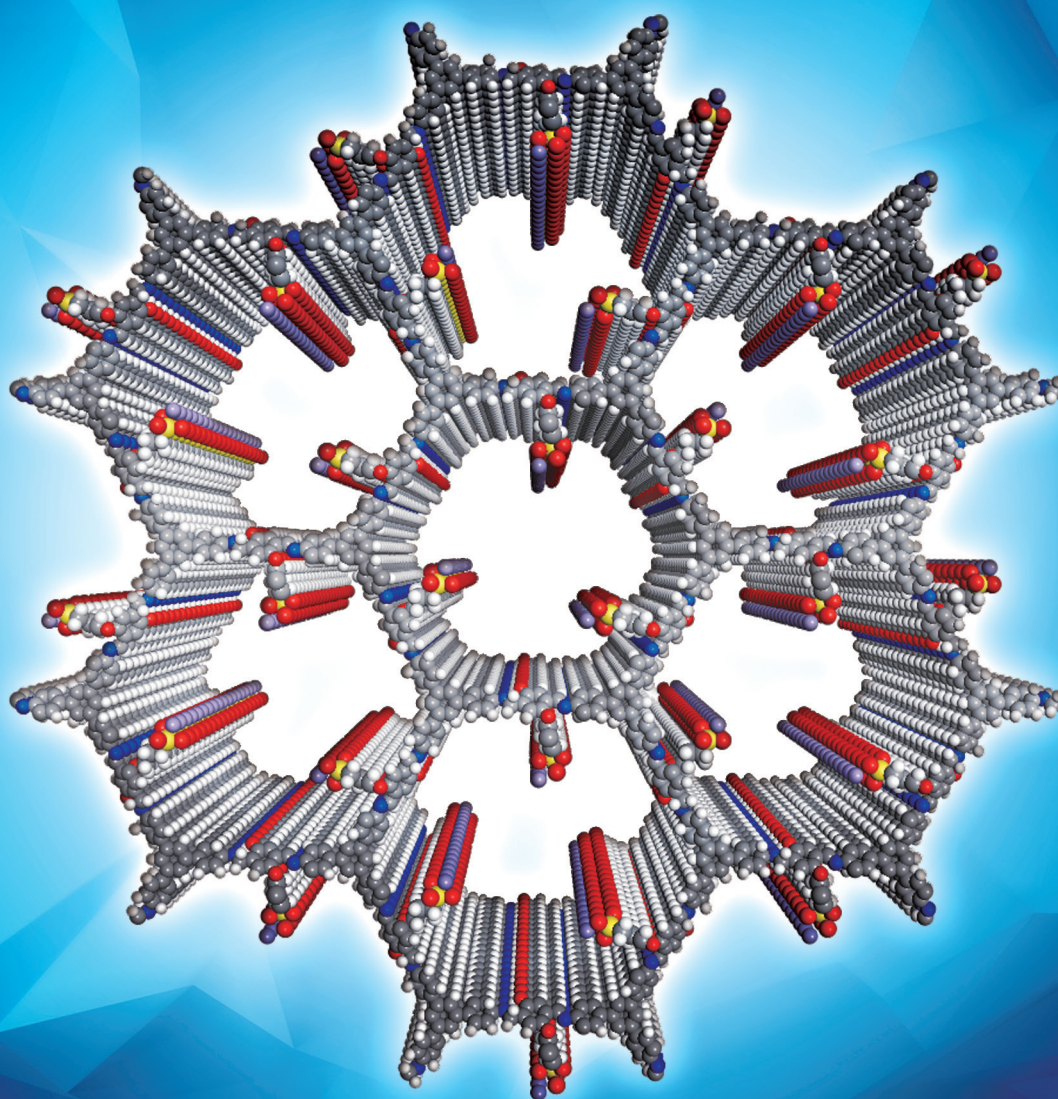




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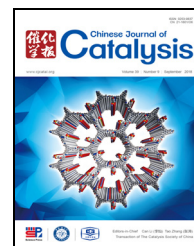
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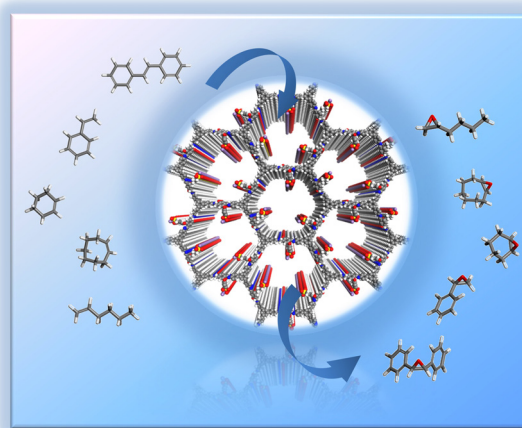
Chin. J. Catal., 2018, 39: 1437–1444 doi: 10.1016/S1872-2067(18)63065-7

Ionic covalent organic frameworks for highly effective catalysis

Hui Hu, Qianqian Yan, Ming Wang, Li Yu, Wei Pan, Baoshan Wang, Yanan Gao*

Hainan University;
Shandong University;
Shandong Normal University;
Wuhan University

An ionic covalent organic framework (I-COF) was constructed via post-synthetic modification. This material was endowed with high catalytic performance through ion exchange of functional counterions. The versatile I-COFs exhibited excellent catalytic activity in epoxidation reactions.

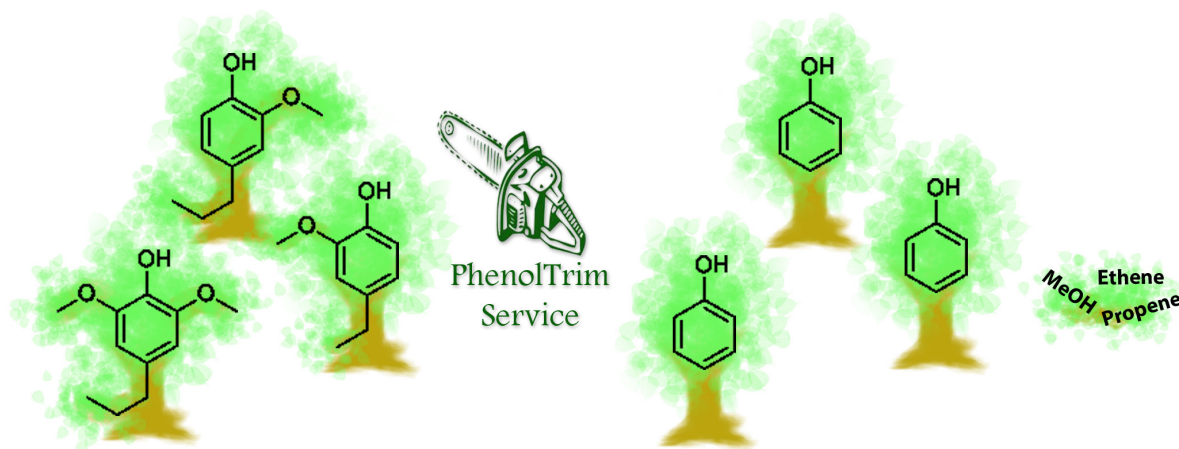


Chin. J. Catal., 2018, 39: 1445–1452 doi: 10.1016/S1872-2067(18)63132-8

Single-step conversion of lignin monomers to phenol: Bridging the gap between lignin and high-value chemicals

Jianguang Zhang[†], Loris Lombardo[†], Gökalp Gözaydın, Paul J. Dyson, Ning Yan*

National University of Singapore, Singapore;
University of Lincoln, United Kingdom;
Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland

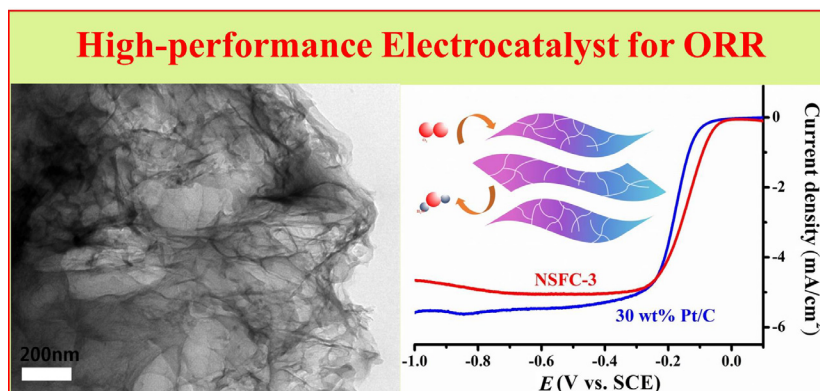


Lignin derived methoxyl alkyl substituted phenols were converted into phenol by hydro-demethoxylation and de-alkylation.

Chin. J. Catal., 2018, 39: 1453–1462 doi: 10.1016/S1872-2067(18)63124-9

An effective FeCl₃ template assisted synthesis of nitrogen, sulfur and iron-tridoped carbon nanosheets from a protic salt for oxygen reduction electrocatalysis

Junjie Zhu, Qingxue Lai, Yingxuan Zhao, Jia Zhong, Yanyu Liang *
Nanjing University of Aeronautics and Astronautics



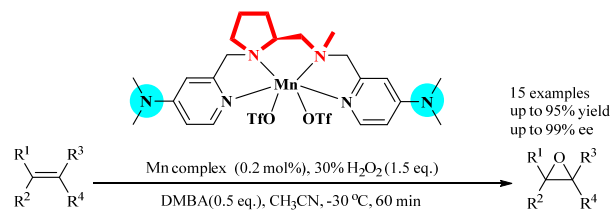
Nitrogen, sulfur and iron-tridoped mesoporous carbon nanosheets (NSFC) was fabricated using FeCl₃ template from the protic salt PPS. The NSFC possessed comparable electrochemical catalysis with commercial 30 wt% Pt/C catalyst.

Chin. J. Catal., 2018, 39: 1463–1469 doi: 10.1016/S1872-2067(18)63116-X

Enantioselective epoxidation of olefins with hydrogen peroxide catalyzed by bioinspired aminopyridine manganese complexes derived from L-proline

Wenfeng Wang, Qiangsheng Sun, Chungu Xia, Wei Sun *
Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences;
University of Chinese Academy of Sciences

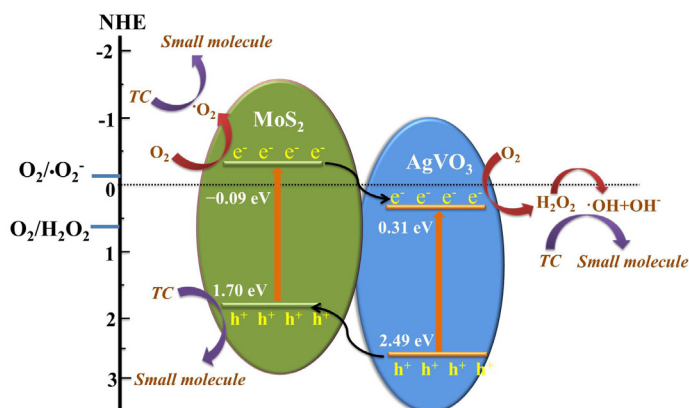
Three tetradentate nitrogen ligands derived from L-proline were developed, and the catalytic activities and selectivities of the corresponding manganese complexes were carefully evaluated in asymmetric epoxidation of olefins.



Chin. J. Catal., 2018, 39: 1470–1483 doi: 10.1016/S1872-2067(18)63111-0

Enhanced photocatalytic performance of MoS₂ modified by AgVO₃ from improved generation of reactive oxygen species

Yingying Qin, Hong Li, Jian Lu, Yongsheng Yan, Ziyang Lu, Xinlin Liu *
Jiangsu University



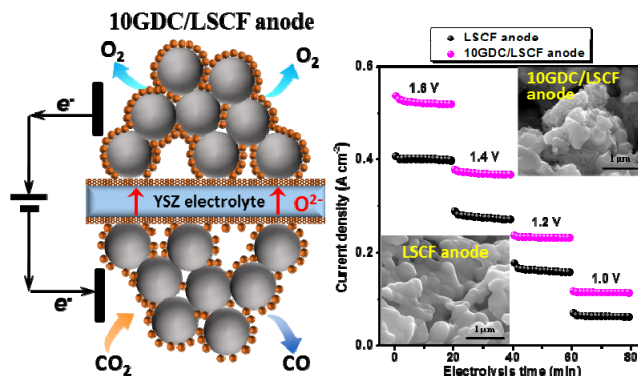
The AgVO₃/MoS₂ composite photocatalyst was synthesized by the hydrothermal method. The excellent photocatalytic performance was due to the modification of MoS₂ by AgVO₃ which facilitated the O₂ adsorption/activation and accelerated the two-electron oxygen reduction reaction for H₂O₂ generation on the surface of MoS₂.

Chin. J. Catal., 2018, 39: 1484–1492 doi: 10.1016/S1872-2067(18)63118-3

Effect of $\text{Gd}_{0.2}\text{Ce}_{0.8}\text{O}_{1.9}$ nanoparticles on the oxygen evolution reaction of $\text{La}_{0.6}\text{Sr}_{0.4}\text{Co}_{0.2}\text{Fe}_{0.8}\text{O}_{3-\delta}$ anode in solid oxide electrolysis cell

Fang Guan, Xiaomin Zhang, Yuefeng Song, Yingjie Zhou, Guoxiong Wang*, Xinhe Bao*
Dalian Institute of Chemical Physics, Chinese Academy of Sciences;
University of Chinese Academy of Sciences

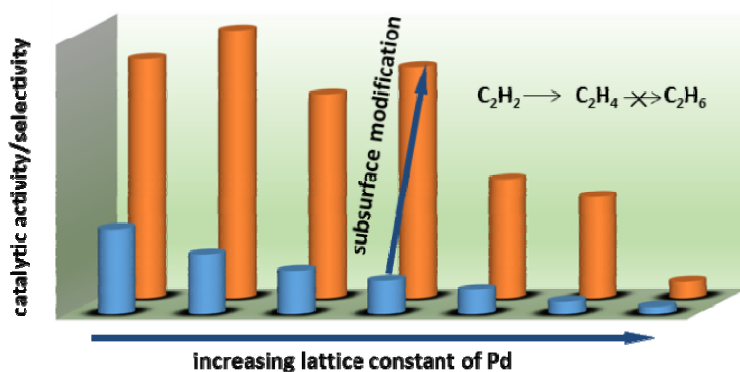
$\text{Ce}_{0.8}\text{Gd}_{0.2}\text{O}_{1.9}$ nanoparticles infiltrated the $\text{La}_{0.6}\text{Sr}_{0.4}\text{Co}_{0.2}\text{Fe}_{0.8}\text{O}_{3-\delta}$ anode and significantly enhanced the electrochemical performance of the oxygen evolution reaction in a solid oxide electrolysis cell for CO_2 electroreduction.



Chin. J. Catal., 2018, 39: 1493–1499 doi: 10.1016/S1872-2067(18)63081-5

Influence of surface strain on activity and selectivity of Pd-based catalysts for the hydrogenation of acetylene: A DFT study

Ping Wang, Bo Yang*
ShanghaiTech University



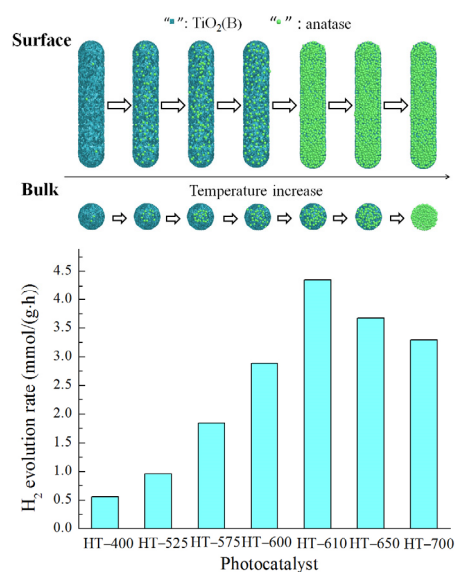
The effect of surface strain on the activity and selectivity of Pd and Pd-carbide for the hydrogenation of acetylene is thoroughly examined.

Chin. J. Catal., 2018, 39: 1500–1510 doi: 10.1016/S1872-2067(18)63096-7

Fabrication of $\text{TiO}_2(\text{B})$ /anatase heterophase junctions in nanowires via a surface-preferred phase transformation process for enhanced photocatalytic activity

Yilan Wang, Wan Zhang, Zihao Wang, Yimeng Cao, Jiami Feng, Zenglin Wang, Yi Ma*
Shaanxi Normal University

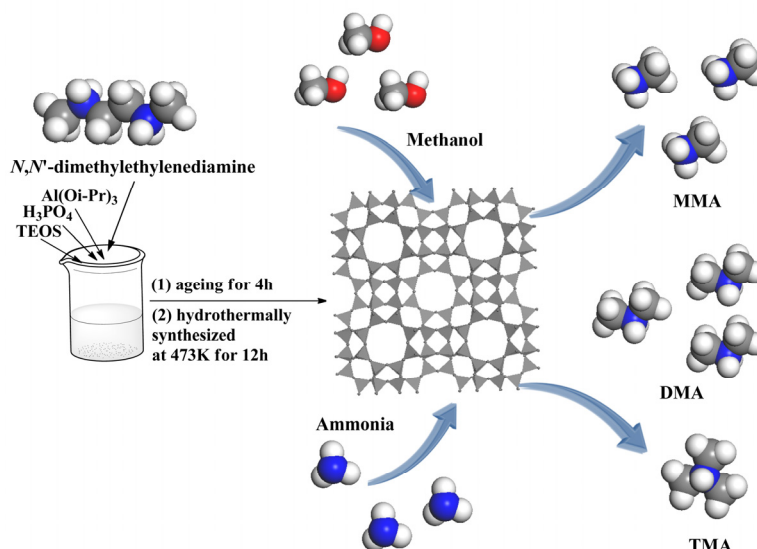
$\text{TiO}_2(\text{B})$ /anatase-heterophase-junction nanowires were prepared via a surface-preferred phase-transformation process. The high charge-separation efficiency, due to the heterophase junction (bulk), and the excellent surface reaction of anatase (surface) both contribute to the enhanced photocatalytic activity.



Chin. J. Catal., 2018, 39: 1511–1519 doi: 10.1016/S1872-2067(18)63122-5

Silicoaluminophosphate molecular sieve DNL-6: Synthesis with a novel template, *N,N'*-dimethylethylenediamine, and its catalytic application

Pengfei Wu, Miao Yang, Wenna Zhang, Shu Zeng, Mingbin Gao, Shutao Xu, Peng Tian *, Zhongmin Liu *
Dalian Institute of Chemical Physics, Chinese Academy of Sciences; University of Chinese Academy of Sciences



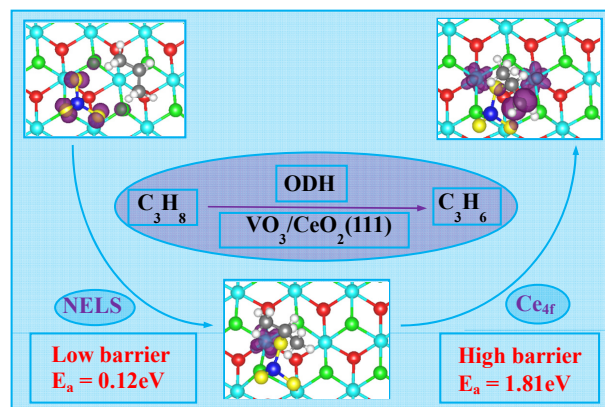
N,N'-dimethylethylenediamine was used as a template to synthesize DNL-6 with a high Si content, which showed excellent catalytic performance in the methanol amination reaction.

Chin. J. Catal., 2018, 39: 1520–1526 doi: 10.1016/S1872-2067(18)63072-4

Activity and selectivity of propane oxidative dehydrogenation over $\text{VO}_3/\text{CeO}_2(111)$ catalysts: A density functional theory study

Chang Huang, Zhi-Qiang Wang, Xue-Qing Gong *
East China University of Science and Technology

The new empty localized states of $\text{VO}_3/\text{CeO}_2(111)$ can assist the breaking of the first C–H bond of the propane molecule, following which they become occupied and the remaining C–H bonds become increasingly difficult to break.

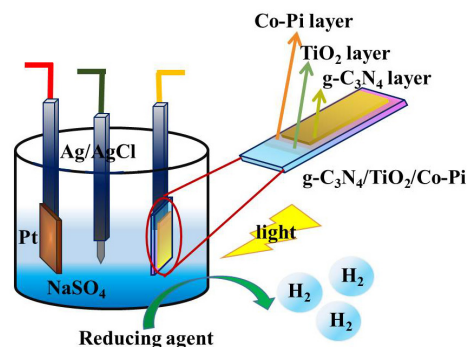


Chin. J. Catal., 2018, 39: 1527–1533 doi: 10.1016/S1872-2067(18)63079-7

Multifarious function layers photoanode based on g-C₃N₄ for photoelectrochemical water splitting

Zhifeng Liu *, Xue Lu
Hubei University of Technology;
Tianjin Chengjian University

g-C₃N₄/TiO₂/Co-Pi photoanode for PEC water splitting to generate hydrogen. g-C₃N₄ as light-absorption layer layer, TiO₂ as protection layer and Co-Pi as hole capture layer. Enhanced performances due to outstanding light absorption, charges separation and durability.

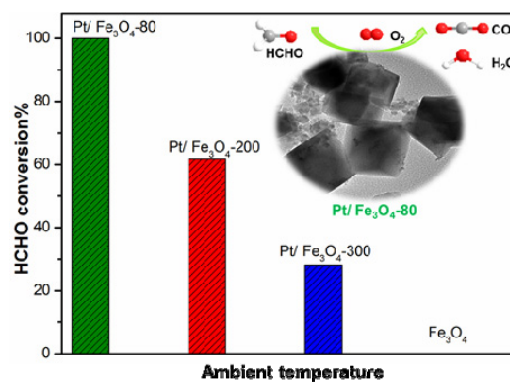


Chin. J. Catal., 2018, 39: 1534–1542 doi: 10.1016/S1872-2067(18)63082-7

Pt supported on octahedral Fe_3O_4 microcrystals as a catalyst for removal of formaldehyde under ambient conditions

Weiyi Cui, Dan Xue, Naidi Tan, Bin Zheng, Mingjun Jia *, Wenxiang Zhang *
Jilin Institute of Chemical Technology; Jilin University;
Xi'an Shiyou University

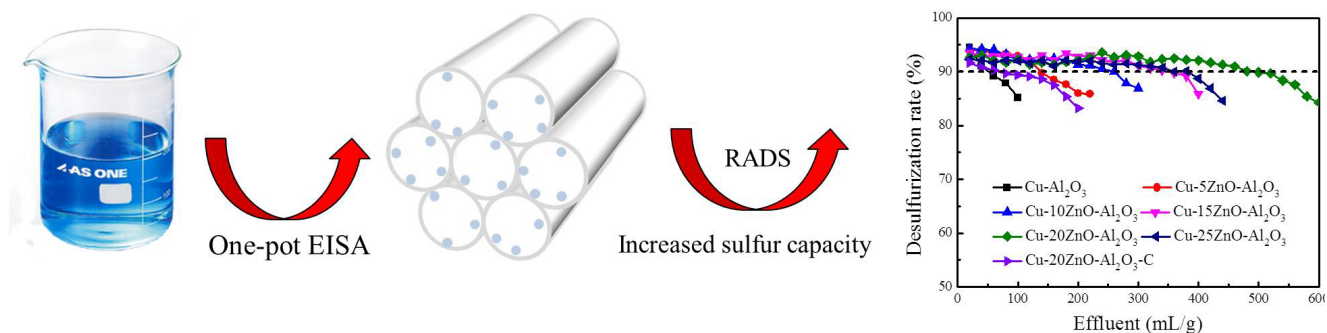
An octahedral- Fe_3O_4 -supported Pt catalyst ($\text{Pt}/\text{Fe}_3\text{O}_4$ -80) obtained by a facile co-precipitation method exhibits unprecedented catalytic performance in the oxidation of low-concentration formaldehyde under ambient temperature and moisture conditions.



Chin. J. Catal., 2018, 39: 1543–1551 doi: 10.1016/S1872-2067(18)63085-2

Ordered mesoporous $\text{Cu-ZnO-Al}_2\text{O}_3$ adsorbents for reactive adsorption desulfurization with enhanced sulfur saturation capacity

Yaqing Liu, Yuan Pan, Hongying Wang, Yunqi Liu *, Chenguang Liu *
China University of Petroleum (East China); Tsinghua University

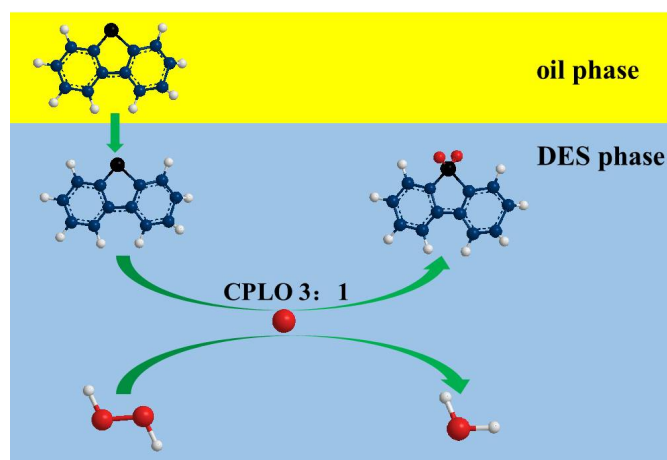


The ordered mesoporous $\text{Cu-ZnO-Al}_2\text{O}_3$ adsorbents were synthesized by one-pot evaporation-induced self-assembly strategy, which showed improvement in desulfurization activity and sulfur saturation capacity in reactive adsorption desulfurization (RADS).

Chin. J. Catal., 2018, 39: 1552–1559 doi: 10.1016/S1872-2067(18)63091-8

Oxidative desulfurization of diesel fuel with caprolactam-based acidic deep eutectic solvents: Tailoring the reactivity of DESs by adjusting the composition

Lingwan Hao, Ting Su, Dongmei Hao, Changliang Deng, Wanzhong Ren, Hongying Lü *
Yantai University

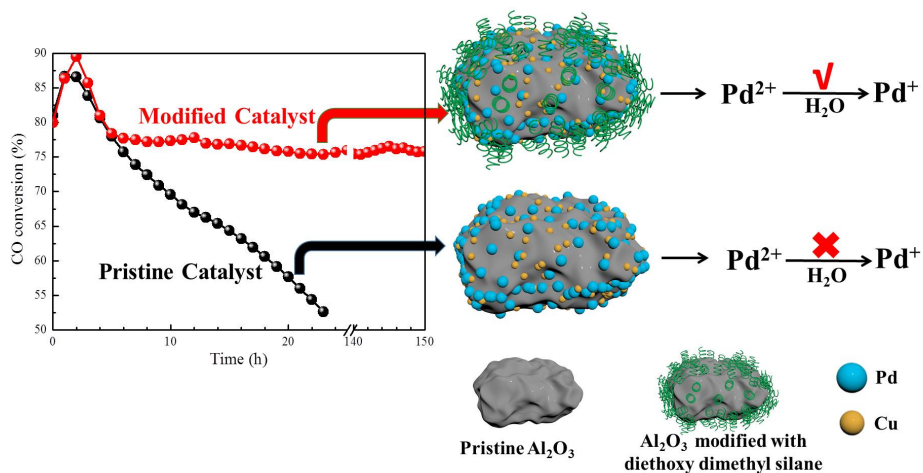


Sulfur compounds are extracted into the DES phase, where they interact. The carboxylic acid moieties of the DES are oxidized by H_2O_2 to the corresponding peracids, which in turn oxidize the sulfur compounds to the corresponding sulfones.

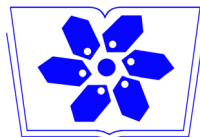
Chin. J. Catal., 2018, 39: 1560–1567 doi: 10.1016/S1872-2067(18)63112-2

Stability of Pd-Cu-Cl_x/Al₂O₃ catalyst for CO oxidation

Li Wang, Xiaoqing Lu, Wei Wang, Wangcheng Zhan *, Yanglong Guo, Yun Guo *
East China University of Science and Technology



Support silylanization efficiently improved catalyst hydrophobicity and ensured stability after 150 h at 0 °C and 100% relative humidity. The detrimental role of water on stability through the inhibition of the production of the active Pd⁺ species was overwhelmingly restrained.



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