prepared by a grafting method because PMO-Fc has a higher BET surface area, pore volume, and more suitable hydrophobicity.



Chin. J. Catal., 2010, 31: 705–710 doi: 10.3724/SP.J.1088.2010.91233

Synthesis, Characterization, and Catalytic Behavior of Biheteroatomic Fe-V-β Zeolite

XIAO Zhiwen, HE Hongyun*
Hunan Normal University

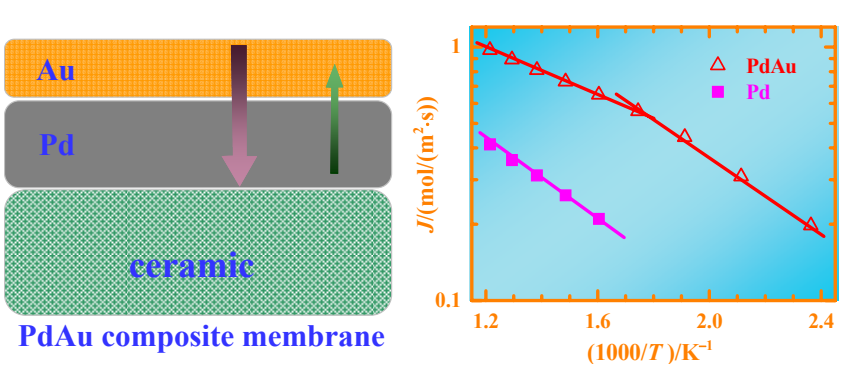


Biheteroatomic Fe-V-β zeolite was hydrothermally synthesized in a SiO_2-Fe_2O_3-V_2O_5-$(TEA)_2O$-H_2O-NH_4F system (where TEA = tetraethyl ammonium). The influence of various factors on the synthesis of Fe-V-β zeolite and the catalytic properties of Fe-V-β zeolite for the oxidation of styrene were investigated.

Chin. J. Catal., 2010, 31: 711–715 doi: 10.3724/SP.J.1088.2010.91213

Characterization and Performance of High-Flux PdAu/Ceramic Composite Membranes

SHI Lei, ZENG Gaofeng, XU Hengyong*
Dalian Institute of Chemical Physics, Chinese Academy of Sciences



The hydrogen-selective PdAu composite membrane samples were prepared by sequential electroless plating of Pd and Au onto ceramic microfiltration support.