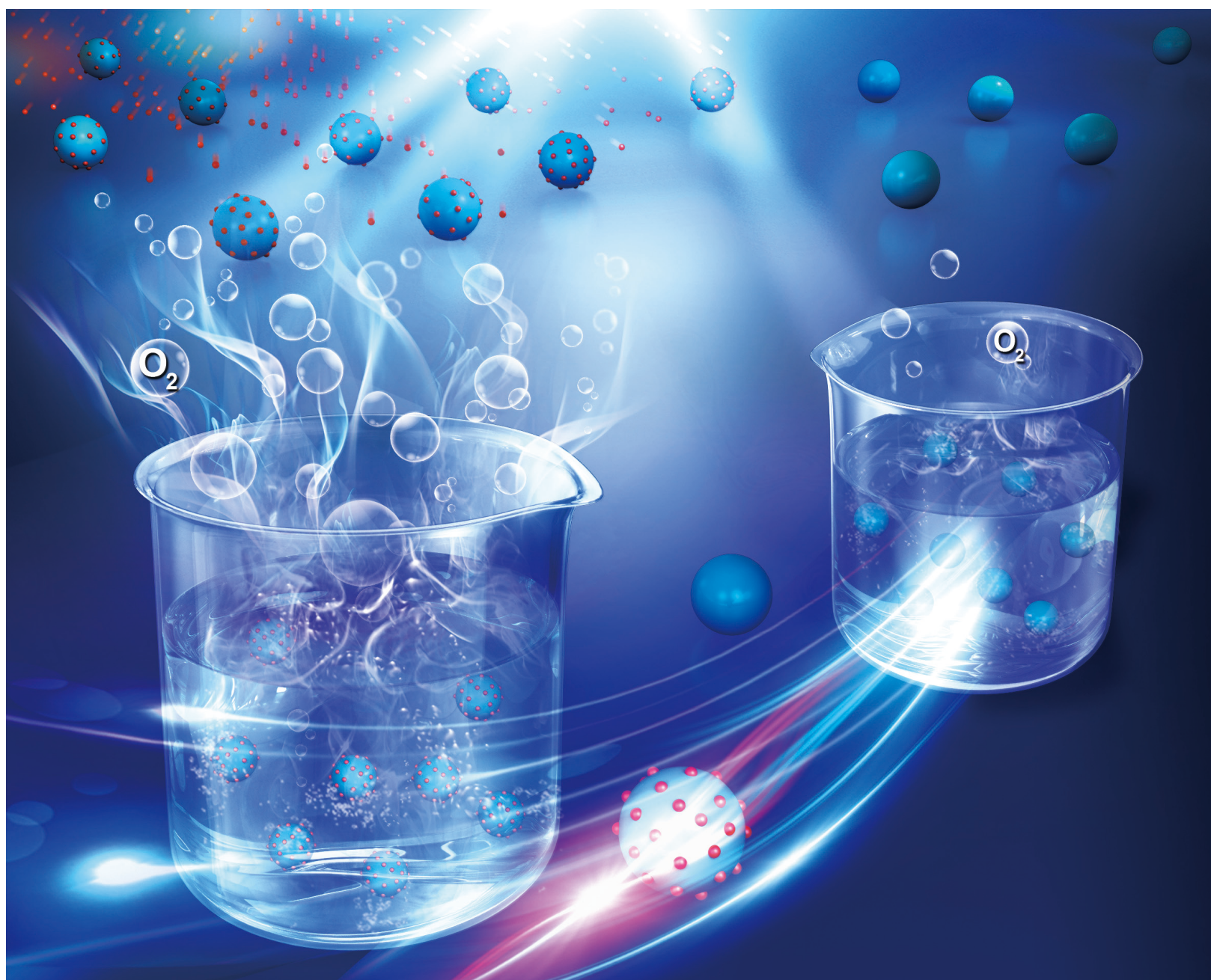




# Chinese Journal of Catalysis

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Editors-in-Chief Can Li (李灿) Tao Zhang (张涛)  
Transaction of The Catalysis Society of China

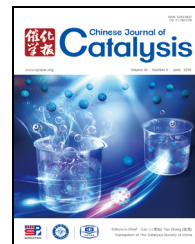
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## Chinese Journal of Catalysis

### Graphical Contents

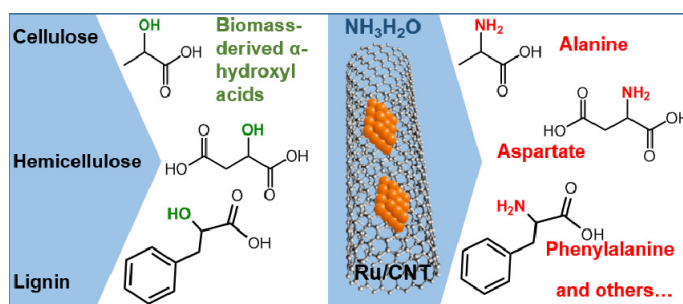
#### Highlight

*Chin. J. Catal.*, 2018, 39: 1013–1016 doi: 10.1016/S1872-2067(18)63093-1

#### Chemical transformation of sugars into amino acids

Tao Zhang \*

Dalian Institute of Chemical Physics, Chinese Academy of Sciences



Amino acids were produced from woody biomass intermediates through Ru/CNT catalyst in a rapid and efficient chemical approach.

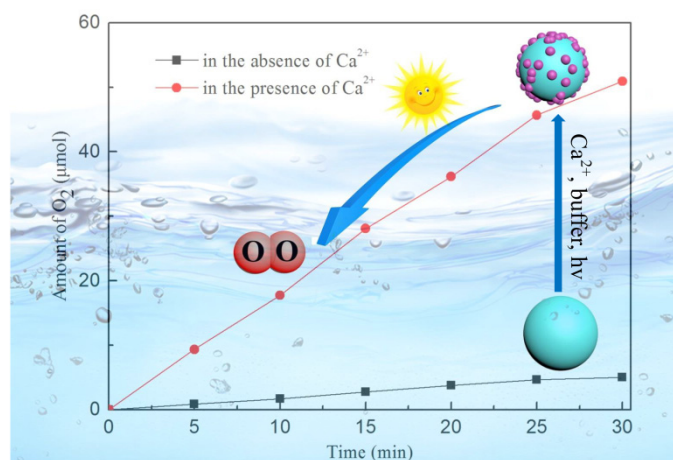
#### Articles

*Chin. J. Catal.*, 2018, 39: 1017–1026 doi: 10.1016/S1872-2067(18)63075-X

#### *In situ* doping brushite on zinc manganese oxide toward enhanced water oxidation performance: Mimicry of an oxygen-evolving complex

Miao Jiang, Junying Chen \*, Yingwei Li \*

South China University of Technology



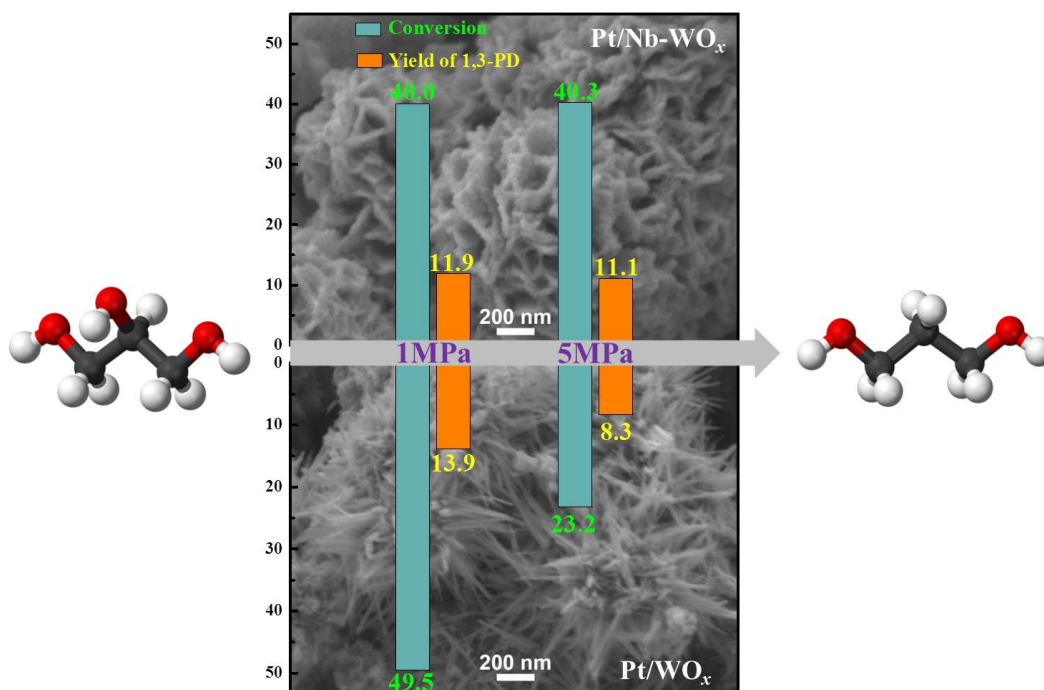
Brushite was *in situ* doped on MOF-templated zinc-manganese oxide via photodeposition in neutral water containing phosphate and calcium(II) ions, and was responsible for enhanced photocatalytic water oxidation performance.

*Chin. J. Catal.*, 2018, 39: 1027–1037 doi: 10.1016/S1872-2067(18)63074-8

**Pt/Nb-WO<sub>x</sub> for the chemoselective hydrogenolysis of glycerol to 1,3-propanediol: Nb dopant pacifying the over-reduction of WO<sub>x</sub> supports**

Man Yang, Xiaochen Zhao\*, Yujing Ren, Jia Wang, Nian Lei, Aiqin Wang\*, Tao Zhang

Dalian Institute of Chemical Physics, Chinese Academy of Sciences; University of Chinese Academy of Sciences; Northwest A&F University



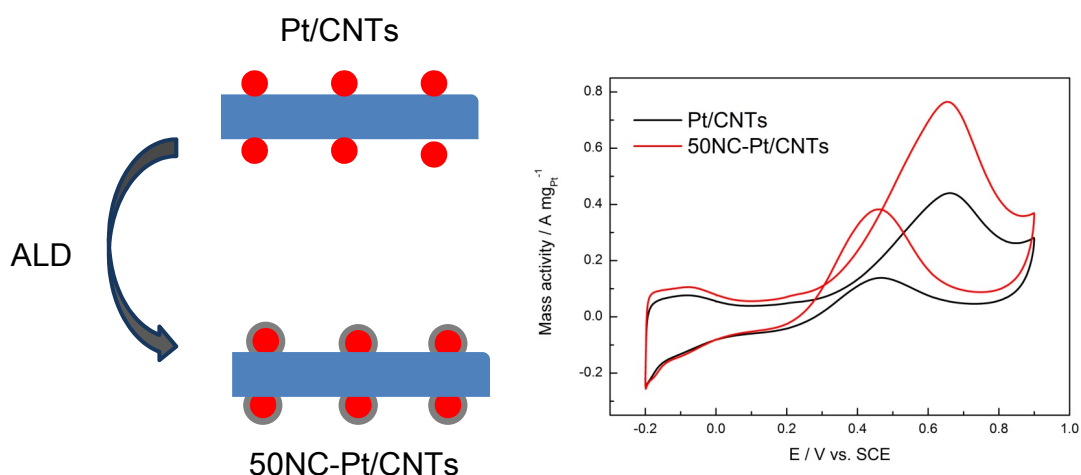
Pt/2%Nb-WO<sub>x</sub> successfully reconciled the conflicts between H<sub>2</sub> activation and W-reduction and demonstrated a promising performance in the selective hydrogenolysis of glycerol to 1,3-propanediol across an unprecedentedly wide H<sub>2</sub> pressure range.

*Chin. J. Catal.*, 2018, 39: 1038–1043 doi: 10.1016/S1872-2067(18)63066-9

**N-doped carbon modified Pt/CNTs synthesized by atomic layer deposition with enhanced activity and stability for methanol electrooxidation**

Huimin Yang, Baiyan Zhang, Bin Zhang, Zhe Gao, Yong Qin\*

Institute of Coal Chemistry, Chinese Academy of Sciences; University of Chinese Academy of Sciences



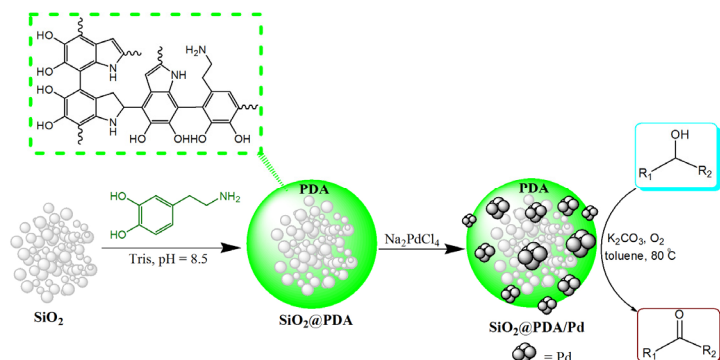
Uniform polyimide films are deposited on the outer face of a Pt/CNTs catalyst by atomic layer deposition. After pyrolysis, polyimide films are converted to porous N-doped carbon films. By precisely adjusting the thickness of the polyimide films, the optimized 50NC-Pt/CNTs catalyst shows 1.7-fold enhancement in activity in the methanol electrooxidation reaction.



*Chin. J. Catal.*, 2018, 39: 1044–1050 doi: 10.1016/S1872-2067(18)63049-9

### Facile *in-situ* synthesis and deposition of monodisperse palladium nanoparticles on polydopamine-functionalized silica gel as a heterogeneous and recyclable nanocatalyst for aerobic oxidation of alcohols

Hojat Veisi \*, Ahmad Nikseresht, Shahin Mohammadi, Saba Hemmati  
Payame Noor University, Iran

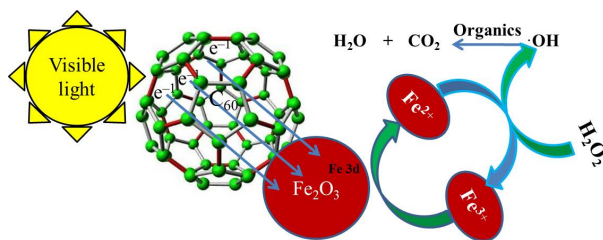


This study described a protocol for *in-situ* synthesis of Pd nanoparticles immobilized on polydopamine coated-silica gel as a novel nanocatalyst for aerobic oxidation of alcohols.

*Chin. J. Catal.*, 2018, 39: 1051–1059 doi: 10.1016/S1872-2067(18)63067-0

### Preparation of a fullerene[60]-iron oxide complex for the photo-fenton degradation of organic contaminants under visible-light irradiation

Cong-yang Zou, Ze-da Meng, Wen-chao Ji, Shou-qing Liu, Zhemin Shen \*, Yuan Zhang, Ni-shan Jiang  
Shanghai Jiao Tong University; Suzhou University of Science and Technology Shihu Campus

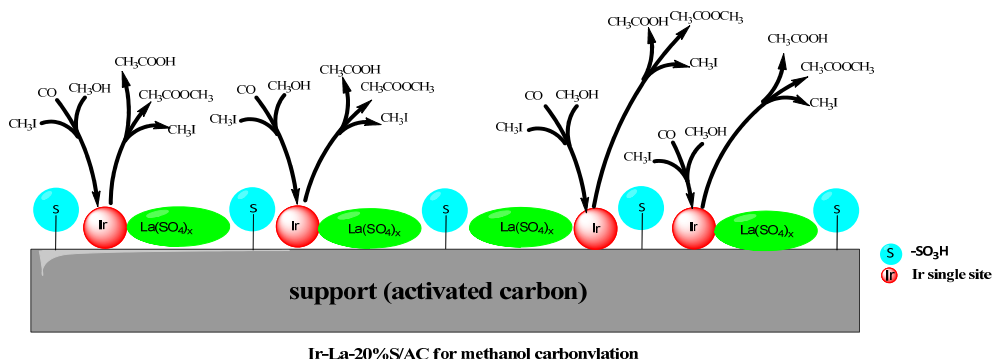


This is a highly efficient heterogeneous photo-Fenton system. The C<sub>60</sub> on the Fe<sub>2</sub>O<sub>3</sub> surface is expected to improve the photocatalytic behavior. ·OH plays a major role in the system and degrades the organic compounds to CO<sub>2</sub> and H<sub>2</sub>O.

*Chin. J. Catal.*, 2018, 39: 1060–1069 doi: 10.1016/S1872-2067(18)63019-0

### Acid-promoted Ir-La-S/AC-catalyzed methanol carbonylation on single atomic active sites

Zhou Ren, Yuan Lyu \*, Siquan Feng, Xiangen Song, Yunjie Ding \*  
Dalian Institute of Chemical Physics, Chinese Academy of Sciences; University of Chinese Academy of Sciences



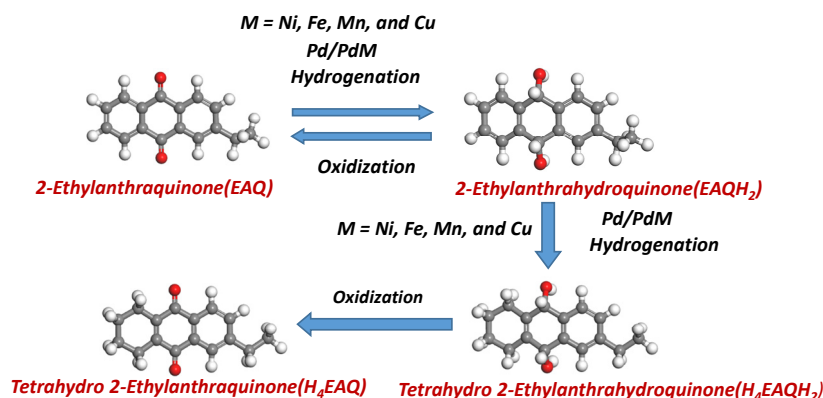
Ir-La-20%S/AC for methanol carbonylation

By addition of S species, the acid-promoted single-site Ir-La-S/AC catalyst, which displayed much high activity of carbonylation, was successfully prepared by co-impregnation method and applied in vapor-phase heterogeneous carbonylation of methanol.

*Chin. J. Catal.*, 2018, 39: 1070–1080 doi: 10.1016/S1872-2067(18)63035-9

### Hydrogenation of 2-ethylantraquinone with bimetallic monolithic catalysts: An experimental and DFT study

Yanyan Guo, Chengna Dai, Zhigang Lei \*  
Beijing University of Chemical Technology

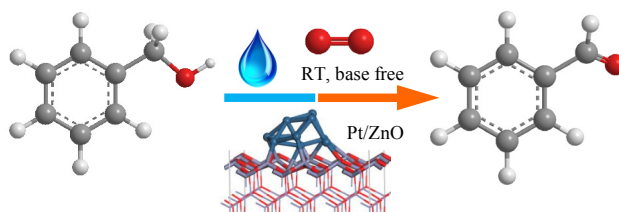


The high catalytic activity of Pd-Ni/SiO<sub>2</sub>/cordierite monolithic catalyst is attributed to the small particle size, the strong interaction between Pd and Ni of Pd-Ni alloy and stronger adsorption between Pd<sub>3</sub>Ni<sub>1</sub> (1 1 1) and the carbonyl group of eAQ.

*Chin. J. Catal.*, 2018, 39: 1081–1089 doi: 10.1016/S1872-2067(18)63022-0

### Green catalytic oxidation of benzyl alcohol over Pt/ZnO in base-free aqueous medium at room temperature

Juanjuan Liu, Shihui Zou \*, Jiachao Wu, Hisayoshi Kobayashi \*, Hongting Zhao, Jie Fan \*  
Hangzhou Dianzi University, China;  
Zhejiang University, China;  
Kyoto Institute of Technology, Japan

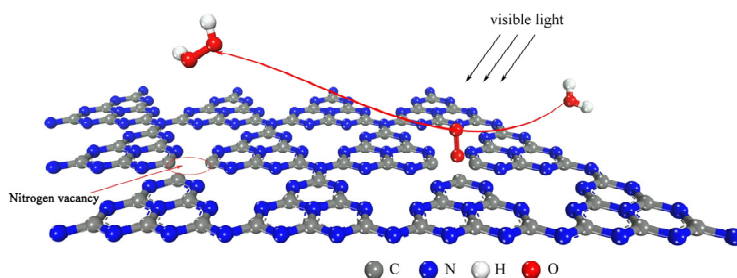


ZnO as a support can facilitate the adsorption of benzyl alcohol, which subsequently reacts with an activated oxygen species on a Pt catalyst to produce benzaldehyde at room temperature under base-free aqueous conditions.

*Chin. J. Catal.*, 2018, 39: 1090–1098 doi: 10.1016/S1872-2067(18)63046-3

### Preparation of N-vacancy-doped g-C<sub>3</sub>N<sub>4</sub> with outstanding photocatalytic H<sub>2</sub>O<sub>2</sub> production ability by dielectric barrier discharge plasma treatment

Xuhe Li, Jian Zhang \*, Feng Zhou, Hongliang Zhang, Jin Bai, Yanjuan Wang, Haiyan Wang  
Liaoning Shihua University; Fushun Research Institute of Petroleum and Petrochemicals, SINOPEC



N vacancies can chemisorb and activate O<sub>2</sub> molecules, thus promoting the transfer of photogenerated electrons from g-C<sub>3</sub>N<sub>4</sub> to adsorbed O<sub>2</sub> molecules, leading to enhanced photocatalytic H<sub>2</sub>O<sub>2</sub> production ability.

Zai-Fang Han, Xu-Liang Xue, Jian-Min Wu, Wan-Zhong Lang\*, Ya-Jun Guo  
Shanghai Normal University

*Chin. J. Catal.*, 2018, 39: 1129–1137 doi: 10.1016/S1872-2067(18)63069-4

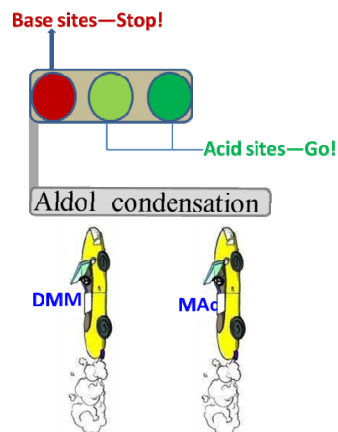
### One-step aldol condensation reaction of dimethoxymethane and methyl acetate over supported Cs/ZSM-35 zeolite catalysts

Zhanling Ma, Xiangang Ma, Hongchao Liu, Wenliang Zhu \*, Xinwen Guo, Zhongmin Liu \*

Dalian University of Technology;

Dalian Institute of Chemical Physics, Chinese Academy of Sciences;

University of Chinese Academy of Sciences



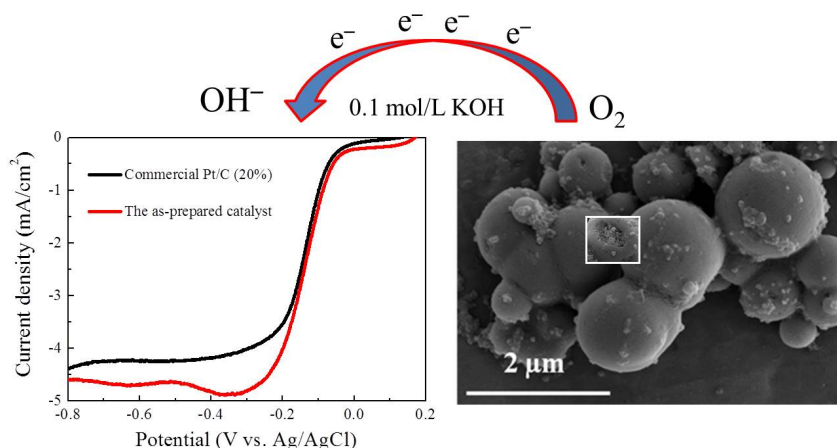
Acidity is indispensable for the aldol condensation reaction of DMM with MAc to prepare acrylic acid and its ester, whereas alkalinity is harmful.

*Chin. J. Catal.*, 2018, 39: 1138–1145 doi: 10.1016/S1872-2067(18)63078-5

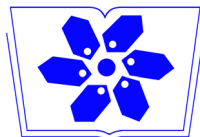
### Simple synthesis of nitrogen-doped carbon spheres as a highly efficient metal-free electrocatalyst for the oxygen reduction reaction

Jinhui Tong \*, Wenyan Li, Lili Bo, Wenhui Wang, Yuliang Li, Tao Li, Qi Zhang, Haiyan Fan \*

Northwest Normal University, China; Gansu Agricultural University, China; Nazarbayev University, Kazakhstan



Porous N-doped carbon spheres were simply synthesized using inexpensive raw materials. The optimal sample exhibited a more effective ORR catalytic activity than commercial 20%Pt/C in 0.1 mol/L KOH.



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