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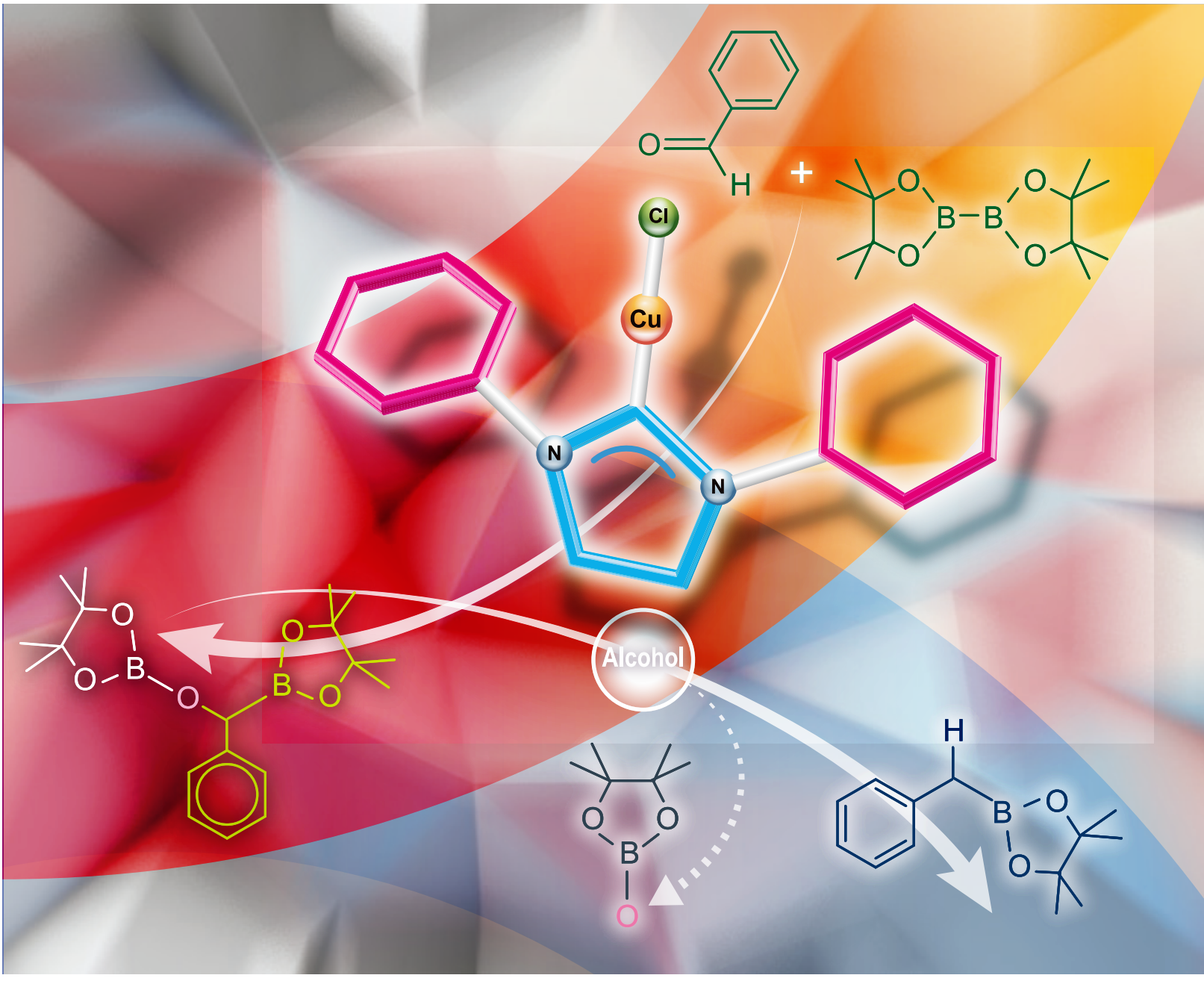

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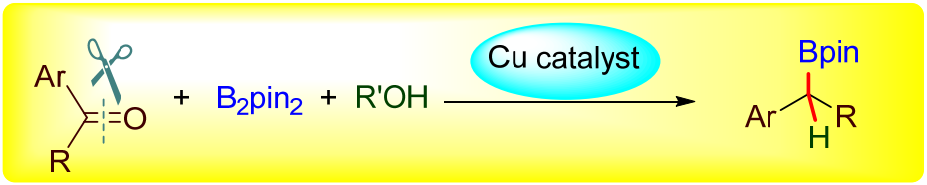
Graphical Contents

Communications

Chin. J. Catal., 2018, 39: 1725–1729 doi: 10.1016/S1872-2067(18)63139-0

Cu-catalyzed deoxygenative *gem*-hydroborylation of aromatic aldehydes and ketones to access benzylboronic esters

Lu Wang, Wei Sun, Chao Liu *
Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences;
University of Chinese Academy of Sciences

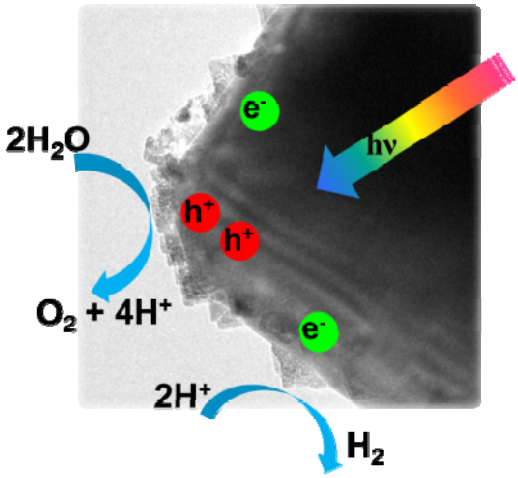


A novel copper-catalyzed deoxygenative *gem*-hydroborylation of aromatic aldehydes and ketones has been developed. This direct and operationally simple protocol provides an effective approach for the synthesis of a variety of primary and secondary benzylboronates, in which broad functional group tolerance was presented. Widely available B_2pin_2 was used as the boron source and alcoholic proton was applied as the hydride source.

Chin. J. Catal., 2018, 39: 1730–1735 doi: 10.1016/S1872-2067(18)63138-9

Photo-induced self-formation of dual-cocatalysts on semiconductor surface

Linchao Mu, Qiao Zhang, Xiaoping Tao, Yue Zhao, Shengyang Wang, Junyan Cui, Fengtao Fan, Can Li *
Dalian Institute of Chemical Physics, Chinese Academy of Sciences;
University of Chinese Academy of Sciences



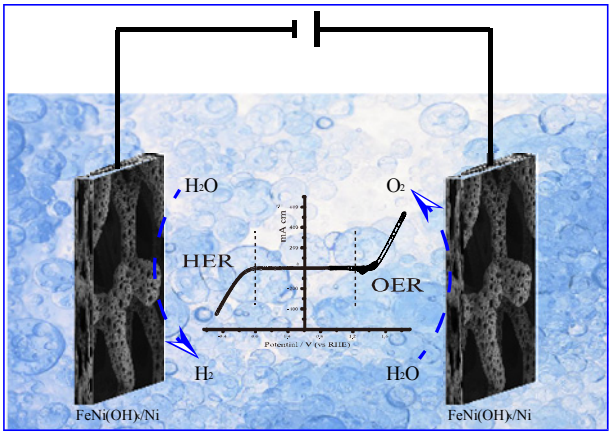
Self-distribution of redox dual-cocatalysts on semiconductor surface can be achieved by photogenerated electrons and holes. This strategy promotes the photocatalytic activity to a high level, which will be benefit for solar energy conversion system.

Articles

Chin. J. Catal., 2018, 39: 1736–1745 doi: 10.1016/S1872-2067(18)63150-X

Hierarchical coral-like FeNi(OH)$_x$/Ni via mild corrosion of nickel as an integrated electrode for efficient overall water splitting

Rui Xiang, Cheng Tong, Yao Wang, Lishan Peng, Yao Nie, Li Li, Xun Huang *, Zidong Wei *
Chongqing University; Chongqing Normal University

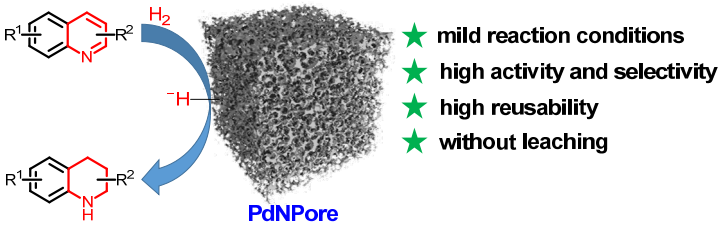


A coral-like FeNi(OH)$_x$/Ni integrated electrode for efficient overall water splitting (V_{cell} = 1.52 V at 10 mA cm^{-2}) is prepared with the assistance of an environmental friendly, low-cost strategy, namely, controlled corrosion, hydrolysis.

Chin. J. Catal., 2018, 39: 1746–1752 doi: 10.1016/S1872-2067(18)63151-1

Unsupported nanoporous palladium-catalyzed chemoselective hydrogenation of quinolines: Heterolytic cleavage of H$_2$ molecule

Ye Lu, Yoshinori Yamamoto, Abdulrahman I. Almansour, Natarajan Arumugam, Raju Suresh Kumar, Ming Bao *
Dalian University of Technology, China; Tohoku University, Japan; Ritsumeikan University, Japan; King Saud University, Saudi Arabia

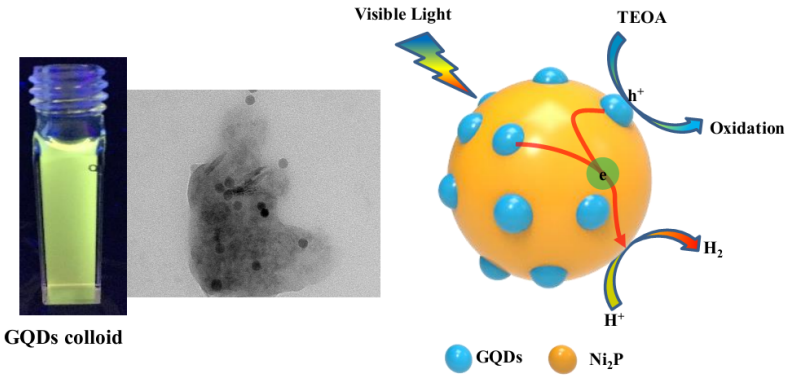


A non-toxic, robust, and recyclable nanoporous palladium catalyst was successfully used in the chemoselective hydrogenation of quinolines under mild reaction conditions.

Chin. J. Catal., 2018, 39: 1753–1761 doi: 10.1016/S1872-2067(18)63135-3

Metal-free graphene quantum dots photosensitizer coupled with nickel phosphide cocatalyst for enhanced photocatalytic hydrogen production in water under visible light

Liang Zhu, Qiudi Yue, Daochuan Jiang, Huanlin Chen, Rana Muhammad Irfan, Pingwu Du *
University of Science and Technology of China

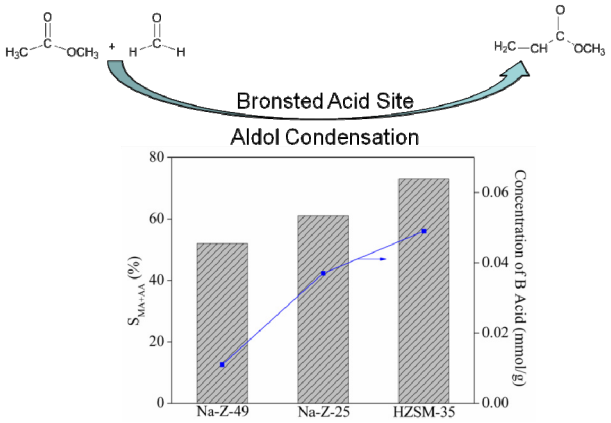


Metal-free OH-functionalized graphene quantum dots (OH-GQDs) were used as the photosensitizer coupled with Ni_2P nanoparticles (NPs) for photocatalytic H_2 production under visible light. The H_2 production rate is ~94 times higher than that of bare OH-GQDs, which is even comparable to that of OH-GQDs with 1 wt% Pt cocatalyst. This enhancement is probably due to the semiconductor-cocatalyst interface interaction between Ni_2P and OH-GQDs to facilitate efficient charge transfer process.

Chin. J. Catal., 2018, 39: 1762–1769 doi: 10.1016/S1872-2067(18)63145-6

HZSM-35 zeolite catalyzed aldol condensation reaction to prepare acrylic acid and its ester: Effect of its acidic property

Zhanling Ma, Xiangang Ma, Youming Ni, Hongchao Liu, Wenliang Zhu *, Xinwen Guo, Zhongmin Liu *
Dalian Institute of Chemical Physics, Chinese Academy of Sciences; Dalian University of Technology; University of Chinese Academy of Sciences

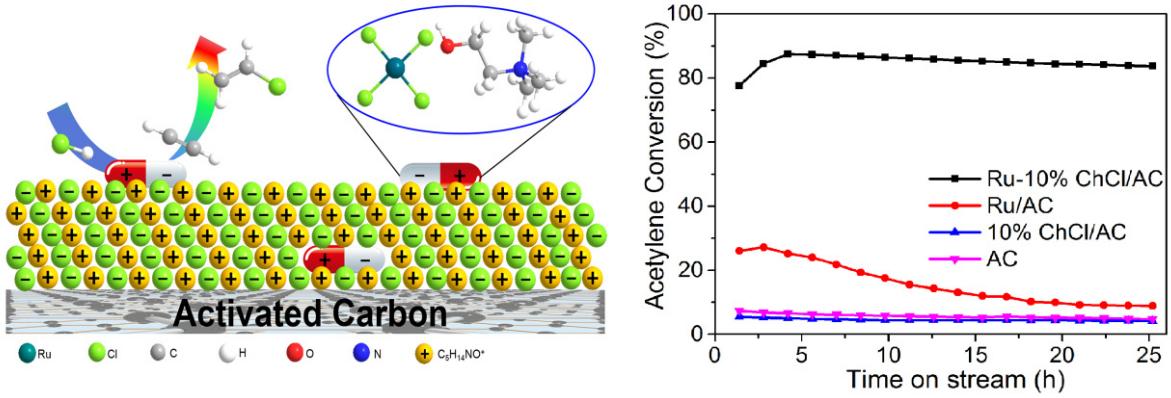


Brönsted acid was an active site for aldol condensation reaction of DMM and MAc to produce MA and AA. The selectivity of MA and AA increased with the concentration of Brönsted acid.

Chin. J. Catal., 2018, 39: 1770–1781 doi: 10.1016/S1872-2067(18)63121-3

Efficient and stable Ru(III)-choline chloride catalyst system with low Ru content for non-mercury acetylene hydrochlorination

Hang Li, Botao Wu, Jianhui Wang, Fumin Wang *, Xubin Zhang *, Gang Wang, Haichao Li
Tianjin University; Qinghai Nationalities University

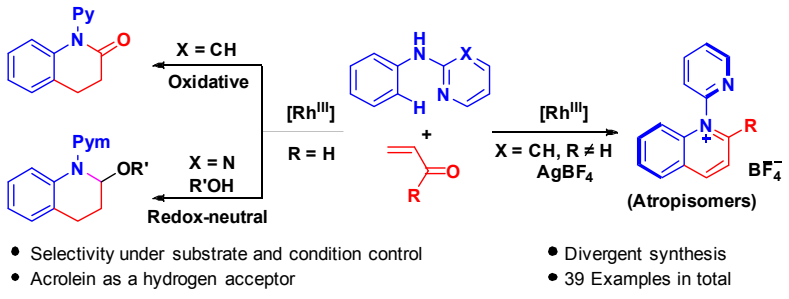


The supported Ru(III)-ChCl/AC catalyst system, where ChCl provides an environment for the $ChRuCl_4$ to be stabilized as Ru(III), shows superior activity and stability in acetylene hydrochlorination.

Chin. J. Catal., 2018, 39: 1782–1791 doi: 10.1016/S1872-2067(18)63134-1

Chemo-selective couplings of anilines and acroleins/enones under substrate control and condition control

Xukai Zhou, Jiaqiong Sun, Xingwei Li *
Dalian Institute of Chemical Physics, Chinese Academy of Sciences; University of Chinese Academy of Sciences

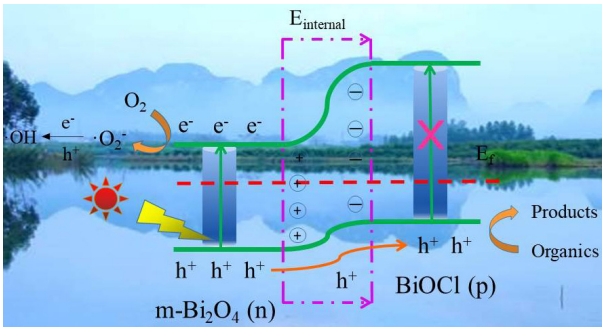


Rh(III)-catalyzed C–H activation of *N*-protected anilines and chemo-divergent couplings with acroleins/enones have been realized for synthesis of three classes of heterocycles. The oxidative coupling of *N*-pyridylaniline afforded dihydroquinolones with the acrolein being a major hydrogen acceptor. When the directing group was replaced by pyrimidyl in the same system, redox-neutral coupling occurred to afford hemiaminal ethers. Oxidative annulation of *N*-pyridylanilines with enones using $AgBF_4$ oxidant afforded atropisomeric quinolinium salts.

Chin. J. Catal., 2018, 39: 1792–1803 doi: 10.1016/S1872-2067(18)63142-0

Synthesis of novel p-n heterojunction m-Bi_2O_4/BiOCl nanocomposite with excellent photocatalytic activity through ion-etching method

Junxiu Wang, Zhenzong Zhang, Xi Wang, Yi Shen, Yongfu Guo *,
Po Keung Wong, Renbi Bai *
Suzhou University of Science and Technology;
The Chinese University of Hong Kong

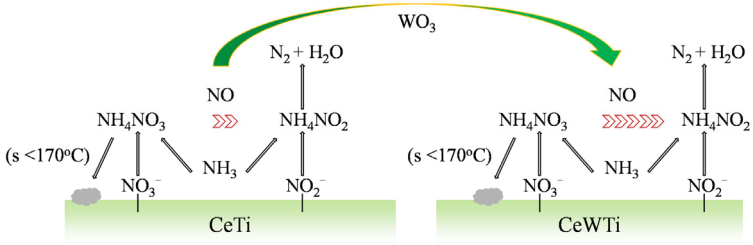


A novel photocatalyst of p-n heterojunction m-Bi_2O_4/BiOCl was synthetized to degrade methylene orange and tetracycline. Under visible light, the m-Bi_2O_4/BiOCl showed excellent photocatalysis and mineralization ability for methylene orange and tetracycline within short irradiation time.

Chin. J. Catal., 2018, 39: 1804–1813 doi: 10.1016/S1872-2067(18)63129-8

Low-temperature activity and mechanism of WO_3-modified CeO_2-TiO_2 catalyst under NH_3-NO/NO_2 SCR conditions

Lei Chen, Ding Weng, Jiadao Wang *, Duan Weng *, Li Cao
Tsinghua University

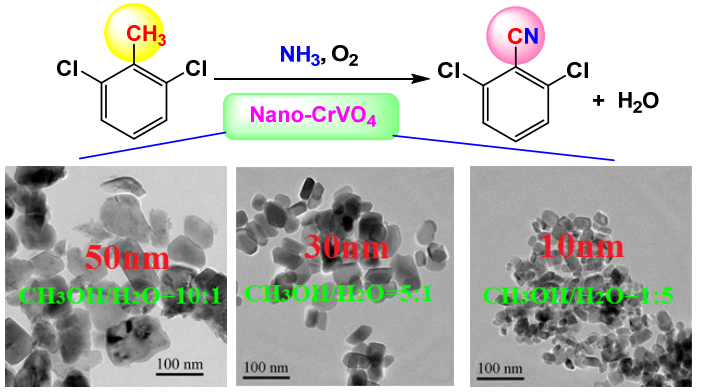


NH_3-NO/NO_2 SCR reaction routes on CeTi and CeWTi catalysts. Addition of WO_3 provides more acid sites which accelerate the reaction between NH_4NO_3 and NO to get a superior low-temperature activity.

Chin. J. Catal., 2018, 39: 1814–1820 doi: 10.1016/S1872-2067(18)63119-5

Solvothermal synthesis and characterization of nanocrystalline vanadium-chromium composite oxides and catalytic ammoxidation of 2,6-dichlorotoluene

Yeying Huang, Tingcheng Li, Qingliang You, Xiangqian You, Qian Zhang, Daohong Zhang, Guangyong Xie *
South-Central University for Nationalities; Jianghan University



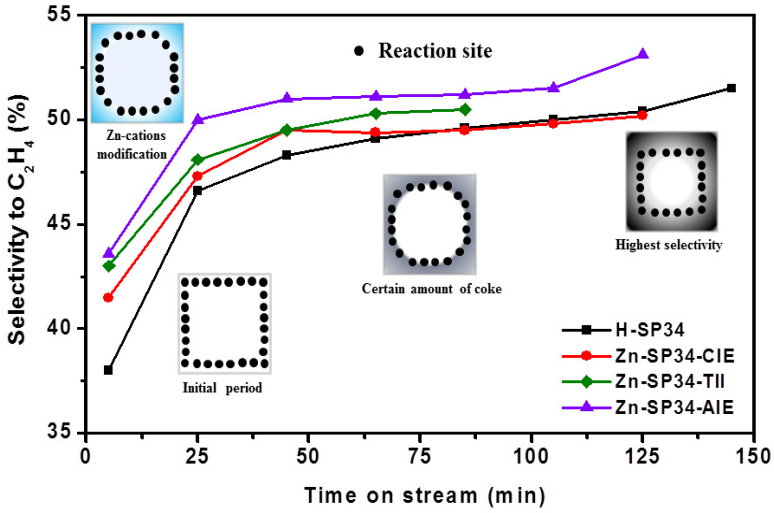
- Pure phase $CrVO_4$ nanocrystals were synthesized for the first time.
- The size of the $CrVO_4$ could be effectively tuned from 10 to 50 nm.
- The nano-$CrVO_4$ showed the highest activity among the bi-component composite oxides.

Nano-$CrVO_4$ was obtained for the first time through solvothermal reaction of V_2O_5 and CrO_3 in either methanol or methanol/water mixtures at 180 °C to prepare the precursor followed by calcination at 700 °C, which showed almost the highest catalytic activity among the bi-component composite oxides reported for the ammoxidation of 2,6-dichlorotoluene to 2,6-dichlorobenzonitrile.

Chin. J. Catal., 2018, 39: 1821–1831 doi: 10.1016/S1872-2067(18)63141-9

Enhancing ethylene selectivity in MTO reaction by incorporating metal species in the cavity of SAPO-34 catalysts

Jiawei Zhong, Jingfeng Han, Yingxu Wei *, Shutao Xu, Tantan Sun, Xinwen Guo, Chunshan Song *, Zhongmin Liu *
Dalian University of Technology, China;
Dalian Institute of Chemical Physics, Chinese Academy of Sciences, China;
Pennsylvania State University, USA;
University of Chinese Academy of Sciences, China

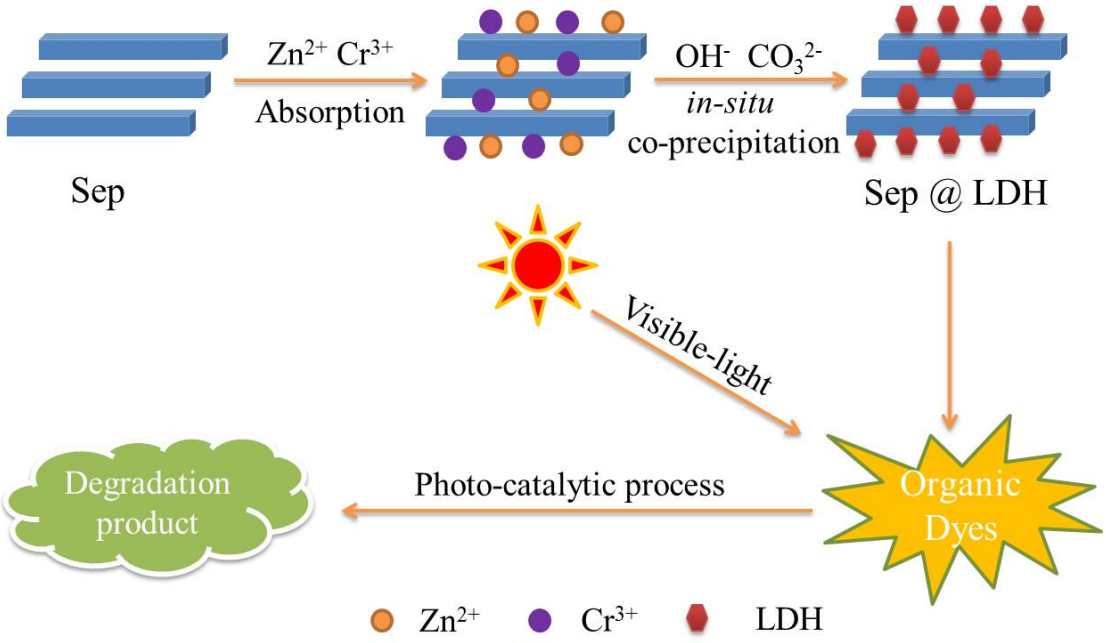


The Zn cation-modified SAPO-34 catalysts with core-shell like structure favor the quick establishment of catalytic environment for effective MTO reaction with the selective production of ethylene via introducing extra diffusion limitation for the higher hydrocarbon products.

Chin. J. Catal., 2018, 39: 1832–1841 doi: 10.1016/S1872-2067(18)63120-1

Facile preparation of sepiolite@LDH composites for the visible-light degradation of organic dyes

Li Jin, Hong-Yan Zeng *, Sheng Xu, Chao-Rong Chen, Heng-Zhi Duan, Jin-Ze Du, Guo Hu, Yun-Xin Sun
Xiangtan University

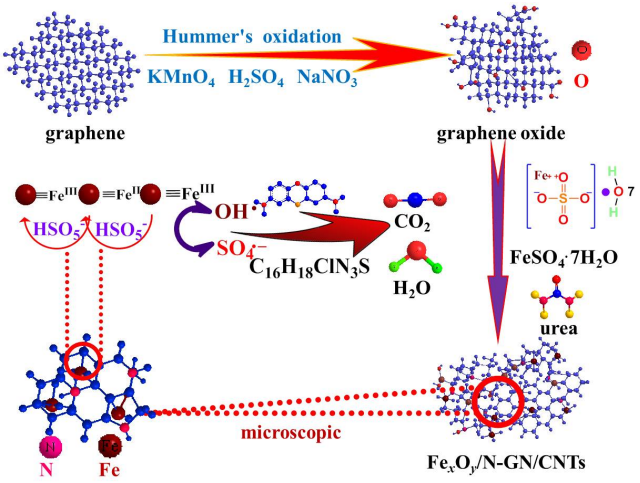


Sep@LDH composites were successfully synthesized by a facile *in situ* co-precipitation method and exhibited high photocatalytic performances towards the degradation of co-existing MO and MB under visible-light irradiation, where Sep was an excellent carrier.

Chin. J. Catal., 2018, 39: 1842–1853 doi: 10.1016/S1872-2067(18)63114-6

One-step preparation of Fe_xO_y/N-GN/CNTs heterojunctions as a peroxymonosulfate activator for relatively highly-efficient methylene blue degradation

Xin Zhao, Qing-Da An *, Zuo-Yi Xiao, Shang-Ru Zhai *, Zhan Shi
Dalian Polytechnic University; Jilin University

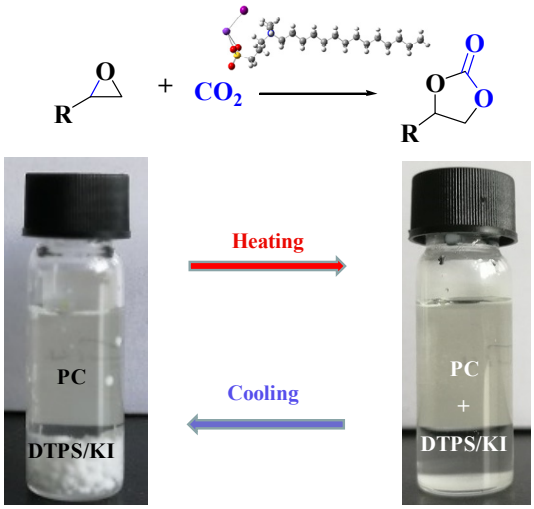


Multifunctional Fe_xO_y/N-GN/CNTs heterojunctions that behave as peroxymonosulfate (PMS) activators for relatively high-efficient organic pollutants degradation, were prepared via a single-step solvothermal method.

Chin. J. Catal., 2018, 39: 1854–1860 doi: 10.1016/S1872-2067(18)63101-8

Temperature-responsive self-separation ionic liquid system of zwitterionic-type quaternary ammonium-KI for CO_2 fixation

Xiying Fu, Pengtao Xie, Yiwei Lian, Leqin He, Wei Zhao, Tao Chang *, Shenjun Qin *
Hebei University of Engineering; Handan College; Nanyang Normal University



A series of zwitterionic-type quaternary ammoniums with varying lengths of alkyl chains combined with KI were reported and considered as catalysts for the coupling reaction of CO_2 and epoxides. They exhibited temperature-responsive self-separation in propylene carbonate.

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