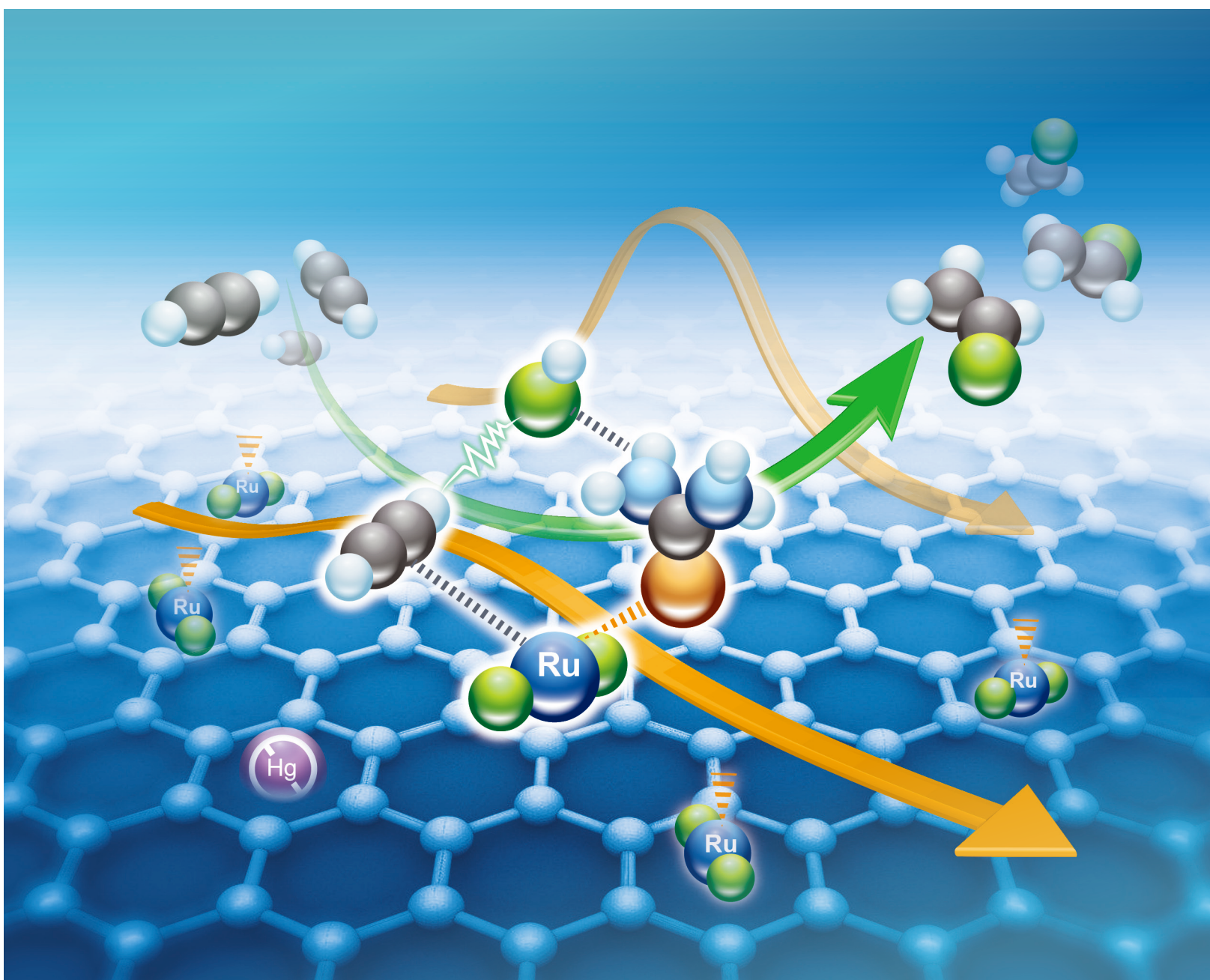




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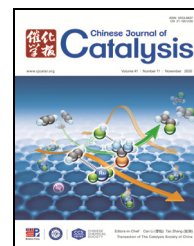
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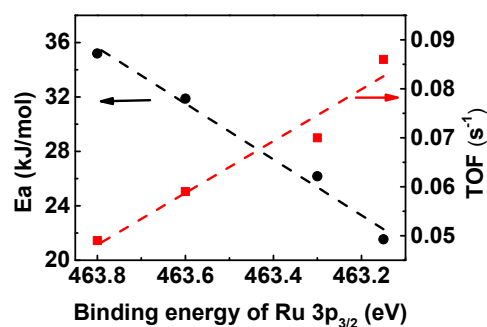
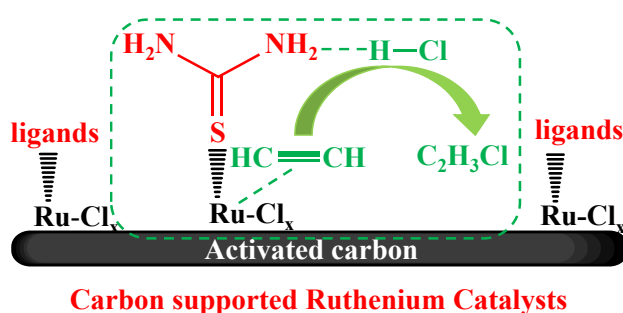
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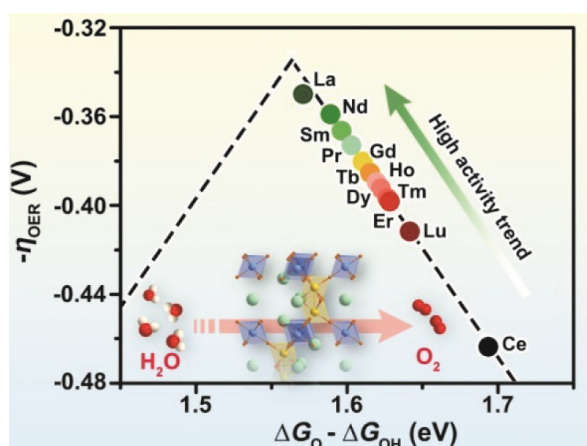
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Articles

Chin. J. Catal., 2020, 41: 1683–1691 doi: 10.1016/S1872-2067(20)63616-6**Carbon-supported ruthenium catalysts prepared by a coordination strategy for acetylene hydrochlorination**Xiaolong Wang, Guojun Lan, Zaizhe Cheng, Wenfeng Han, Haodong Tang, Huazhang Liu, Ying Li *
Institute of Industrial Catalysis, Zhejiang University of Technology

Controllable regulation of electronic structure of Ru/C catalyst with high activity and stability for acetylene hydrochlorination by a simple coordination strategy. The TOF value and activated energy has a linear relationship with binding energy of ruthenium ions.

Chin. J. Catal., 2020, 41: 1692–1697 doi: 10.1016/S1872-2067(20)63628-2**Lanthanide-regulated oxygen evolution activity of face-sharing IrO₆ dimers in 6H-perovskite electrocatalysts**Weiqiang Feng, Hui Chen, Qi Zhang, Ruiqin Gao, Xiaoxin Zou *
Jilin University

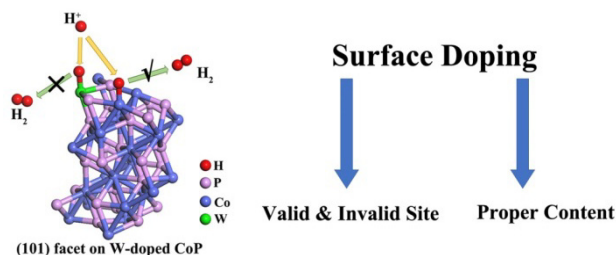
A family of lanthanide-contained, 6H-perovskites are investigated theoretically as electrocatalysts for OER in acid. The face-shared Ir₂O₉ octahedral dimers in this class of 6H-perovskites are the active subunits for OER, and their catalytic activities can be regulated by the lanthanide-containing octahedra.

Chin. J. Catal., 2020, 41: 1698–1705 doi: 10.1016/S1872-2067(20)63622-1

First-principles study of catalytic activity of W-doped cobalt phosphide toward the hydrogen evolution reaction

Cehuang Fu, Xiaohui Yan, Lijun Yang, Shuiyun Shen, Liuxuan Luo, Guanghua Wei, Junliang Zhang *
Shanghai Jiao Tong University; Nanjing University

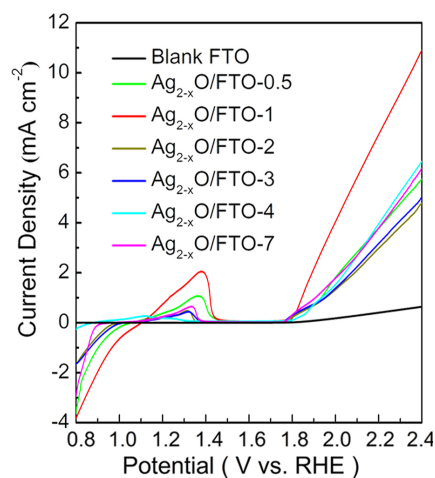
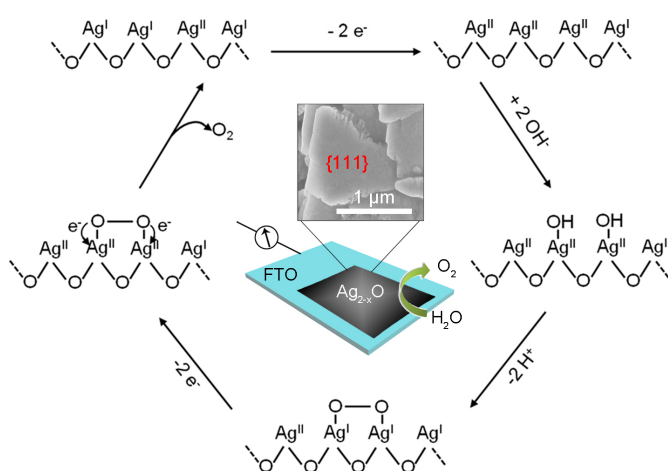
There are two kinds of Co on surface, which are marked as valid site and invalid site according to different adsorption ability. W-doping decreases the d band center of Co. 8.4 wt% at invalid Co site is desired for surface doping and 16.8 wt% is preferred when W is inserted into subsurface by HER.



Chin. J. Catal., 2020, 41: 1706–1714 doi: 10.1016/S1872-2067(20)63574-4

Ag_{2-x}O with highly exposed {111} crystal facets for efficient electrochemical oxygen evolution: Activity and mechanism

Xiao-Feng Zhang, Jian-Sheng Li *, Wan-Sheng You *, Zai-Ming Zhu
Liaoning Normal University

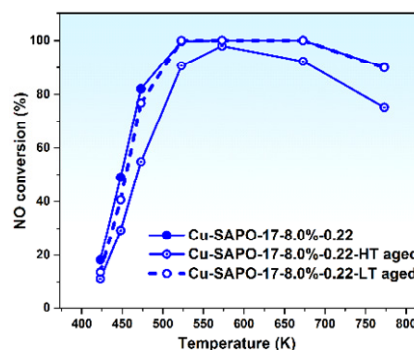
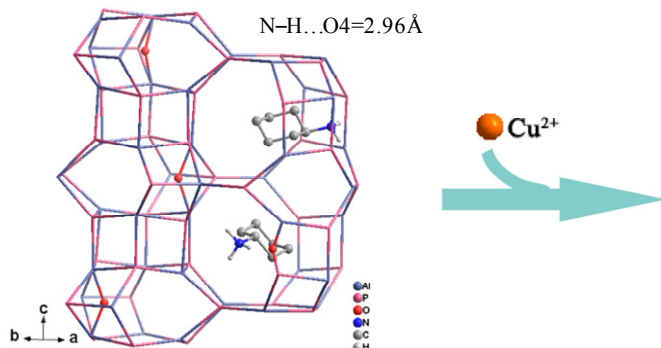


A series of Ag_{2-x}O/FTO-*i* (*i* = 0.5, 1, 2, 3, 4, 7) electrodes were fabricated. The results from studies on the activity and mechanism of one electrode (Ag_{2-x}O/FTO-1) with unusually large and well-exposed {111} crystal facets and production of Ag²⁺ showed more efficient electrochemical oxygen evolution.

Chin. J. Catal., 2020, 41: 1715–1722 doi: 10.1016/S1872-2067(20)63609-9

Cu-SAPO-17: A novel catalyst for selective catalytic reduction of NO_x

Xiaona Liu, Yi Cao, Nana Yan, Chao Ma, Lei Cao, Peng Guo *, Peng Tian *, Zhongmin Liu *
Dalian Institute of Chemical Physics, Chinese Academy of Sciences; University of Chinese Academy of Sciences; Ningbo University; Dalian University of Technology

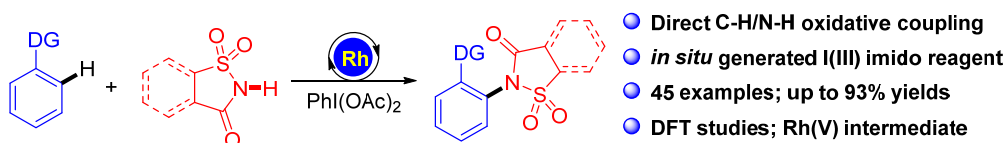


Cu-SAPO-17 was utilized as a novel NH₃-SCR catalyst for the first time, which shows promising low- and high- temperature hydrothermal stabilities. The possible Cu²⁺ sites were further deduced from Rietveld refinement results.

Chin. J. Catal., 2020, 41: 1723–1733 doi: 10.1016/S1872-2067(20)63587-2

Rhodium(III)-catalyzed chelation-assisted C–H imidation of arenes via umpolung of the imidating reagent

Guangfan Zheng, Jiaqiong Sun, Youwei Xu, Xukai Zhou, Hui Gao *, Xingwei Li *
 Shaanxi Normal University; Guangzhou Medical University;
 Dalian Institute of Chemical Physics, Chinese Academy of Sciences

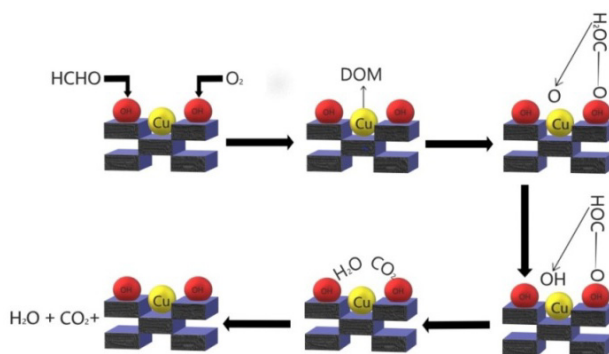


Rh(III)-catalyzed oxidative C–H imidation of arenes has been realized via umpolung of saccharin using PhI(OAc)₂ as an oxidant. The reaction features a wide scope of substrate and operational simplicity. DFT studies suggest that the C–N coupling occurs via a Rh(III)-Rh(V)-Rh(III) cycle.

Chin. J. Catal., 2020, 41: 1734–1744 doi: 10.1016/S1872-2067(20)63599-9

Sodium-treated sepiolite-supported transition metal (Cu, Fe, Ni, Mn, or Co) catalysts for HCHO oxidation

Ning Dong, Qing Ye *, Mengyue Chen, Shuiyuan Cheng, Tianfang Kang, Hongxing Dai *
 Beijing University of Technology

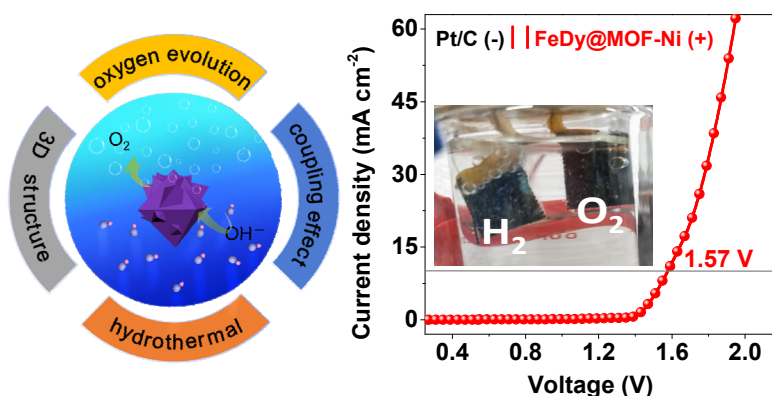


Among the TM/NaSep (TM = Cu, Fe, Mn, Ni, Co) catalysts, Cu/NaSep exhibited the highest catalytic activity towards the oxidation of HCHO, due to high acidity, favorable reducibility, and the presence of adsorbed oxygen species.

Chin. J. Catal., 2020, 41: 1745–1753 doi: 10.1016/S1872-2067(20)63606-3

Dissolution-regrowth of hierarchical Fe-Dy oxide modulates the electronic structure of nickel-organic frameworks as highly active and stable water splitting electrocatalysts

Zixia Wan, Qiuting He, Jundan Chen, Tayirjan Taylor Isimjan *, Bao Wang *, Xiulin Yang *
 Guangxi Normal University

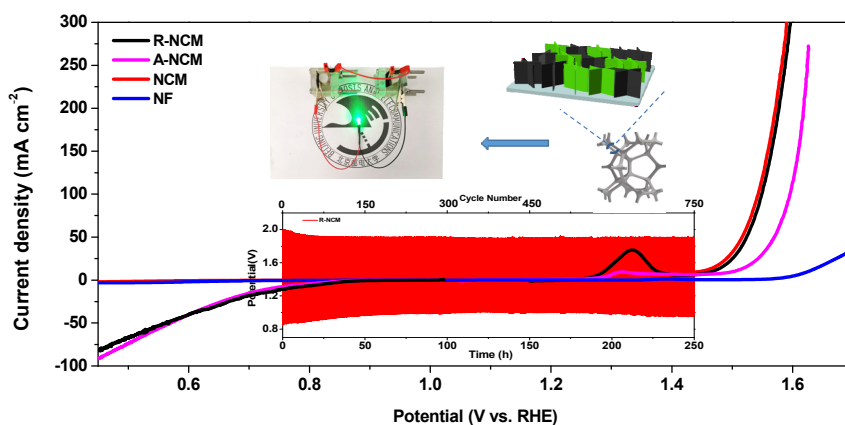


Hierarchical Fe-Dy oxide co-regulated MOF-Ni on carbon cloth was fabricated by a facile two-step hydrothermal method. The resulting catalyst exhibited highly active and stable oxygen evolution for the overall water splitting reaction in alkaline media.

Chin. J. Catal., 2020, 41: 1754–1760 doi: 10.1016/S1872-2067(20)63613-0

Two-dimensional MOF/MOF derivative arrays on nickel foam as efficient bifunctional coupled oxygen electrodes

Kai Huang *, Shuai Guo, Ruyue Wang, Sen Lin, Naveed Hussain, Hehe Wei, Bohan Deng, Yuanzheng Long, Ming Lei *, Haolin Tang *, Hui Wu
Beijing University of Posts and Telecommunications; Tsinghua University; Wuhan University of Technology

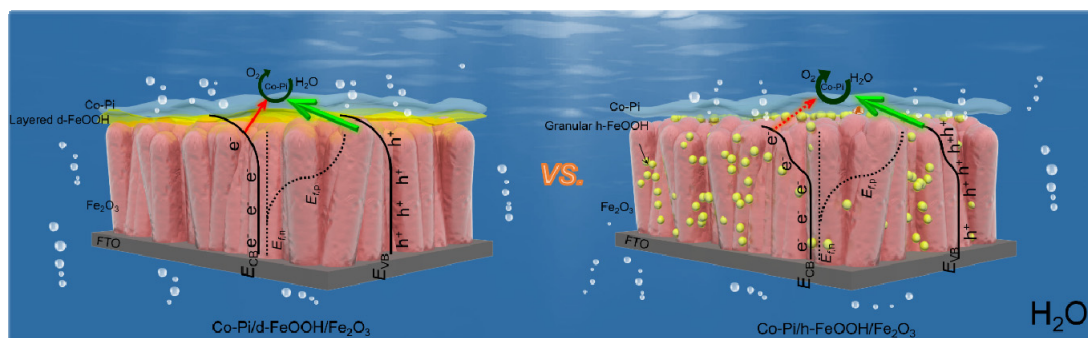


Two-dimensional MOF/MOF derivative coupled arrays grown on nickel foam display outstanding OER and ORR performance and potential energy storage capabilities. For example, R-NCM catalyzed zinc-air series batteries can power a green LED indicator.

Chin. J. Catal., 2020, 41: 1761–1771 doi: 10.1016/S1872-2067(20)63618-X

Functional principle of the synergistic effect of co-loaded Co-Pi and FeOOH on Fe₂O₃ photoanodes for photoelectrochemical water oxidation

Jingran Xiao *, Longlong Fan, Zhongliang Huang, Jun Zhong, Feigang Zhao, Kaiji Xu, Shu-Feng Zhou, Guowu Zhan *
Huaqiao University



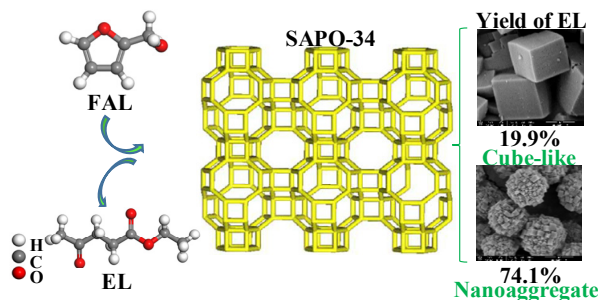
Layered d-FeOOH and granular h-FeOOH play different roles when working synergistically with Co-Pi to reduce the onset potential of Fe₂O₃ photoanodes. A strong synergistic effect is achieved by combining h-FeOOH and Co-Pi.

Chin. J. Catal., 2020, 41: 1772–1781 doi: 10.1016/S1872-2067(20)63604-X

Low-cost synthesis of nanoaggregate SAPO-34 and its application in the catalytic alcoholysis of furfuryl alcohol

Qianqian Guo, Fan Yang, Xiaohui Liu *, Mengqing Sun, Yong Guo, Yanqin Wang
East China University of Science of Technology

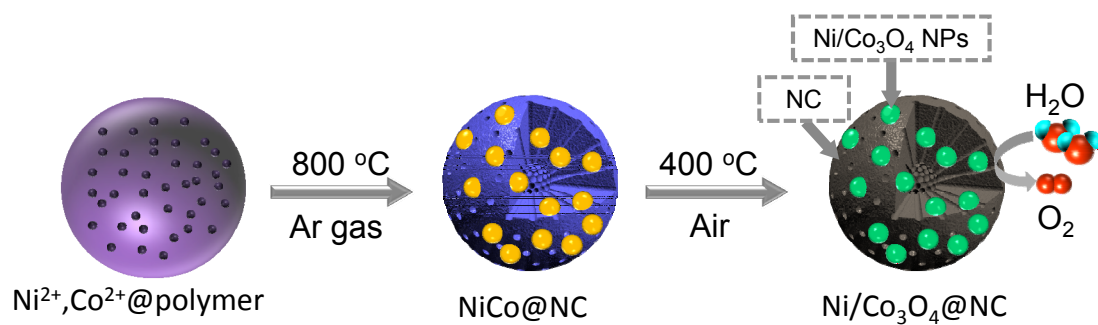
In a comparison with cube-like SAPO-34, nanoaggregate SAPO-34 was synthesized by a low-cost hydrothermal method and yielded more ethyl levulinate from furfuryl alcohol. The larger external surface area and greater number of external surface acid sites are helpful for improving the catalytic performance and avoiding coke deposition.



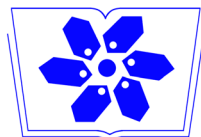
Chin. J. Catal., 2020, 41: 1782–1789 doi: 10.1016/S1872-2067(20)63621-X

Synergistic effect of metallic nickel and cobalt oxides with nitrogen-doped carbon nanospheres for highly efficient oxygen evolution

Bin Dong *, Jing-Yi Xie, Zhi Tong, Jing-Qi Chi, Ya-Nan Zhou, Xue Ma, Zhong-Yuan Lin, Lei Wang*, Yong-Ming Chai
China University of Petroleum (East China); Qingdao University of Science and Technology



Well-defined Ni/Co₃O₄ nanospheres coupled with N-doped carbon hybrids (Ni/Co₃O₄@NC) have been synthesized via a facile impregnation-calcination method, and they exhibit excellent OER activity and stability in alkaline media.



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