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催化学报

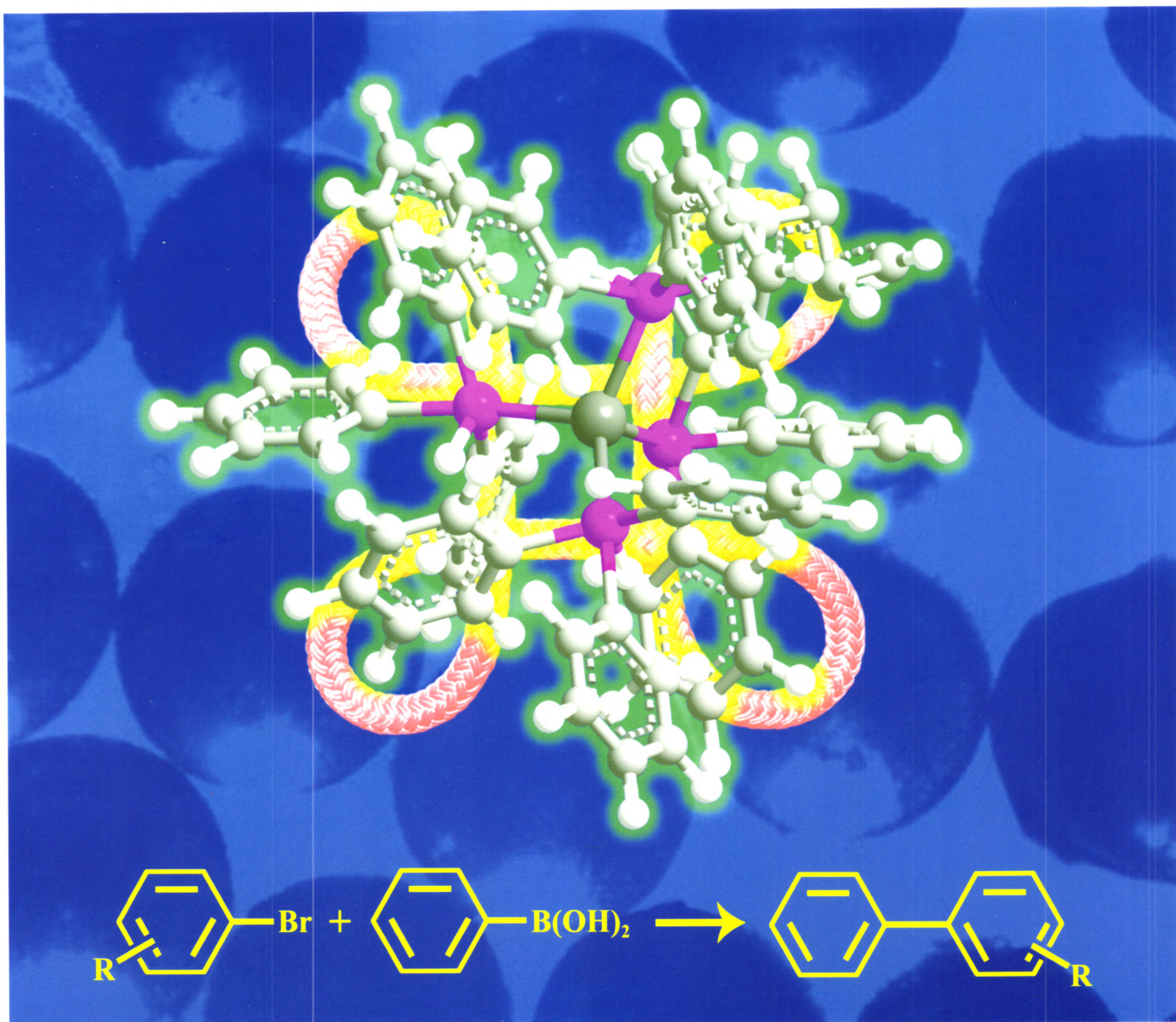
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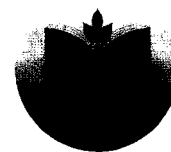
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催化学报

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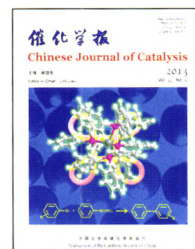
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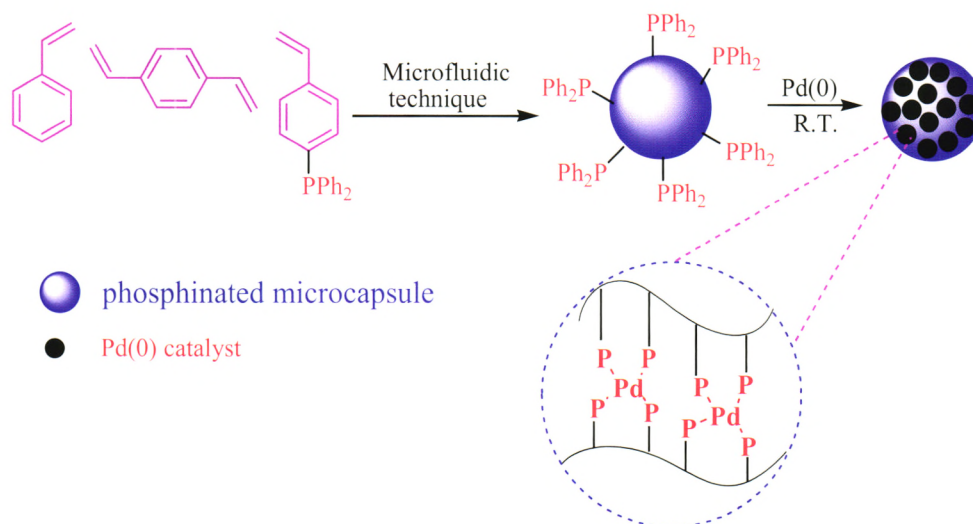
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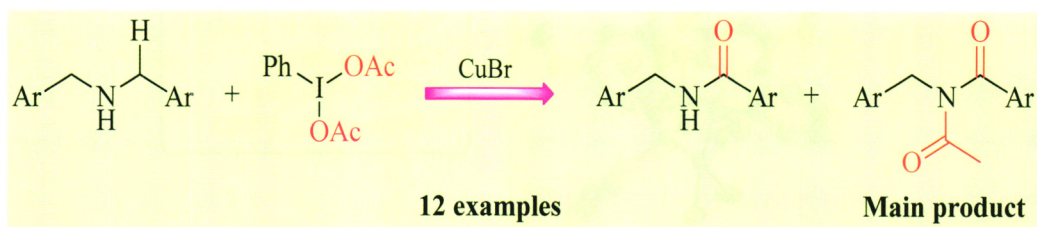
Chinese Journal of Catalysis

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Articles

Chin. J. Catal., 2013, 34: 1635–1643 doi: 10.1016/S1872-2067(12)60630-5**Preparation of microcapsule-supported palladium catalyst using a microfluidic platform**Ying Liu, Yangcheng Lü*, Guangsheng Luo
Tsinghua University

Phosphine-functionalized polystyrene microcapsules hundreds of microns in size were continuously prepared using a microfluidic platform. The microcapsules were used to prepare easily recovered, highly efficient, and reusable Suzuki reaction catalysts.

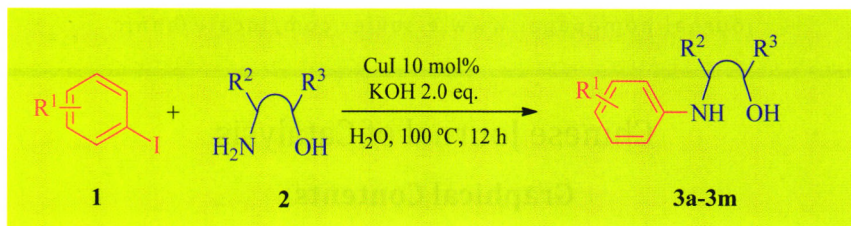
Chin. J. Catal., 2013, 34: 1644–1650 doi: 10.1016/S1872-2067(12)60617-2**Copper-catalyzed oxidative amidation of dibenzylamines via C–H bond activation**Jinjin Hu, Xiujin Zuo, Hanmin Huang*
Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences; Dalian University

A new strategy for oxidative amidation of dibenzylamines via copper-catalyzed C–H bond activation has been developed. Two kinds of amides can be achieved with good yields.

Chin. J. Catal., 2013, 34: 1651–1655 doi: 10.1016/S1872-2067(12)60623-8

Substrate-promoted copper-catalyzed *N*-arylation of amino alcohols with aryl iodides in water

Ming Jin, Dan Zhao, Guozhen He, Yao Tong, Shiqing Han*
Nanjing University of Technology

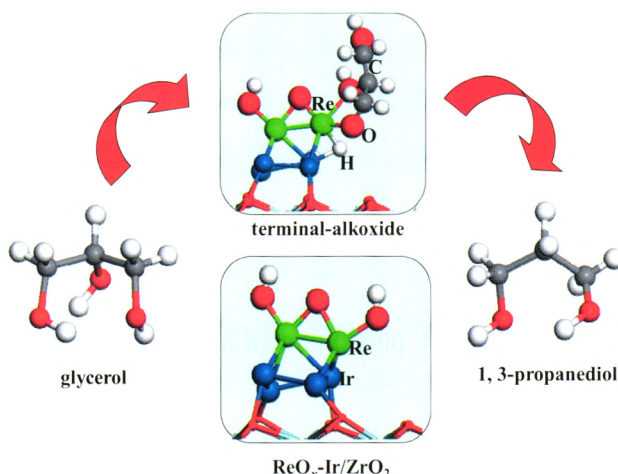


This work describes the discovery of a new catalytic system for *N*-arylation of amino alcohols using CuI in water via substrate-promoted action without the need for an additional ligand or phase transfer catalyst.

Chin. J. Catal., 2013, 34: 1656–1666 doi: 10.1016/S1872-2067(12)60626-3

Role of ReO_x in Re-modified Rh/ZrO₂ and Ir/ZrO₂ catalysts in glycerol hydrogenolysis: Insights from first-principles study

Jing Guan, Xiufang Chen, Gongming Peng, Xicheng Wang,
Quan Cao, Zhenggang Lan*, Xindong Mu*
Qingdao Institute of Bioenergy and Bioprocess Technology,
Chinese Academy of Sciences

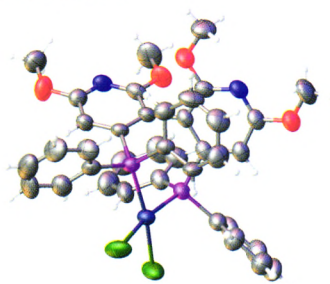
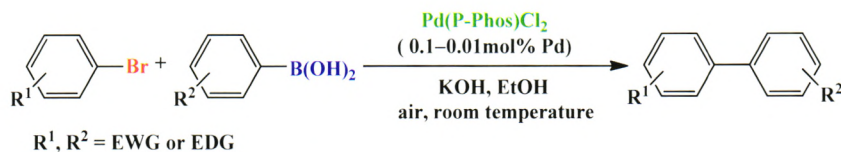


The decisive role of ReO_x present in Re-modified bifunctional catalysts in promoting the activity and 1,3-propanediol selectivity, compared with monometallic clusters, is highlighted.

Chin. J. Catal., 2013, 34: 1667–1673 doi: 10.1016/S1872-2067(12)60620-2

Suzuki-Miyaura cross-coupling reaction catalyzed by a highly stable Pd(P-Phos)Cl₂ complex at room temperature under air

Yicen Ge, Yujing Cheng, Haiyan Fu*, Xueli Zheng, Ruixiang Li, Hua Chen*, Xianjun Li
Sichuan University



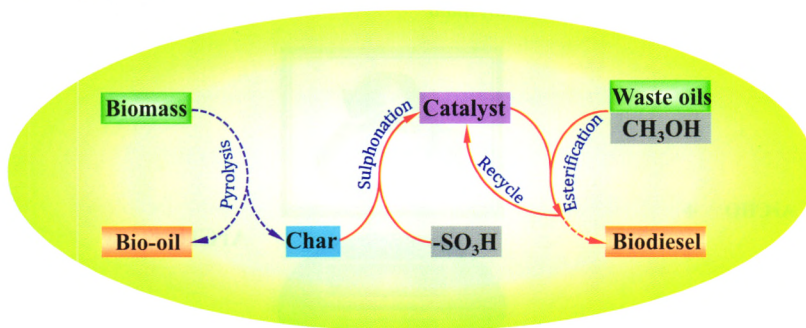
- * highly stable catalyst
- * 29 examples
- * 48%–99% yield
- * TONs up to 49000

A new Pd(P-Phos)Cl₂ complex has been synthesized and characterized. The complex catalyzed the Suzuki-Miyaura cross-coupling reactions of various aryl halide and arylboronic acids in medium to excellent yields under air at room temperature.

Chin. J. Catal., 2013, 34: 1674–1682 doi: 10.1016/S1872-2067(12)60634-2

Preparation of solid acid catalyst from rice husk char and its catalytic performance in esterification

Ming Li, Dengyu Chen, Xifeng Zhu*
University of Science and Technology of China

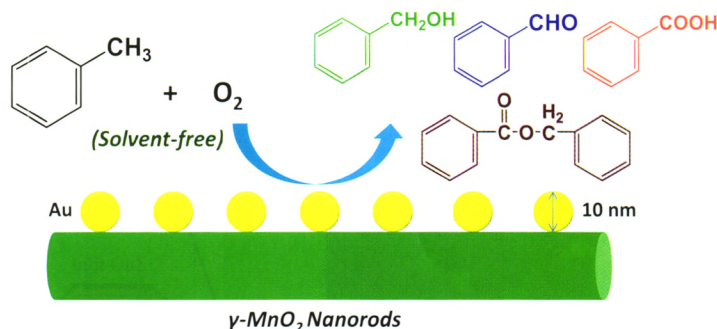


A solid acid catalyst with high $-\text{SO}_3\text{H}$ density and excellent stability was prepared from rice husk char and was used to pre-esterify materials with high fatty acid contents for biodiesel production.

Chin. J. Catal., 2013, 34: 1683–1689 doi: 10.1016/S1872-2067(12)60633-0

Au/ $\gamma\text{-MnO}_2$ catalyst for solvent-free toluene oxidation with oxygen

Feng Jiang, Xiaowen Zhu, Baosong Fu, Jinjin Huang, Guomin Xiao*
Southeast University

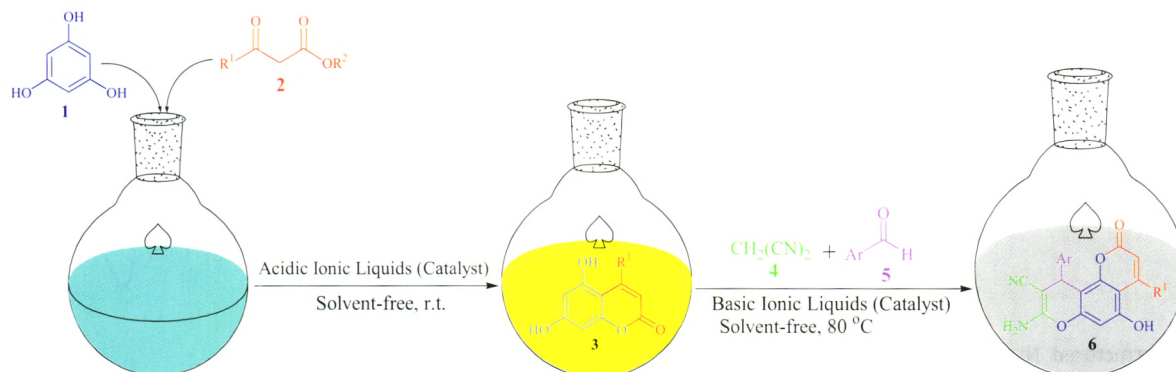


Well dispersed Au/ $\gamma\text{-MnO}_2$ catalysts have been prepared by an in situ reduction method. They showed unique selectivity towards benzaldehyde in toluene oxidation.

Chin. J. Catal., 2013, 34: 1690–1696 doi: 10.1016/S1872-2067(12)60654-8

Ionic-liquid-catalyzed green synthesis of coumarin derivatives under solvent-free conditions

Hamid Reza Shaterian*, Morteza Aghakhanizadeh
University of Sistan and Baluchestan, Iran



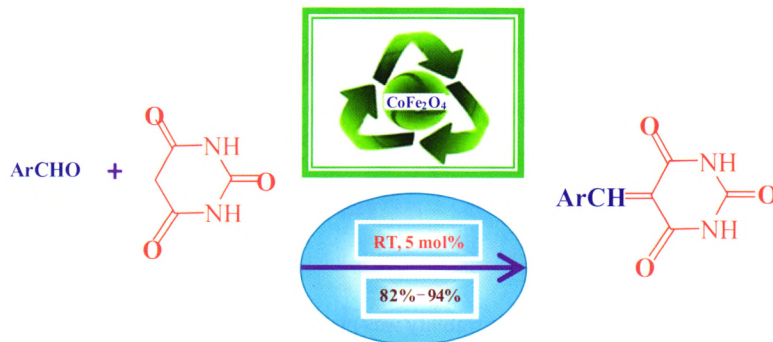
Brönsted acidic ionic liquids catalyzed efficient Pechmann condensations. The reaction of the Pechmann products, malononitrile, and aldehydes in the presence of Brönsted basic ionic liquids for synthesis of pyrano[2,3-*h*]coumarins was performed.

Chin. J. Catal., 2013, 34: 1697–1704 doi: 10.1016/S1872-2067(12)60646-9

CoFe₂O₄ nanoparticles: An efficient heterogeneous magnetically separable catalyst for “click” synthesis of arylidene barbituric acid derivatives at room temperature

Jaspreet Kaur Rajput*, Gagandeep Kaur

Dr. B. R. Ambedkar National Institute of Technology, Jalandhar, India



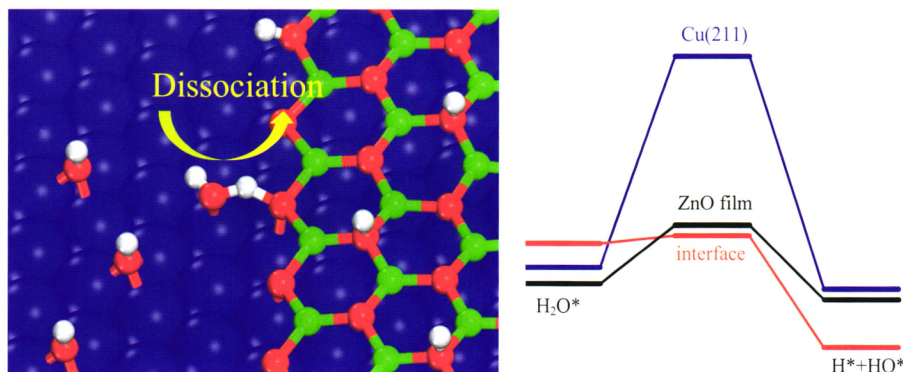
An efficient protocol for the “click” synthesis of arylidene barbituric acid derivatives using a heterogeneous magnetically separable CoFe₂O₄ nanocatalyst is presented. The synthesis is simple, clean, and eco-friendly.

Chin. J. Catal., 2013, 34: 1705–1711 doi: 10.1016/S1872-2067(12)60642-1

First-principles study of water activation on Cu-ZnO catalysts

Kun Yao, Sha-Sha Wang, Xiang-Kui Gu, Hai-Yan Su, Wei-Xue Li*

Dalian Institute of Chemical Physics, Chinese Academy of Sciences



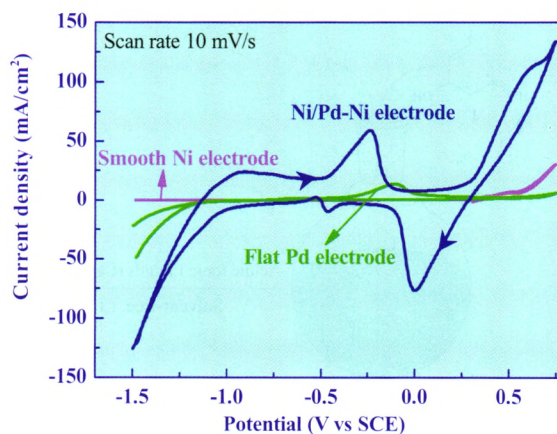
Cu-ZnO interfaces serve as the active site for water activation on the Cu-ZnO catalyst rather than other sites of the Cu-ZnO catalyst.

Chin. J. Catal., 2013, 34: 1712–1719 doi: 10.1016/S1872-2067(12)60643-3

Methanol electro-oxidation on a porous nanostructured Ni/Pd-Ni electrode in alkaline media

Mir Ghasem Hosseini*, Mehdi Abdolmaleki, Sajjad Ashrafpoor

University of Tabriz, Iran

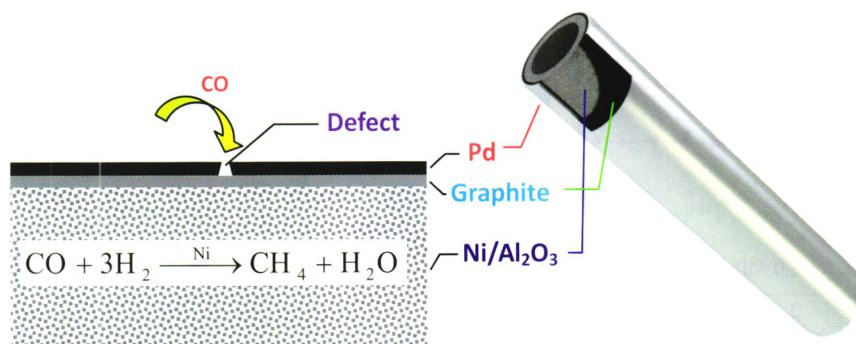


The nanostructured Ni/Pd-Ni electrode shows significantly greater electro-catalytic activity towards methanol oxidation than flat palladium and smooth nickel electrodes. The high activity of Ni/Pd-Ni electrode can be attributed to its high surface area.

Chin. J. Catal., 2013, 34: 1720–1729 doi: 10.1016/S1872-2067(12)60636-6

Bifunctional palladium composite membrane for hydrogen separation and catalytic CO methanation

Xiaojuan Hu, Wenjun Yan, Weihua Ding, Jian Yu, Yan Huang*
Nanjing University of Technology

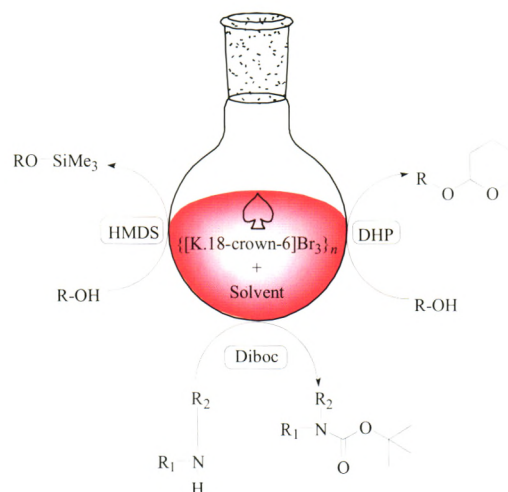


Aiming at the hydrogen purification for proton exchange membrane fuel cells, a bifunctional Pd/Pencil/Ni/Al₂O₃ membrane that is capable of hydrogen separation and catalytic CO methanation was developed. It was compared with the Pd/Pencil/Al₂O₃ membrane without the nickel methanation catalyst.

Chin. J. Catal., 2013, 34: 1730–1733 doi: 10.1016/S1872-2067(12)60644-5

{[K.18-Crown-6]Br₃}_n: A tribromide catalyst for the catalytic protection of amines and alcohols

Gholamabbas Chehardoli*, Mohammad Ali Zolfigol, Fateme Derakhshanpanah
Hamedan University of Medical Sciences, Hamedan, Iran;
Bu-Ali Sina University, Hamedan, Iran

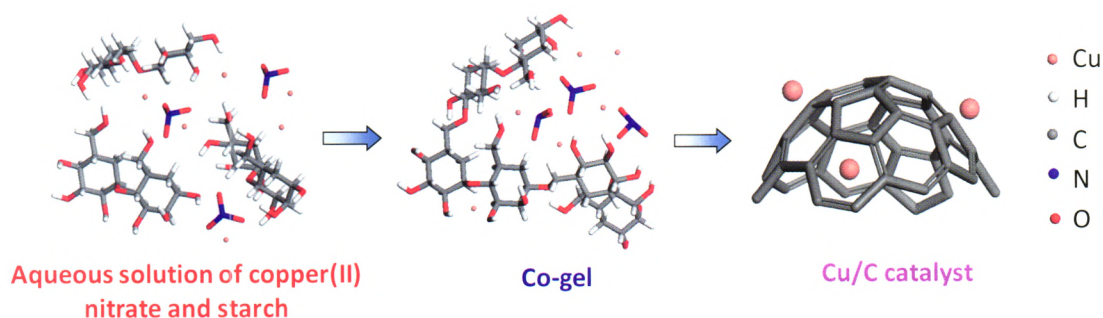


{[K.18-Crown-6]Br₃}_n as a unique tribromide-type catalyst was utilized for the *N*-boc protection of amines and the trimethylsilylation/tetrahydropyranylation of alcohols. The simple separation of the catalyst from the products is only one of the many advantages of this method.

Chin. J. Catal., 2013, 34: 1734–1744 doi: 10.1016/S1872-2067(12)60640-8

Synthesis of dimethyl carbonate over starch-based carbon-supported Cu nanoparticles catalysts

Jun Ren*, Changjiang Guo, Leilei Yang, Zhong Li
Taiyuan University of Technology



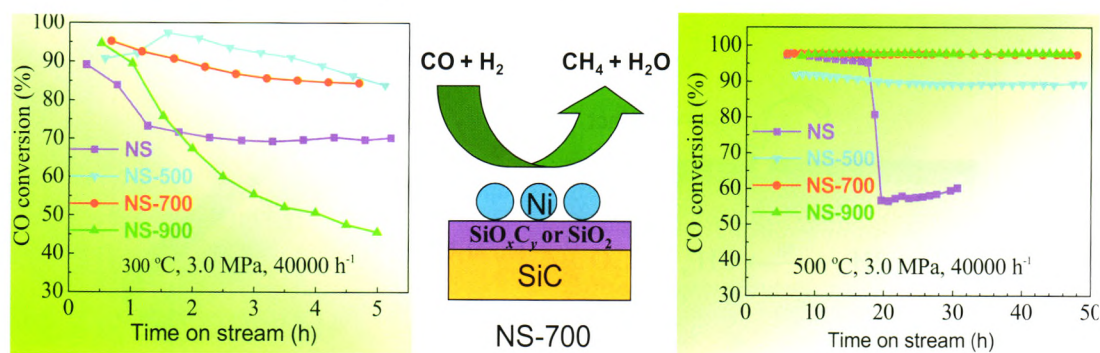
Carbon-supported copper nanocatalysts (Cu/C) were prepared from Cu(NO₃)₂ and starch by the sol-gel method, followed by high temperature carbonization and KOH activation.

Chin. J. Catal., 2013, 34: 1745–1755 doi: 10.1016/S1872-2067(12)60639-1

Effects of the oxidation extent of the SiC surface on the performance of Ni/SiC methanation catalysts

Guoquan Zhang, Jiaxi Peng, Tianjun Sun, Shudong Wang*

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



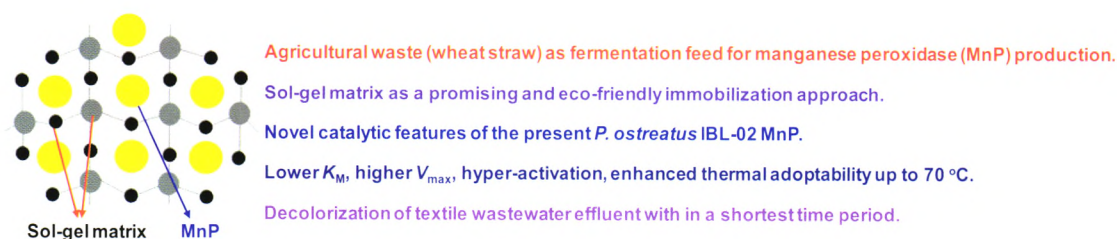
Proper oxidation of SiC can improve low-temperature activity and high-temperature stability of Ni/SiC catalysts by enhanced dispersal of Ni and better anchoring of Ni to the surface oxides.

Chin. J. Catal., 2013, 34: 1756–1761 doi: 10.1016/S1872-2067(12)60647-0

Novel catalytic and effluent decolorization functionalities of sol-gel immobilized *Pleurotus ostreatus* IBL-02 manganese peroxidase produced from bio-processing of wheat straw

Muhammad Asgher, Bazgha Aslam, Hafiz Muhammad Nasir Iqbal*

University of Agriculture, Pakistan



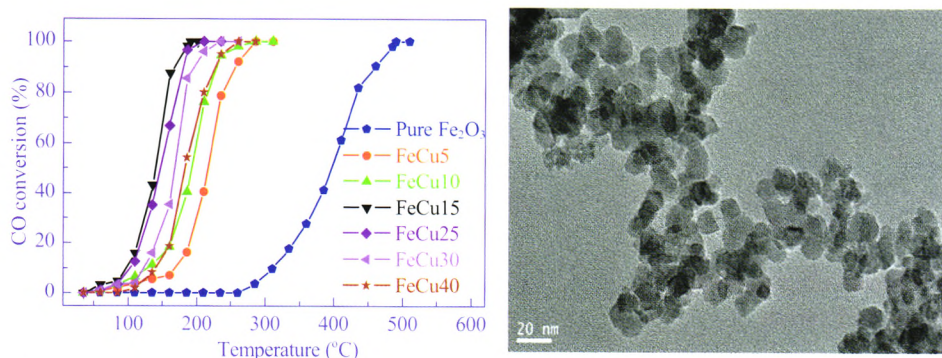
Agro-industrial based lignocellulosic waste material i.e. wheat straw was used as a fermentation feed stuff for MnP production. A promising and eco-friendly approach was adopted to immobilize the purified MnP into the sol-gel matrix network. To explore the textile industrial applicability, the immobilized MnP was tested against real dye containing textile effluents.

Chin. J. Catal., 2013, 34: 1762–1767 doi: 10.1016/S1872-2067(12)60653-6

Low temperature CO oxidation over mesoporous CuFe₂O₄ nanopowders synthesized by a novel sol-gel method

Ehsan Amini, Mehran Rezaei*, Mohammad Sadeghinia

University of Kashan, Iran

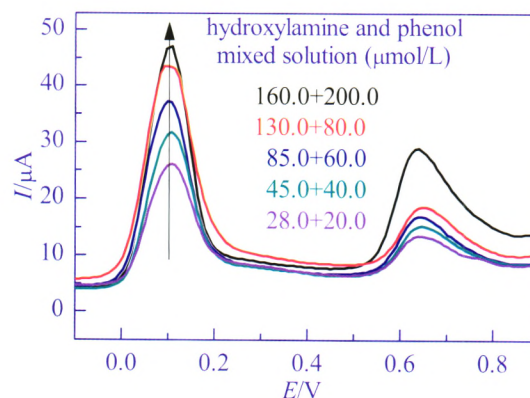


CuFe₂O₄ solid solution nanoparticles were synthesized by a very simple and cheap method. The nanoparticles exhibited good catalytic activity and stability during low temperature CO oxidation.

Chin. J. Catal., 2013, 34: 1768–1775 doi: 10.1016/S1872-2067(12)60652-4

Simultaneous determination of hydroxylamine and phenol using *p*-aminophenol-modified carbon nanotube paste electrodeAli A. Ensafi*, E. Heydari-Bafrooei, B. Rezaei
Isfahan University of Technology, Iran

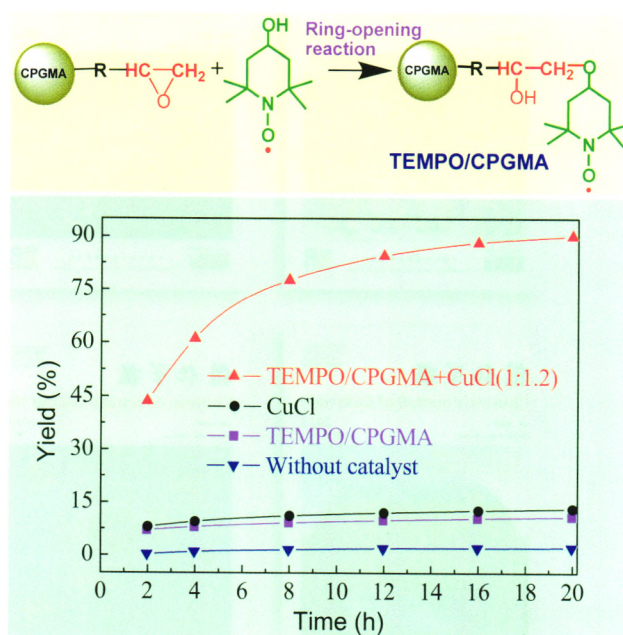
A carbon paste electrode chemically modified with multiwall carbon nanotubes and *p*-aminophenol was prepared and used as a selective electrochemical sensor for the simultaneous determination of hydroxylamine and phenol in water samples.



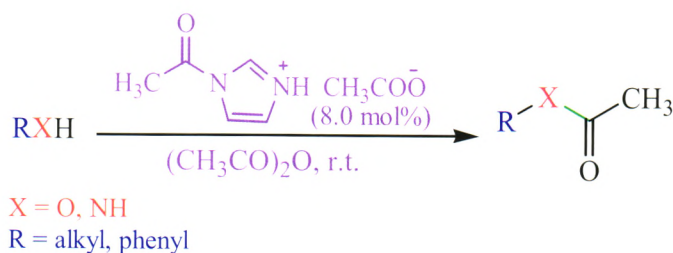
Chin. J. Catal., 2013, 34: 1776–1786 doi: 10.1016/S1872-2067(12)60651-2

Immobilized 2,2,6,6-tetramethyl-piperidiny-1-oxy catalyst on polymer microspheres and its catalytic oxidation of benzyl alcohol with molecular oxygenYiling Yu, Baojiao Gao*, Yanfei Li
North University of China

2,2,6,6-Tetramethyl-piperidiny-1-oxy (TEMPO) was successfully immobilized on crosslinked polymer microspheres containing epoxy groups by the ring opening reaction between the epoxy group on the polymer microspheres and 4-OH-TEMPO, giving immobilized TEMPO/CPGMA microspheres. A co-catalyst system of TEMPO/CPGMA and CuCl efficiently catalyzed the oxidation of benzyl alcohol to benzaldehyde under mild conditions.



Chin. J. Catal., 2013, 34: 1787–1790 doi: 10.1016/S1872-2067(12)60660-3

In situ generated acylimidazolium acetate as an efficient catalyst and acylating agent for the acetylation of alcohols, phenols, and amines at ambient temperatureNajmeh Nowrouzi*, Seyedeh Zahra Alizadeh
Persian Gulf University, Iran

N-acylimidazolium acetate was successfully used as a readily preparable and inexpensive recyclable catalyst for the efficient acetylation of alcohols, phenols, and amines at ambient temperature.