

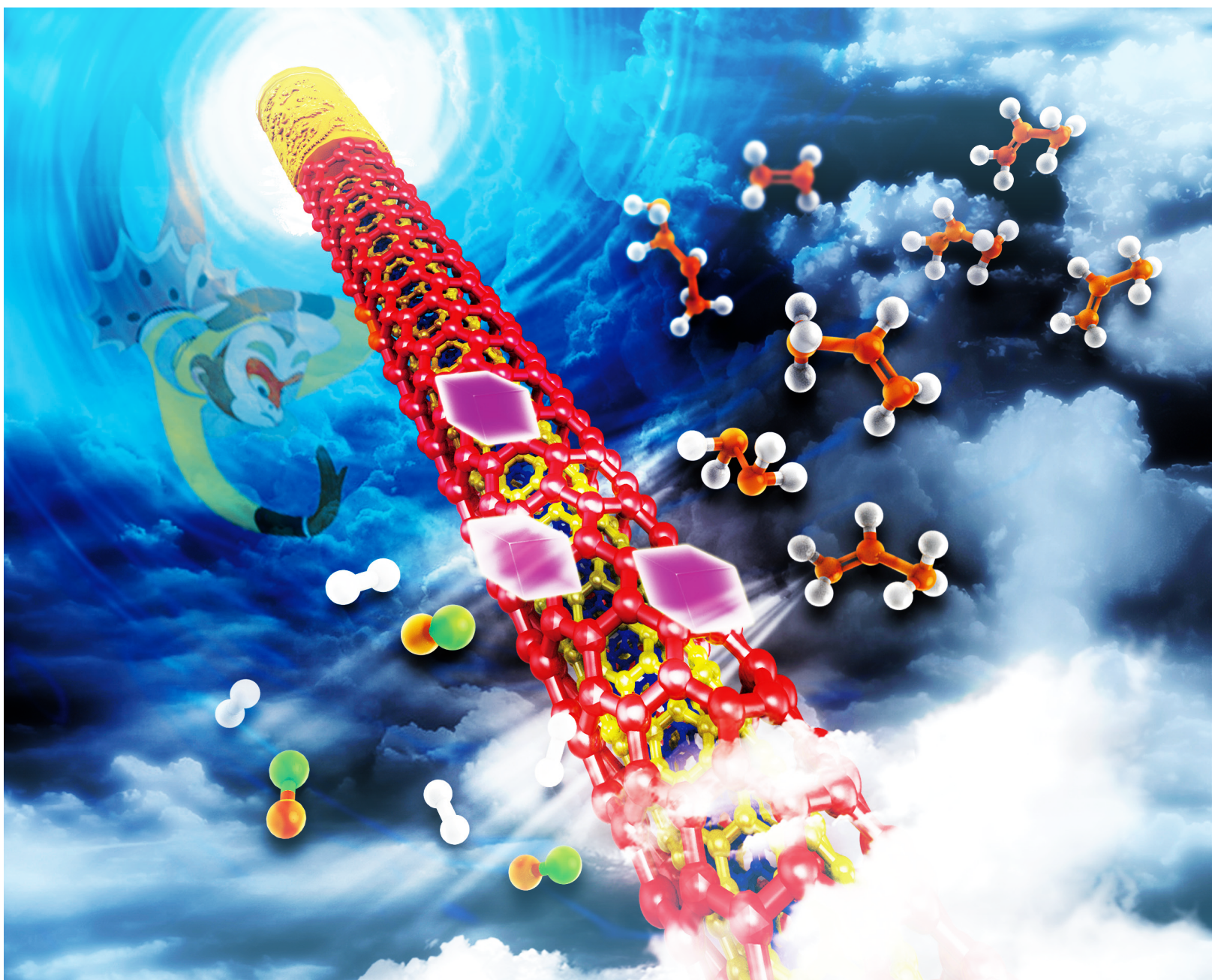
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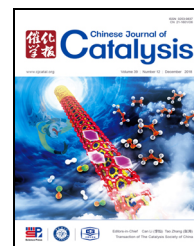
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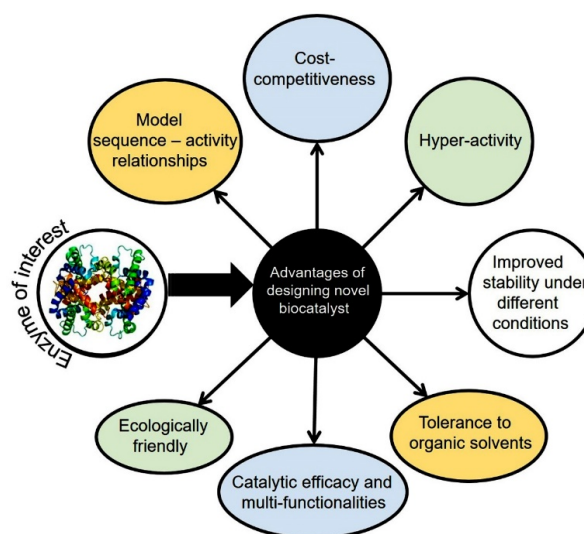
Review

Chin. J. Catal., 2018, 39: 1861–1868 doi: 10.1016/S1872-2067(18)63144-4

Advancements in biocatalysis: From computational to metabolic engineering

Aqib Zafar Khan, Muhammad Bilal *, Tahir Rasheed,
Hafiz M. N. Iqbal *
Shanghai Jiao Tong University, China;
Huaiyin Institute of Technology, China;
Tecnologico de Monterrey, Mexico

Designing novel biocatalysts with high-values and applied perspectives for different industrial and medicinal sectors is a pursuit central to modern industry. Herein, we highlight the role of synthetic biology and metabolic engineering in bio-catalysis.

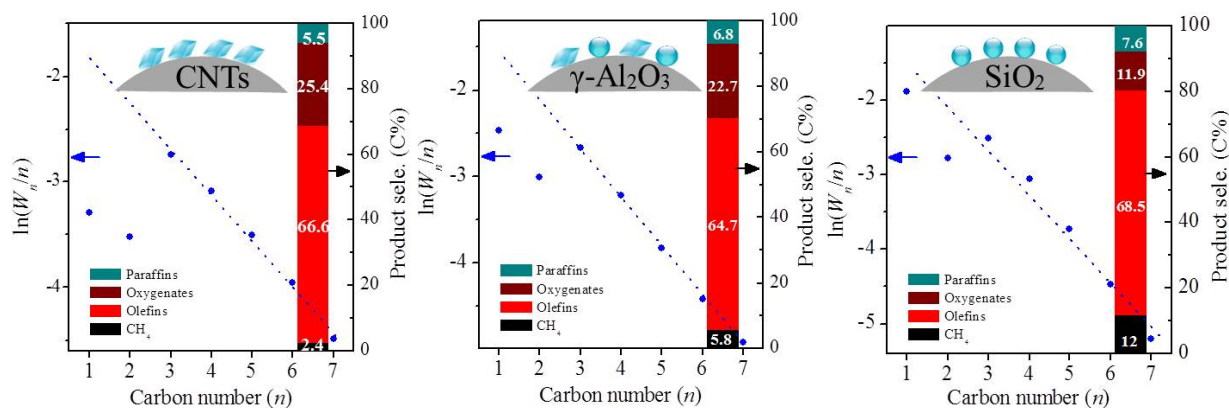


Articles

Chin. J. Catal., 2018, 39: 1869–1880 doi: 10.1016/S1872-2067(18)63153-5

Effect of the support on cobalt carbide catalysts for sustainable production of olefins from syngas

Xinxing Wang, Wen Chen, Tiejun Lin, Jie Li, Fei Yu, Yunlei An, Yuanyuan Dai, Hui Wang, Liangshu Zhong *, Yuhan Sun
Shanghai Advanced Research Institute, Chinese Academy of Sciences; University of Chinese Academy of Sciences; ShanghaiTech University



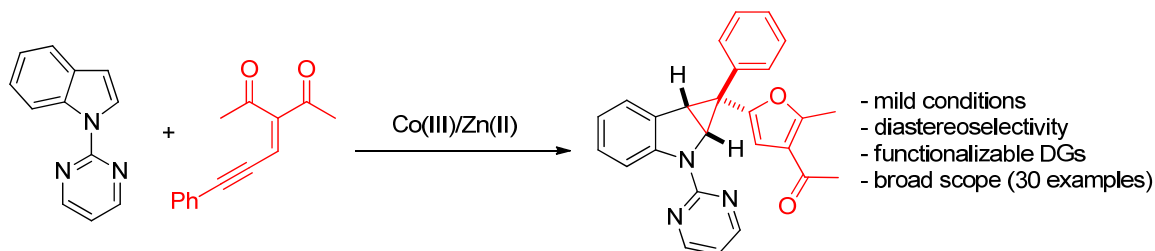
The cobalt-support interaction has a great impact on the Co₂C morphology and catalytic performance of the Fischer-Tropsch to olefin reaction.

Chin. J. Catal., 2018, 39: 1881–1889 doi: 10.1016/S1872-2067(18)63154-7

Co(III)/Zn(II)-catalyzed dearomatization of indoles and coupling with carbenes from ene-yne ketones via intramolecular cyclopropanation

Na Li, Junbiao Chang*, Lingheng Kong, Shuangjing Wang, Dandan Wang, Miao Cheng, Xingwei Li*

Henan Normal University; Xinxiang Medical University; Dalian Institute of Chemical Physics, Chinese Academy of Sciences



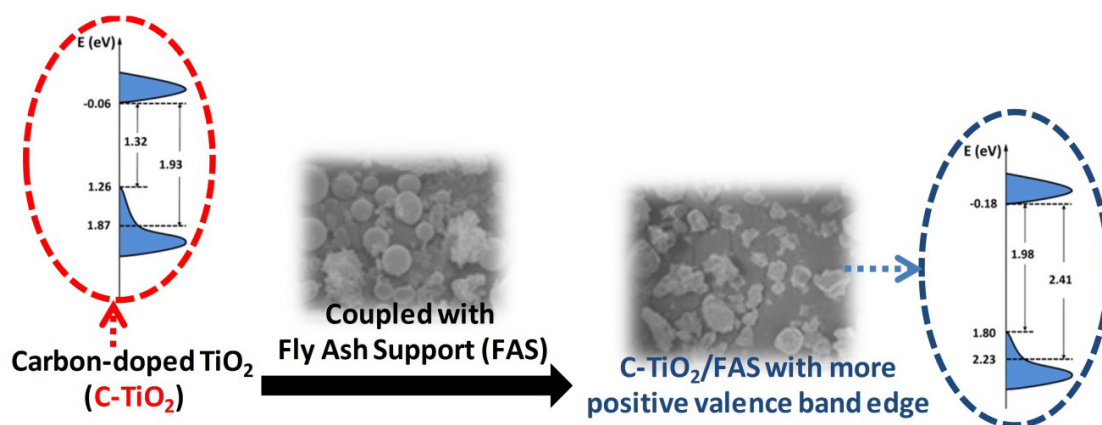
A straightforward and efficient protocol for dearomatizing indoles is described. The reaction, catalyzed by an inexpensive Co(III)/Zn(II) catalyst, starts from conveniently accessible *N*-pyrimidinyl indoles and ene-yne ketones. Mild reaction conditions, high diastereoselectivity, a broad substrate scope, reasonable functional group tolerance, and reasonable to remarkable yields were observed.

Chin. J. Catal., 2018, 39: 1890–1900 doi: 10.1016/S1872-2067(18)63152-3

Enhanced visible-light photocatalytic oxidation capability of carbon-doped TiO₂ via coupling with fly ash

Ning An, Yuwei Ma, Juming Liu*, Huiyan Ma, Jucai Yang, Qiancheng Zhang*

Inner Mongolia University of Technology; University of Science and Technology Beijing



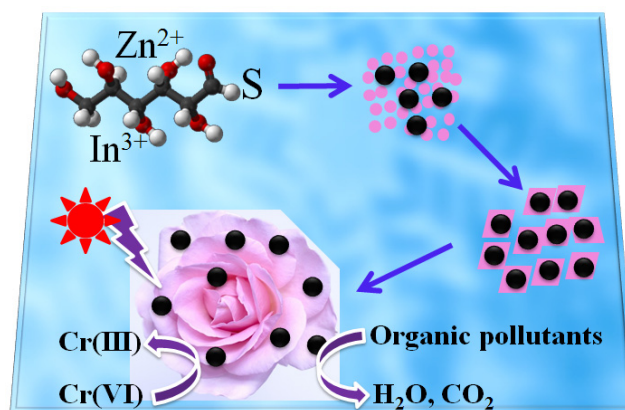
The coupling between C-TiO₂ and FAS led to a positive shift of the valence band edge of C-TiO₂, enhancing its oxidation capability of photo-generated holes and improving its methyl orange photodegradation efficiency.

Chin. J. Catal., 2018, 39: 1901–1909 doi: 10.1016/S1872-2067(18)63137-7

ZnIn₂S₄ flowerlike microspheres embedded with carbon quantum dots for efficient photocatalytic reduction of Cr(VI)

Baibai Liu, Xinjuan Liu*, Lei Li, Jianwei Li, Can Li, Yinyan Gong, Lengyuan Niu, Xinsheng Zhao, Chang Q. Sun
China Jiliang University, China;
Yangtze Normal University, China;
Jiangsu Normal University, China;
Nanyang Technological University, Singapore

ZnIn₂S₄/carbon quantum dot hybrid photocatalysts display excellent visible-light catalytic activity for the reduction of Cr(VI) with a reduction rate of 93%.

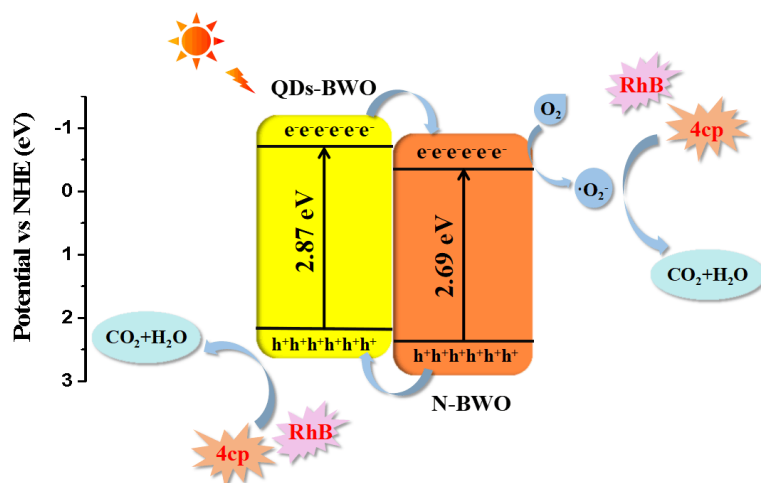


Chin. J. Catal., 2018, 39: 1910–1918 doi: 10.1016/S1872-2067(18)63140-7

Fabrication of Bi₂WO₆ quantum dots/ultrathin nanosheets 0D/2D homojunctions with enhanced photocatalytic activity under visible light irradiation

Jingjing Xu *, Junpeng Yue, Junfeng Niu, Mindong Chen, Fei Teng

Nanjing University of Information Sciences and Technology; Dongguan University of Technology



Bi₂WO₆ quantum dots and Bi₂WO₆ nanosheets form a unique zero-dimensional (0D)/two-dimensional (2D) homojunction. This structure promotes the transfer and separation of photogenerated electron-hole pairs, which greatly enhances the photocatalytic activity.

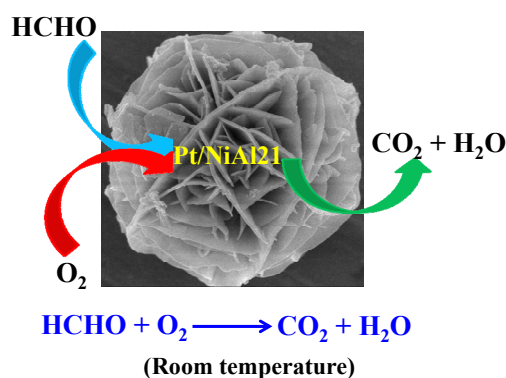
Chin. J. Catal., 2018, 39: 1919–1928 doi: 10.1016/S1872-2067(18)63143-2

Hierarchical Ni–Al hydrotalcite supported Pt catalyst for efficient catalytic oxidation of formaldehyde at room temperature

Zhaoxiong Yan, Zhihua Xu *, Lin Yue, Ling Shi, Lingyong Huang *

Jiangnan University; Huanggang Normal University

Ni–Al hydrotalcite supported Pt catalyst (Pt/NiAl₂) showed an excellent activity toward room-temperature decomposition of HCHO into CO₂ and H₂O due to its plenty of reactive surface oxygen species and unique flower-like structure.

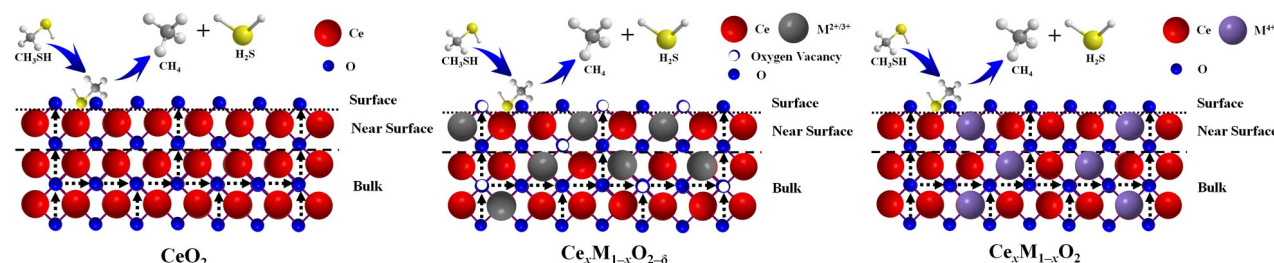


Chin. J. Catal., 2018, 39: 1929–1941 doi: 10.1016/S1872-2067(18)63146-8

Relationship between oxygen species and activity/stability in heteroatom (Zr, Y)-doped cerium-based catalysts for catalytic decomposition of CH₃SH

Dingkai Chen, Dehua Zhang *, Dedong He, Jichang Lu, Liping Zhong, Caiyun Han, Yongming Luo *

Kunming University of Science and Technology

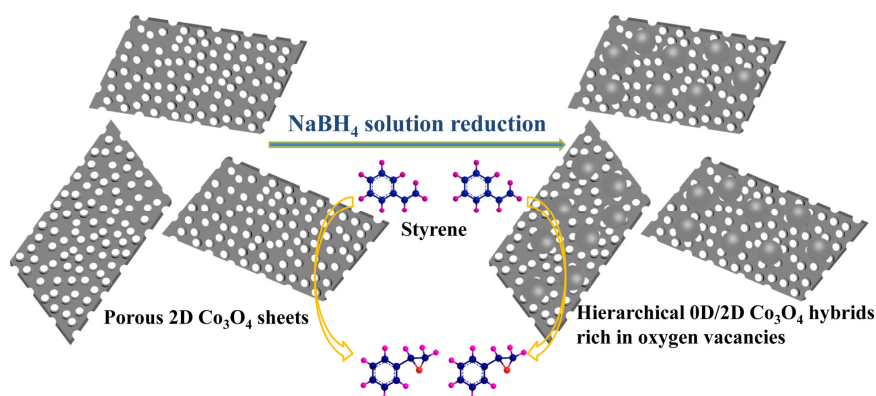


Surface lattice oxygen plays a key role in decomposing CH₃SH. Oxygen vacancies promote bulk lattice oxygen migration. The valence difference between the doped ions affects the catalytic behavior.

Chin. J. Catal., 2018, 39: 1942–1950 doi: 10.1016/S1872-2067(18)63133-X

Hierarchical 0D/2D Co₃O₄ hybrids rich in oxygen vacancies as catalysts towards styrene epoxidation reaction

Jiangyong Liu*, Tingting Chen, Panming Jian, Lixia Wang
Yangzhou University

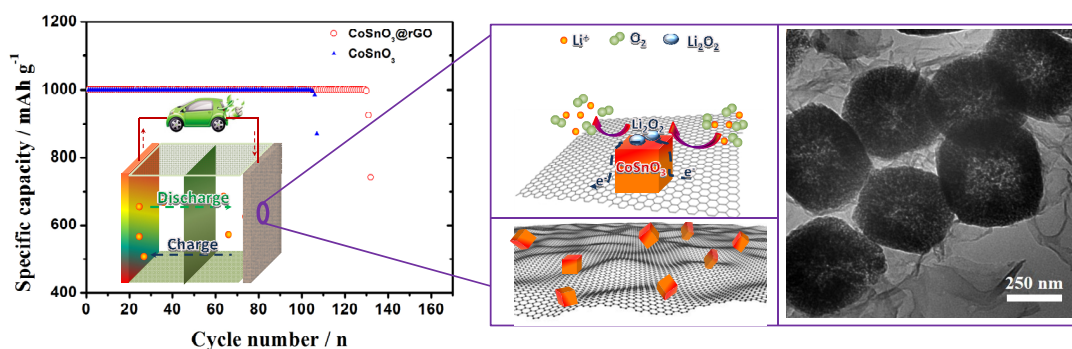


The hierarchical 0D/2D Co₃O₄ hybrids rich in oxygen vacancies exhibit a much better catalytic performance than the Co₃O₄ sheets in the styrene epoxidation reaction, with the yield of styrene oxide more than doubled.

Chin. J. Catal., 2018, 39: 1951–1959 doi: 10.1016/S1872-2067(18)63155-9

Amorphous CoSnO₃@rGO nanocomposite as an efficient cathode catalyst for long-life Li-O₂ batteries

Guanghui Yue*, Jiandi Liu, Jiangtao Han, Donghui Qin, Qiang Chen*, Jianxiong Shao
Xiamen University; Lanzhou University



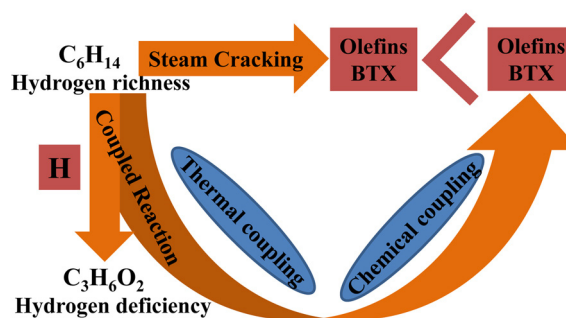
Amorphous CoSnO₃ nanoboxes intertwined with the rGO as the highly efficient cathode catalyst for the Li-O₂ batteries to reduce the overpotential and improve the cycling performance.

Chin. J. Catal., 2018, 39: 1960–1970 doi: 10.1016/S1872-2067(18)63147-X

Investigation of the coupled reaction of methyl acetate and *n*-hexane over HZSM-5

Kuo Yang, Jinzhe Li, Xiao Zhang*, Zhongmin Liu*
Dalian Institute of Chemical Physics, Chinese Academy of Sciences; China University of Petroleum;
University of Chinese Academy of Sciences

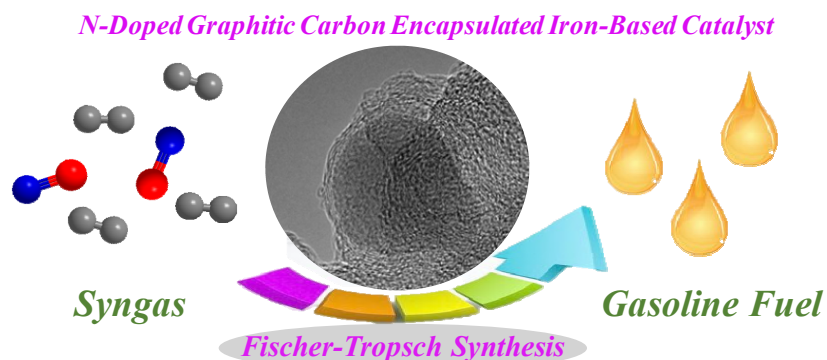
The coupling of methyl acetate (hydrogen-deficient) and *n*-hexane (hydrogen-rich) not only exhibits thermal coupling but also chemical coupling, whereby the product distribution is improved compared to the catalytic cracking of individual *n*-hexane.



Chin. J. Catal., 2018, 39: 1971–1979 doi: 10.1016/S1872-2067(18)63158-4

Iron-based catalysts encapsulated by nitrogen-doped graphitic carbon for selective synthesis of liquid fuels through the Fischer-Tropsch process

Lei Tang, Xiao-Ling Dong, Wei Xu, Lei He, An-Hui Lu *
Dalian University of Technology



The catalyst consisting of iron nanoparticles encapsulated by nitrogen-doped graphitic carbon exhibits excellent catalytic activity, high gasoline-range hydrocarbon selectivity, and good stability.

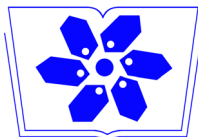
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1960

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杨阔, 李金哲, 张潇, 刘中民

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