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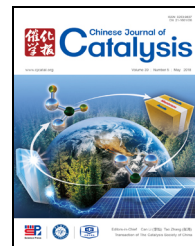
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Chinese Journal of Catalysis

Graphical Contents

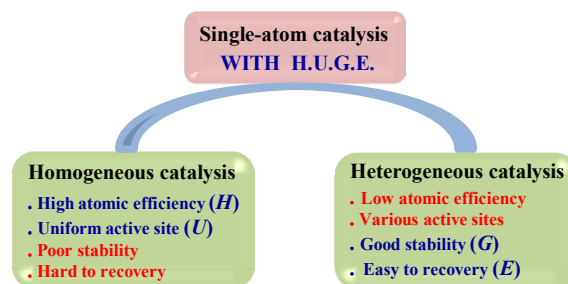
Reviews

Chin. J. Catal., 2018, 39: 893–898 doi: 10.1016/S1872-2067(18)63047-5

Single-atom catalysis: Bridging the homo- and heterogeneous catalysis

Fang Chen, Xunzhu Jiang, Leilei Zhang, Rui Lang, Botao Qiao *
Dalian Institute of Chemical Physics, Chinese Academy of Sciences;
Dalian University of Technology

Several examples demonstrating that single-atom catalysts, with the advantages of both homogeneous catalysts (isolated active sites) and heterogeneous catalysts (stable and easy to separate), can bridge homo- and heterogeneous catalysis.

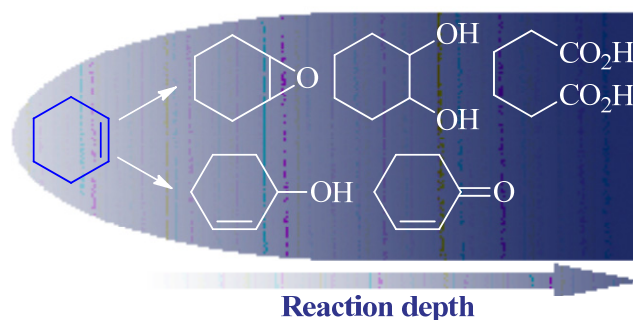


Chin. J. Catal., 2018, 39: 899–907 doi: 10.1016/S1872-2067(18)63050-5

Recent advances on controllable and selective catalytic oxidation of cyclohexene

Hongen Cao, Boran Zhu, Yufan Yang, Lin Xu, Lei Yu *, Qing Xu *
Yangzhou University; Jiangsu Yangnong Chemical Group Co. Ltd.

Recent advances in controllable and selective catalytic oxidation reactions of cyclohexene are reviewed in this paper, and the contents are classified based on the oxidants used in the reaction.



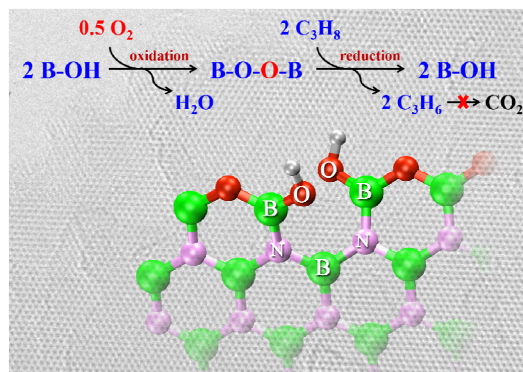
Viewpoint

Chin. J. Catal., 2018, 39: 908–913 doi: 10.1016/S1872-2067(18)63060-8

A viewpoint on catalytic origin of boron nitride in oxidative dehydrogenation of light alkanes

Lei Shi, Dongqi Wang, An-Hui Lu *
Dalian University of Technology;
Institute of High Energy Physics, Chinese Academy of Sciences

This viewpoint illustrates that the B-OH groups at the zig-zag edge of boron nitride could be catalytically active in the ODH reaction of light alkanes by analyzing recent progress in the use of boron nitride for the ODH reaction and presenting much new evidence.

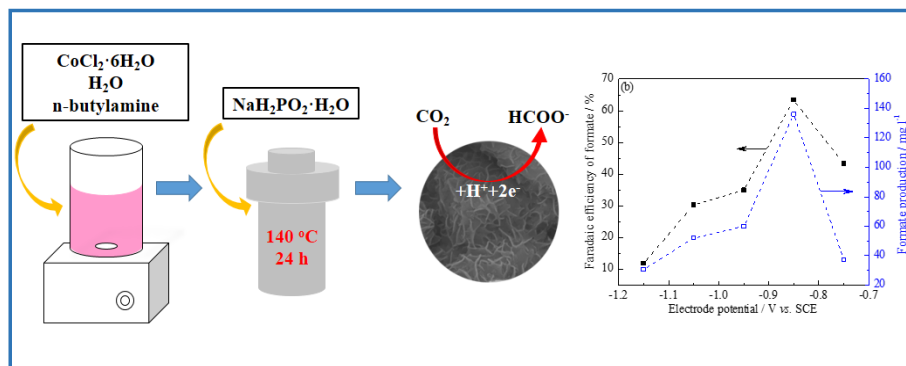


Articles

Chin. J. Catal., 2018, 39: 914–919 doi: 10.1016/S1872-2067(18)63021-9

A highly efficient flower-like cobalt catalyst for electroreduction of carbon dioxide

Gang Yang, Zhipeng Yu, Jie Zhang *, Zhenxing Liang *
South China University of Technology



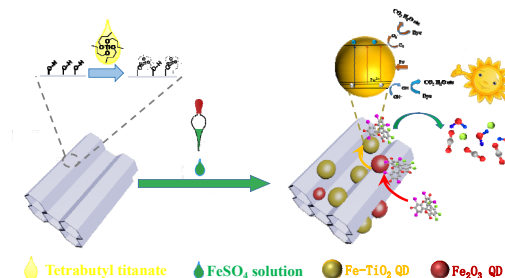
An efficient cobalt catalyst with unique flower-like morphology was synthesized by a facile hydrothermal method, which yielded a superior electrocatalytic activity towards CO₂ electroreduction with a high Faraday efficiency of formate (63.4%).

Chin. J. Catal., 2018, 39: 920–928 doi: 10.1016/S1872-2067(17)62976-0

Fe-TiO₂ and Fe₂O₃ quantum dots co-loaded on MCM-41 for removing aqueous rose bengal by combined adsorption/photocatalysis

Guoqiang Shen, Lun Pan, Zhe Lü, Chongqing Wang, Fazal-e-Aleem, Xiangwen Zhang *, Ji-Jun Zou *
Tianjin University, China;
Collaborative Innovative Center of Chemical Science and Engineering (Tianjin), China;
The University of Lahore, Pakistan

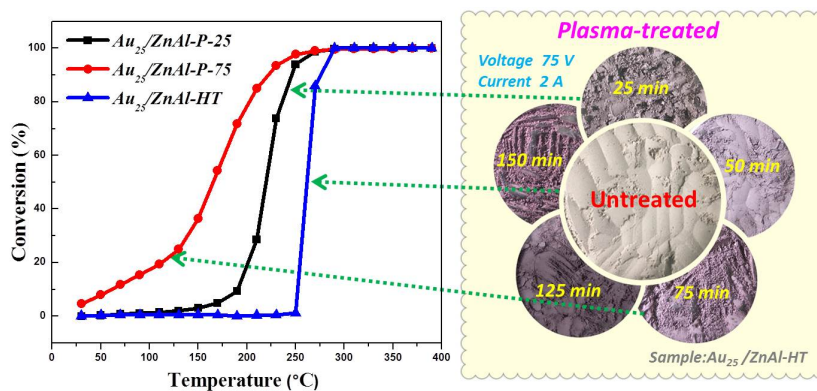
Fe-TiO₂ quantum dots and Fe₂O₃ quantum dots are co-loaded on MCM-41 by direct hydrolysis, which provides synergy between adsorption and photocatalysis and allows the efficient removal of aqueous rose bengal.



Chin. J. Catal., 2018, 39: 929–936 doi: 10.1016/S1872-2067(18)63018-9

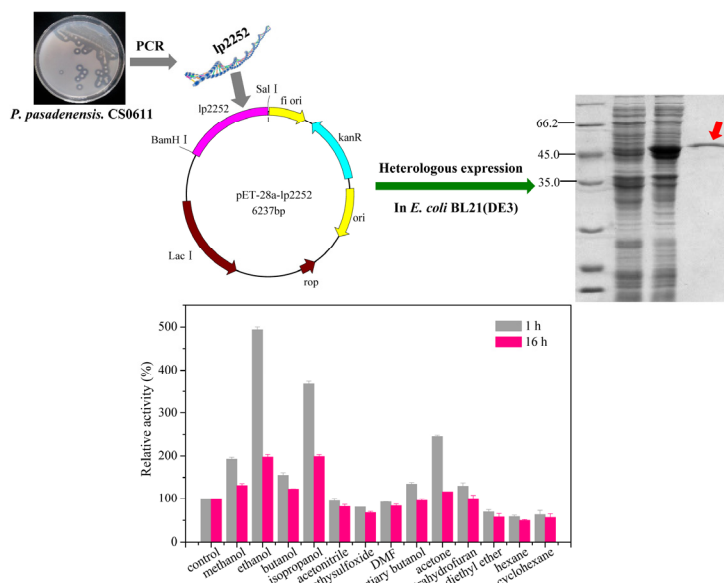
Effective removal of the protective ligands from Au nanoclusters by ambient pressure nonthermal plasma treatment for CO oxidation

Yuan Tan, Hua Liu, Xiao Yan Liu *, Aiqin Wang, Changjun Liu, Tao Zhang
Dalian Institute of Chemical Physics, Chinese Academy of Sciences; University of Chinese Academy of Sciences; Tianjin University



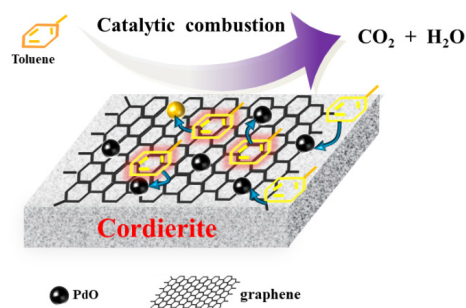
The protective ligands of supported gold nanoclusters could be effectively eliminated via atmospheric pressure non-thermal plasma treatment. This greatly enhanced their catalytic activity for CO oxidation.

Chin. J. Catal., 2018, 39: 937–945 doi: 10.1016/S1872-2067(18)63033-5

Cloning, overexpression, and characterization of a novel organic solvent-tolerant lipase from *Paenibacillus pasadenensis* CS0611Jiaxin Gao, Xiaoyang Ou, Pei Xu, Minhua Zong, Wenyong Lou *
South China University of Technology

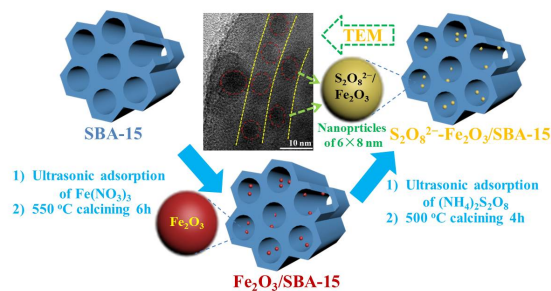
A novel lipase from *Paenibacillus pasadenensis* CS0611 was cloned, expressed, and characterized for the first time. It showed high activity and stability in a range of organic solvents.

Chin. J. Catal., 2018, 39: 946–954 doi: 10.1016/S1872-2067(18)63015-3

The role of graphene coating on cordierite-supported Pd monolithic catalysts for low-temperature combustion of tolueneWen Li, Hongqi Ye, Gonggang Liu, Hongchao Ji, Yonghua Zhou *,
Kai Han *
Central South University

Schematic structure of the Pd/Gr/Cor catalyst and tentative processes of the catalytic combustion of toluene over the Pd/Gr/Cor catalyst as illustrated. The graphene coating plays important roles during the catalytic combustion of toluene.

Chin. J. Catal., 2018, 39: 955–963 doi: 10.1016/S1872-2067(17)63007-9

Enhancement of catalytic activity by homo-dispersing S₂O₈²⁻-Fe₂O₃ nanoparticles on SBA-15 through ultrasonic adsorptionQingyan Chu, Jing Chen, Wenhua Hou *, Haoxuan Yu, Ping Wang,
Rui Liu, Guangliang Song, Hongjun Zhu *, Pingping Zhao
Nanjing Tech University;
Research institute of QILU petrochemical company, SINOPEC;
Nanjing University; Shandong University of Technology

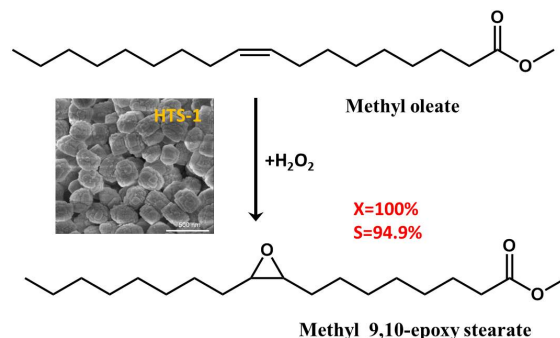
Mesoporous superacids S₂O₈²⁻-Fe₂O₃/SBA-15 with active nanoparticles are prepared by ultrasonic adsorption. TEM images show S₂O₈²⁻-Fe₂O₃ nanoparticles of approximately 6 × 8 nm are uniformly distributed in the inner mesoporous channels of SBA-15.

Chin. J. Catal., 2018, 39: 964–972 doi: 10.1016/S1872-2067(18)63014-1

Green and efficient epoxidation of methyl oleate over hierarchical TS-1

Yue Wei, Gang Li*, Qiang Lü, Chuanying Cheng, Hongchen Guo
Dalian University of Technology

A high conversion of methyl oleate with H_2O_2 as a green oxidant was achieved using HTS-1 templated with polyquaternium-6.

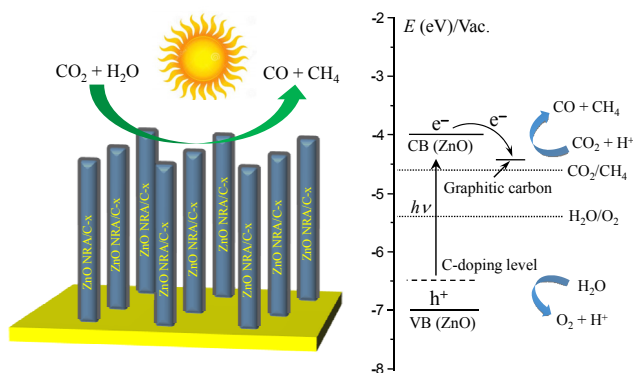


Chin. J. Catal., 2018, 39: 973–981 doi: 10.1016/S1872-2067(18)63010-4

Enhancing the photocatalytic activity and photostability of zinc oxide nanorod arrays via graphitic carbon mediation

Xuwei Zhang, Xuiliang Zhang, Xin Wang, Lequan Liu, Jinhua Ye, Defa Wang*
Tianjin University, China;
Collaborative Innovation Center of Chemical Science and Engineering (Tianjin), China;
National Institute for Materials Science, Japan

Graphitic-carbon-mediated ZnO nanorod arrays (NRAs) are fabricated by calcining pre-synthesized ZnO NRAs with different amounts of glucose as a carbon source, via a hydrothermal method. The resulting nanohybrids exhibit enhanced photocatalytic activity and photostability for CO_2 reduction under visible light irradiation.

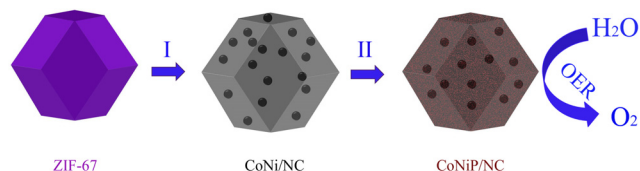


Chin. J. Catal., 2018, 39: 982–987 doi: 10.1016/S1872-2067(18)63030-X

CoNiP/NC polyhedrons derived from cobalt-based zeolitic imidazolate frameworks as an active electrocatalyst for oxygen evolution

Jintang Li*, Guiqing Du, Xian Cheng, Pingjing Feng, Xuetao Luo
Xiamen University

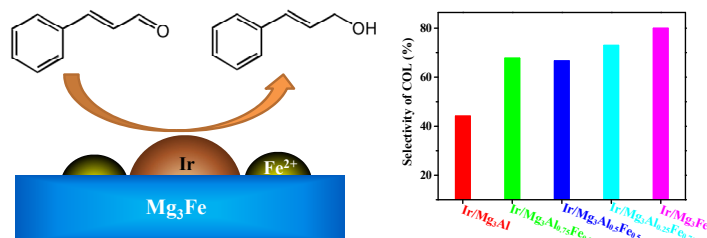
Schematic diagram to illustrate the OER catalytic principles on CoNiP/NC polyhedrons. Step I: transformation of ZIF-67 into CoNi/NC by a facile etching and deposition process and carbonization; Step II: formation of CoNiP/NC by phosphatizing CoNi/NC.



Chin. J. Catal., 2018, 39: 988–996 doi: 10.1016/S1872-2067(18)63042-6

Layered double hydroxide-like $\text{Mg}_3\text{Al}_{1-x}\text{Fe}_x$ materials as supports for Ir catalysts: Promotional effects of Fe doping in selective hydrogenation of cinnamaldehyde

Weiwei Lin, Haiyang Cheng*, Xiaoru Li, Chao Zhang, Fengyu Zhao, Masahiko Arai
Changchun Institute of Applied Chemistry, Chinese Academy of Sciences



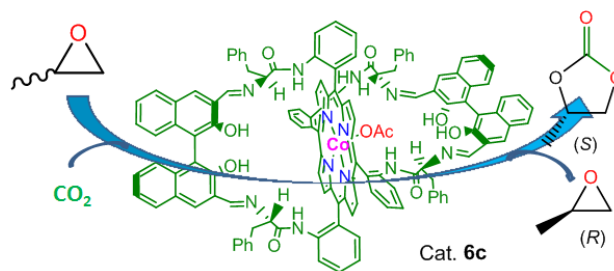
The doping of Fe to Ir/Mg₃Al could improve its activity and selectivity in cinnamaldehyde hydrogenation owing to the electronic interaction of Fe–Ir and the change in the geometrical structure of Ir active species.

Chin. J. Catal., 2018, 39: 997–1003 doi: 10.1016/S1872-2067(18)63023-2

Chiral basket-handle porphyrin-Co complexes for the catalyzed asymmetric cycloaddition of CO₂ to epoxides

Xiying Fu, Xinyao Jing, Lili Jin, Lilong Zhang, Xiaofeng Zhang,
Bin Hu*, Huanwang Jing*
*Lanzhou University; China Pharmaceutical University;
Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences;
Institute of Coal Chemistry, Chinese Academy of Sciences*

Novel C₂ symmetric chiral basket-handle cobalttoporphyrin complexes are synthesized and applied as catalysts for the asymmetric cycloaddition of CO₂ to propylene oxide, yielding relevant chiral propylene carbonate with good enantioselectivity.

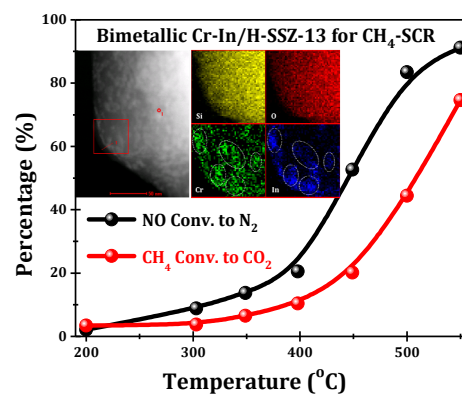


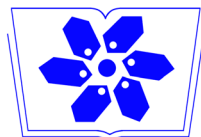
Chin. J. Catal., 2018, 39: 1004–1011 doi: 10.1016/S1872-2067(18)63054-2

Bimetallic Cr-In/H-SSZ-13 for selective catalytic reduction of nitric oxide by methane

Jun Yang, Yupeng Chang, Weili Dai, Guangjun Wu, Naijia Guan,
Landong Li*
Nankai University

The bimetallic Cr-In/H-SSZ-13 catalyst exhibited appreciable reactivity and hydrothermal stability in the CH₄-SCR process.





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