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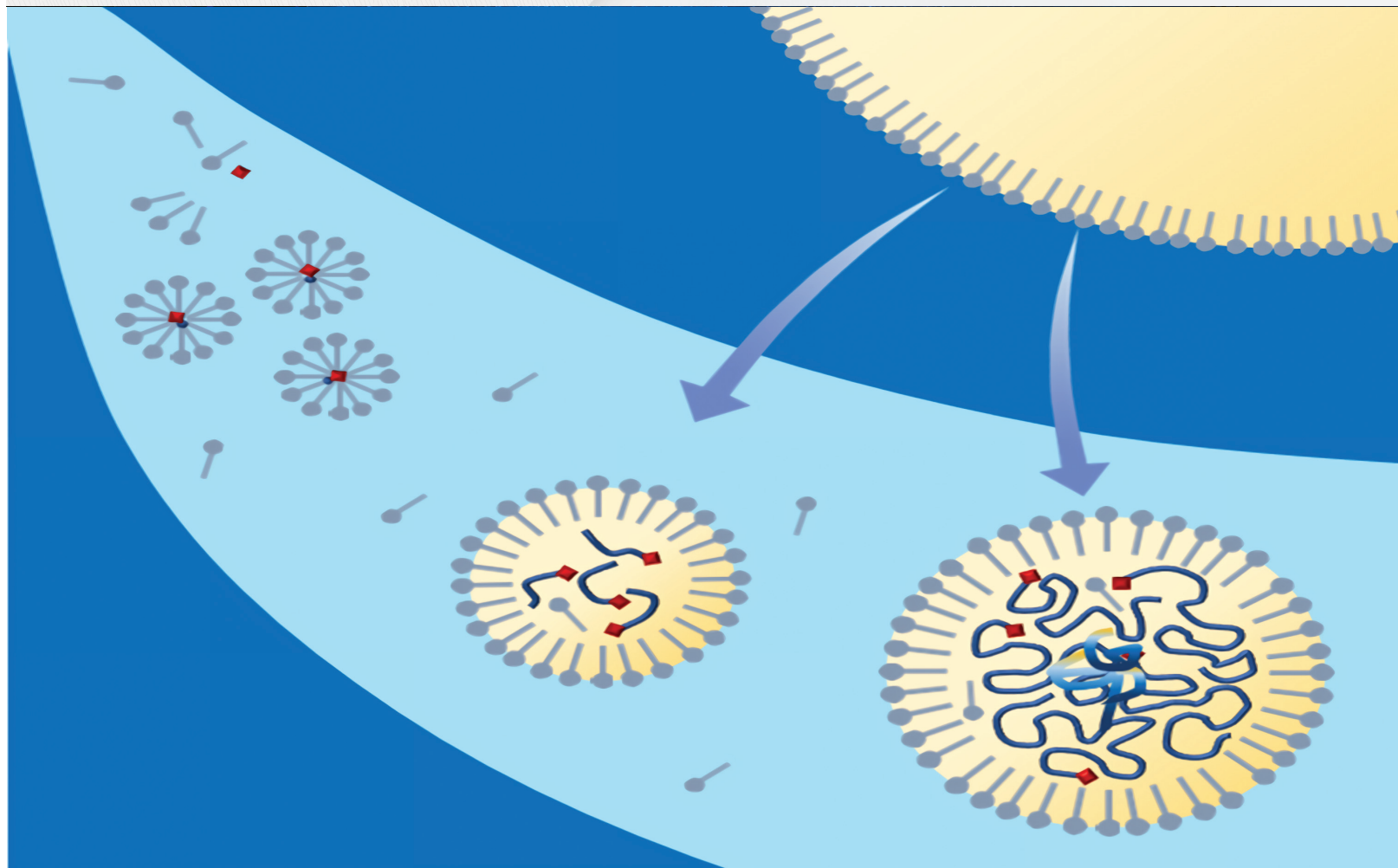
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## Chinese Chemical Letters

| Volume 30 | Number 12 | DECEMBER 2019 |



*Special column dedicated to  
Professor Shou-Kuan Fu's 80<sup>th</sup> Birthday*



#### PERSPECTIVE

Jianmin Ma et al.  
2020 roadmap on two-dimensional materials  
for energy storage and conversion

#### REVIEW

Wei-Min He et al.  
The concept of dual roles design in clean  
organic preparation

ISSN 1001-8417



Chinese Chemical Society

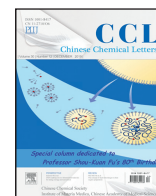
Institute of Materia Medica, Chinese Academy of Medical Sciences

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## Graphical Abstracts/Chin Chem Lett 30 (2019) iii–xxi

Special Column: Shou-Kuan Fu's 80<sup>th</sup> Birthday

## Editorial

## A Roadway of Exploring Polymer Science, a Lifetime of Nurturing Polymer Scientists

Changchun Wang<sup>a</sup>, Yonghui Deng<sup>b</sup><sup>a</sup> Department of Macromolecular Science, Fudan University, State Key Laboratory of Molecular Engineering of Polymers, Fudan University, Shanghai 200433, China<sup>b</sup> Department of Chemistry, Fudan University, State Key Laboratory of Molecular Engineering of Polymers, Fudan University, Shanghai 200433, China

Chinese Chemical Letters 30 (2019) 1995

## Review

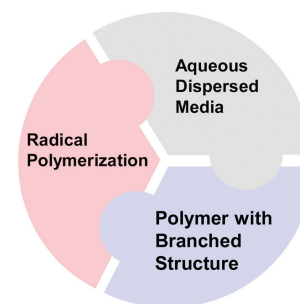
## A personal journey on using polymerization in aqueous dispersed media to synthesize polymers with branched structures

Haifeng Gao

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Several projects were discussed to demonstrate the intriguing power of radical polymerization in aqueous dispersed media to regulate the branched structures in functional polymeric nanomaterials.

Chinese Chemical Letters 30 (2019) 1996

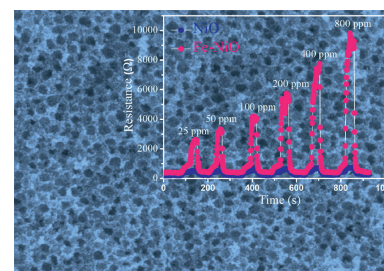


## Communications

## Amphiphilic block copolymers directed synthesis of mesoporous nickel-based oxides with bimodal mesopores and nanocrystal-assembled walls

Yuan Ren<sup>a</sup>, Xuanyu Yang<sup>a</sup>, Xinran Zhou<sup>a</sup>, Wei Luo<sup>b</sup>, Yi Zhang<sup>c</sup>, Xiaowei Cheng<sup>a</sup>, Yonghui Deng<sup>a</sup><sup>a</sup> Department of Chemistry, State Key Laboratory of Molecular Engineering of Polymers, Shanghai Key Laboratory of Molecular Catalysis and Innovative Materials, iChEM, Fudan University, Shanghai 200433, China<sup>b</sup> State Key Laboratory for Modification of Chemical Fibers and Polymer Materials, College of Materials Science and Engineering, Donghua University, Shanghai 201620, China<sup>c</sup> School of Materials Science and Energy Engineering, Foshan University, Foshan 528000, ChinaOrdered mesoporous Fe-doped NiO with dual mesopores, high surface area and well-interconnected crystalline porous frameworks have been synthesized via solvent evaporation-induced co-assembly (EICA) method, by using PS-*b*-P4VP as structure-directing agent, Ni(acac)<sub>2</sub> and Fe(acac)<sub>3</sub> as binary inorganic precursor, and showed superior ethanol sensing performances with good sensitivity, high selectivity and fast response-recovery dynamics.

Chinese Chemical Letters 30 (2019) 2003



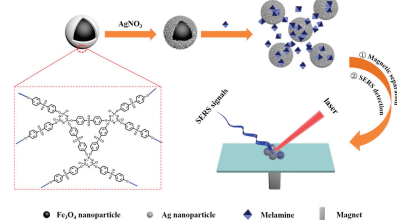
## Synthesis of magnetic polyphosphazene-Ag composite particles as surface enhanced Raman spectroscopy substrates for the detection of melamine

Ci Huang<sup>1</sup>, Feifei Lu<sup>1</sup>, Ke Xu, Guanjun Ding, Lijun You, Jiabin Wang, Qiqing Zhang

*Institute of Biomedical and Pharmaceutical Technology, College of Chemistry, Fuzhou University, Fuzhou 350002, China*

Preparation process of the MPZS-Ag composite particles based on polyphosphazene and application for the detection of melamine as a novel SERS substrate.

Chinese Chemical Letters 30 (2019) 2009



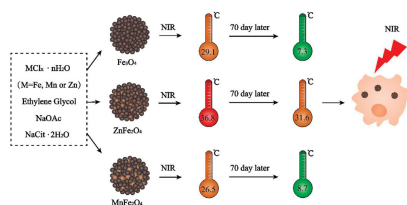
## Photothermal performance of MFe<sub>2</sub>O<sub>4</sub> nanoparticles

Kuang Wang, Peng Yang, Ranran Guo, Xianxian Yao, Wuli Yang

*State Key Laboratory of Molecular Engineering of Polymer and Department of Macromolecular Science, Fudan University, Shanghai 200433, China*

In this paper, we synthesized three kinds of ferrites and investigated their photothermal property. The result indicated that the photothermal effect of Fe<sub>3</sub>O<sub>4</sub> and MnFe<sub>2</sub>O<sub>4</sub> nanoparticles declined while that of ZnFe<sub>2</sub>O<sub>4</sub> nanoparticles maintained relatively stable after preservation for 70 days, and then ZnFe<sub>2</sub>O<sub>4</sub> nanoparticles could effectively kill cancer cells under NIR laser.

Chinese Chemical Letters 30 (2019) 2013



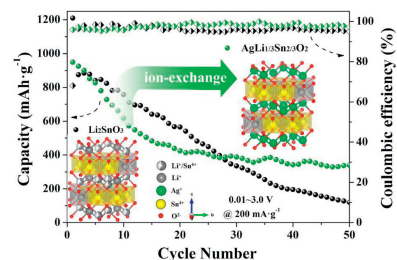
## Enhanced electrochemical performance and mechanism study of AgLi<sub>1/3</sub>Sn<sub>2/3</sub>O<sub>2</sub> for lithium storage

Fan Lu<sup>a,b</sup>, Jie Yang<sup>a</sup>, Ling Zhou<sup>a</sup>, Xinyue Wang<sup>a</sup>, Yin Yang<sup>b</sup>, Jumei Li<sup>a</sup>

<sup>a</sup> *School of Chemistry and Environmental Engineering, Wuhan Institute of Technology, Wuhan 430205, China*  
<sup>b</sup> *Institute of Advanced Synthesis, School of Chemistry and Molecular Engineering, Jiangsu National Synergetic Innovation Center for Advanced Materials, Nanjing Tech University, Nanjing 211816, China*

AgLi<sub>1/3</sub>Sn<sub>2/3</sub>O<sub>2</sub> with delafossite structure is prepared by treating Li<sub>2</sub>SnO<sub>3</sub> with molten AgNO<sub>3</sub> and it exhibits improved electrochemical performance compared to Li<sub>2</sub>SnO<sub>3</sub>.

Chinese Chemical Letters 30 (2019) 2017



## Silver nanoparticles embedded temperature-sensitive nanofibrous membrane as a smart free-standing SERS substrate

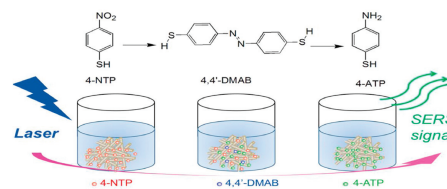
Xiaoyun Liu<sup>a</sup>, Liying Wang<sup>b</sup>, Siyuan Chen<sup>b</sup>, Liusheng Zha<sup>b</sup>

<sup>a</sup> *Research Center for Analysis and Measurement, Donghua University, Shanghai 201620, China*

<sup>b</sup> *State Key Laboratory for Modification of Chemical Fibers and Polymer Materials & College of Materials Science and Engineering, Donghua University, Shanghai 201620, China*

Silver nanoparticles (AgNPs) embedded temperature-sensitive nanofibrous membrane as SERS substrate is capable of real-time monitoring the reduction of 4-nitrothiophenol into 4-aminothiophenol catalyzed by its embedded AgNPs, and the detected intermediate indicates that the reaction proceeds via a condensation route.

Chinese Chemical Letters 30 (2019) 2021



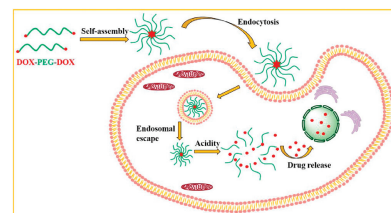
## Facile preparation of pH-responsive PEGylated prodrugs for activated intracellular drug delivery

Yue Song, Dian Li, Jinlin He, Mingzu Zhang, Peihong Ni

College of Chemistry, Chemical Engineering and Materials Science, State and Local Joint Engineering Laboratory for Novel Functional Polymeric Materials, Jiangsu Key Laboratory of Advanced Functional Polymer Design and Application, Suzhou Key Laboratory of Macromolecular Design and Precision Synthesis, Soochow University, Suzhou 215123, China

The acid-cleavable amphiphilic prodrug DOX-PEG-DOX self-assemble to form nanoparticles and enter the cell by endocytosis for the pH-triggered intracellular delivery of DOX.

Chinese Chemical Letters 30 (2019) 2027



## Facile synthesis of mesoporous WO<sub>3</sub>@graphene aerogel nanocomposites for low-temperature acetone sensing

Tao Zhao<sup>a</sup>, Yuan Ren<sup>b</sup>, Guangyou Jia<sup>a</sup>, Yuye Zhao<sup>a</sup>, Yuchi Fan<sup>c</sup>, Jianping Yang<sup>a</sup>, Xin Zhang<sup>a</sup>, Wan Jiang<sup>a,c,d</sup>, Lianjun Wang<sup>a</sup>, Wei Luo<sup>a,c</sup>

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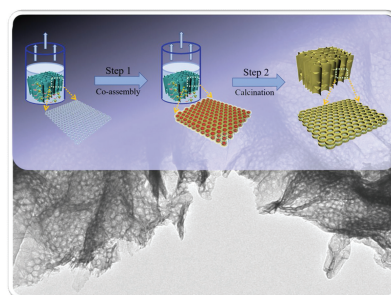
<sup>b</sup> Department of Chemistry, State Key Laboratory of Molecular Engineering of Polymers, iChEM, Shanghai Key Laboratory of Molecular Catalysis and Innovative Materials, Fudan University, Shanghai 200433, China

<sup>c</sup> Institute of Functional Materials, Donghua University, Shanghai 201620, China

<sup>d</sup> School of Materials Science and Engineering, Jingdezhen Ceramic Institute, Jingdezhen 333001, China

Ordered mesoporous tungsten oxide@graphene aerogel (mWO<sub>3</sub>@GA) nanocomposites were synthesized via an interface-induced co-assembly process, which show a high selectivity and great response to acetone at low temperature.

Chinese Chemical Letters 30 (2019) 2032



## Amphiphilic random polycarbonate self-assemble into GSH/pH dual responsive micelle-like aggregates in water

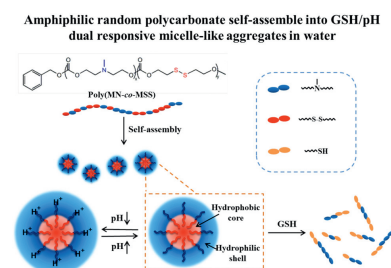
Jieni Hu<sup>a</sup>, Yue Xu<sup>a</sup>, Yan Zhang<sup>a,b</sup>

<sup>a</sup> Shanghai Key Laboratory of Advanced Polymeric Materials, Key Laboratory for Ultrafine Materials of Ministry of Education, School of Materials Science and Engineering, East China University of Science and Technology, Shanghai 200237, China

<sup>b</sup> Key Laboratory of Smart Drug Delivery (Fudan University), Ministry of Education, Shanghai 201203, China

We synthesized the GSH/pH responsive amphiphilic random polycarbonate poly(MN-co-MSS) with the disulfide and tertiary amine groups situated on the backbone. The poly(MN-co-MSS) was therefore a promising candidate for GSH/pH-sensitive drug carriers.

Chinese Chemical Letters 30 (2019) 2039



## Highly stable, active and recyclable solid acid catalyst based on polymer-coated magnetic composite particles

Jianxin Luo<sup>a,b</sup>, Xucheng Zhang<sup>b</sup>, Chunyan Zhang<sup>a</sup>, Tao Wang<sup>c</sup>, Xue Chen<sup>d</sup>, Hongyu Chen<sup>c</sup>, Steve King<sup>d</sup>, Changchun Wang<sup>b</sup>

<sup>a</sup> Department of Materials and Chemical Engineering, Hunan Institute of Technology, Hengyang 421002, China

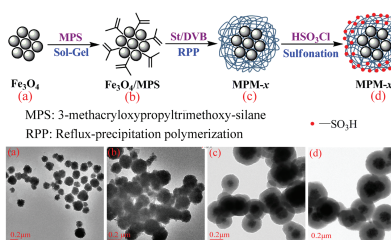
<sup>b</sup> State Key Laboratory of Molecular Engineering of Polymers, and Department of Macromolecular Science, Fudan University, Shanghai 200433, China

<sup>c</sup> Dow Chemical China Holding Company, Shanghai 201203, China

<sup>d</sup> Dow Chemical Company, Lake Jackson 77566, United States

Sulfonic acid-functionalized polymer-coated magnetic composite particles were prepared and applied as highly stable, active and recyclable magnetic solid acid catalyst for biodiesel preparation and biomass transformation.

Chinese Chemical Letters 30 (2019) 2043



## Recyclable, non-leaching antimicrobial magnetic nanoparticles

Chinese Chemical Letters 30 (2019) 2047

Wei Ye<sup>a,b</sup>, Lingren Wang<sup>a,b</sup>, Jie Zhao<sup>a,c</sup>, Quentin Q. Fang<sup>d</sup>, Weihua Ming<sup>a</sup>

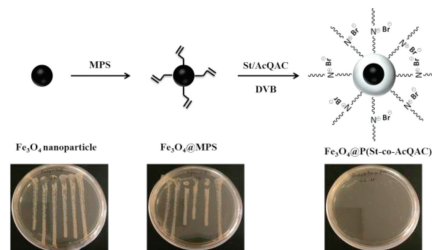
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<sup>b</sup> Department of Mechanical and Materials Engineering, Huaiyin Institute of Technology, Huaian 223001, China

<sup>c</sup> Key Laboratory of Bionic Engineering, Ministry of Education, Jilin University, Changchun 130022, China

<sup>d</sup> Department of Biology, Georgia Southern University, Statesboro, GA 30460, United States

Recyclable antimicrobial magnetic nanoparticles,  $\text{Fe}_3\text{O}_4@\text{P}(\text{St-co-AcQAC})$ , were prepared through surfactant-free seeded emulsion polymerization involving a polymerizable, hydrophobic quaternary ammonium compound (QAC). These antimicrobial magnetic nanoparticles demonstrated excellent antimicrobial activities against both Gram-positive and Gram-negative bacteria, and can be reused for multiple times.



## Highlight

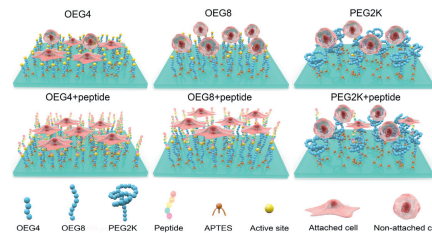
### Deciphering the impact of PEG antifouling layer on surface attached functional peptides in regulating cell behaviors

Chinese Chemical Letters 30 (2019) 2051

Fu-Jian Xu

Key Lab of Biomedical Materials of Natural Macromolecules, Beijing University of Chemical Technology, Ministry of Education. State Key Laboratory of Chemical Resource Engineering, Beijing University of Chemical Technology, Beijing Laboratory of Biomedical Materials, Beijing Advanced Innovation Center for Soft Matter Science and Engineering, Beijing University of Chemical Technology, Beijing 100029, China

In the 'noise' environment of culture medium, a medium length PEG antifouling layer (the OEG8 layer) can effectively resist the non-specific cell adhesion and present the optimal and genuine function of peptides in controlling cell behaviors.



## Perspectives

### 2020 roadmap on two-dimensional materials for energy storage and conversion

Chinese Chemical Letters 30 (2019) 2053

Baolin Xu<sup>a</sup>, Shihan Qi<sup>a</sup>, Mengmeng Jin<sup>b</sup>, Xiaoyi Cai<sup>c</sup>, Linfei Lai<sup>b,c</sup>, Zhouting Sun<sup>d</sup>, Xiaogang Han<sup>d</sup>, Zifeng Lin<sup>e</sup>, Hui Shao<sup>f,g</sup>, Peng Peng<sup>h</sup>, Zhonghua Xiang<sup>h</sup>, Johan E. ten Elshof<sup>f</sup>, Rou Tan<sup>i</sup>, Chen Liu<sup>j</sup>, Zhaoxi Zhang<sup>j</sup>, Xiaochuan Duan<sup>j</sup>, Jianmin Ma<sup>a,k</sup>

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<sup>f</sup> Université Paul Sabatier, Laboratoire CIRIMAT UMR CNRS 5085, Toulouse 31062, France

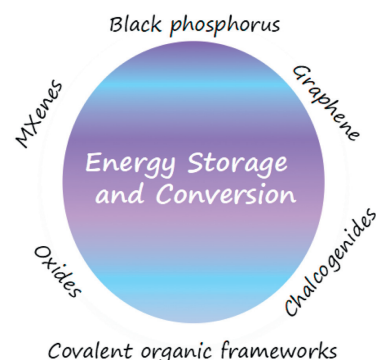
<sup>g</sup> Réseau sur le Stockage Electrochimique de l'Energie (RS2E), CNRS 3459, Amiens, France

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<sup>j</sup> Pen-Tung Sah Institute of Micro-Nano Science and Technology, Xiamen University, Xiamen 361005, China

In this roadmap, two-dimensional materials including graphene, black phosphorus, MXenes, covalent organic frameworks, oxides, chalcogenides, and others, are highlighted in energy storage and conversion.



## 2020 Roadmap on two-dimensional nanomaterials for environmental catalysis

Yulu Yang<sup>a</sup>, Mingguang Wua, Xingwang Zhu<sup>b</sup>, Hui Xu<sup>b</sup>, Si Ma<sup>c</sup>, Yongfeng Zhi<sup>c</sup>, Hong Xia<sup>d</sup>, Xiaoming Liu<sup>c</sup>, Jun Pan<sup>e</sup>, Jie-Yinn Tang<sup>f</sup>, Siang-Piao Chai<sup>f</sup>, Leonardo Palmisano<sup>g</sup>, Francesco Parrino<sup>h</sup>, Junli Liu<sup>i</sup>, Jianzhong Ma<sup>j</sup>, Ze-Lin Wang<sup>k</sup>, Ling Tan<sup>k</sup>, Yu-Fei Zhao<sup>k</sup>, Yu-Fei Song<sup>k</sup>, Pardeep Singh<sup>l,m</sup>, Pankaj Raizada<sup>l,m</sup>, Deli Jiang<sup>n</sup>, Di Li<sup>o</sup>, R.A. Geioushy<sup>p</sup>, Jizhen Ma<sup>q</sup>, Jintao Zhang<sup>q</sup>, Song Hu<sup>r</sup>, Rongjuan Feng<sup>s</sup>, Gang Liu<sup>t</sup>, Minghua Liu<sup>r,s</sup>, Zhenhua Li<sup>k</sup>, Mingfei Shao<sup>k</sup>, Neng Li<sup>u</sup>, Jiahe Peng<sup>u</sup>, Wee-Jun Ong<sup>v,w</sup>, Nikolay Kornienko<sup>x</sup>, Zhenyu Xing<sup>y</sup>, Xiujun Fan<sup>z</sup>, Jianmin Ma<sup>a,aa</sup>

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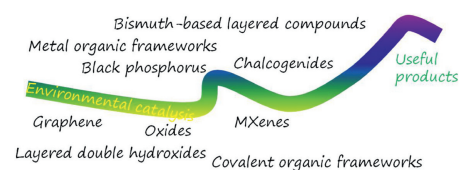
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This roadmap demonstrates a series of two-dimensional nanomaterials, such as graphene, black phosphorus, oxides, layered double hydroxides, chalcogenides, bismuth-based layered compounds, MXenes, metal organic frameworks, covalent organic frameworks, and others, for environmental catalysis.

Chinese Chemical Letters 30 (2019) 2065



## 2020 Roadmap on gas-involved photo- and electro- catalysis

Yulu Yang<sup>a</sup>, Yang Tang<sup>b</sup>, Haomin Jiang<sup>b</sup>, Yongmei Chen<sup>b</sup>, Pingyu Wan<sup>b</sup>, Maohong Fan<sup>c,d</sup>, Rongrong Zhang<sup>e,f</sup>, Sana Ullah<sup>e,f</sup>, Lun Pan<sup>e,f</sup>, Ji-Jun Zou<sup>e,f</sup>, Mengmeng Lao<sup>g</sup>, Wenping Sun<sup>g</sup>, Chao Yang<sup>h</sup>, Gengfeng Zheng<sup>h</sup>, Qiling Peng<sup>i</sup>, Ting Wang<sup>j</sup>, Yonglan Luo<sup>j</sup>, Xuping Sun<sup>j</sup>, Alexander S. Konev<sup>k</sup>, Oleg V. Levin<sup>k</sup>, Panagiotis Lianos<sup>l</sup>, Zhuofeng Hu<sup>m</sup>, Zhurui Shen<sup>n</sup>, Qinglan Zhao<sup>o</sup>, Ying Wang<sup>o</sup>, Nadia Todorova<sup>p</sup>, Christos Trapalis<sup>p</sup>, Matthew V. Sheridan<sup>q</sup>, Haipeng Wang<sup>r,s</sup>, Ling Zhang<sup>r,s</sup>, Songmei Sun<sup>r,s</sup>, Wenzhong Wang<sup>r,s</sup>, Jianmin Ma<sup>a,t</sup>

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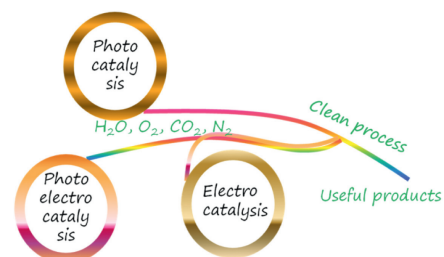
<sup>j</sup> Chemical Synthesis and Pollution Control Key Laboratory of Sichuan Province, College of Chemistry and Chemical Engineering, China West Normal University, Nanchong 637002, China

<sup>k</sup> Institute of Chemistry, St. Petersburg State University, 7/9 Universitetskaya emb., St. Petersburg, 199034, Russian Federation

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Chinese Chemical Letters 30 (2019) 2089



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In this roadmap, we address the development and perspectives of hydrogen evolution reaction, oxygen reduction reaction, oxygen evolution reaction, carbon dioxide reduction reaction and nitrogen reduction.

## 2020 roadmap on pore materials for energy and environmental applications

Chinese Chemical Letters 30 (2019) 2110

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<sup>d</sup> State Key Laboratory of Physical Chemistry of Solid Surfaces, and Department of Chemistry, College of Chemistry and Chemical Engineering, Xiamen University, Xiamen 361005, China

<sup>e</sup> Hefei National Laboratory for Physical Sciences at the Microscale, and School of Chemistry and Materials Science, University of Science and Technology of China, Hefei 230026, China

<sup>f</sup> Physical Science Division, Pacific Northwest National Laboratory, Richland, WA 99352, United States

<sup>g</sup> State Key Laboratory of Oil and Gas Reservoir Geology and Exploitation, Southwest Petroleum University, Chengdu 610500, China

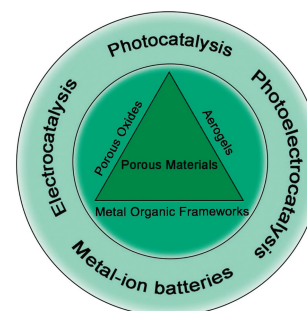
<sup>h</sup> The Center of New Energy Materials and Technology, School of Materials Science and Engineering, Southwest Petroleum University, Chengdu 610500, China

<sup>i</sup> School of Environmental Science and Engineering, Shanghai Jiao Tong University, Shanghai 200240, China

<sup>j</sup> Centre for Clean Environment and Energy, Gold Coast Campus, Griffith University, Gold Coast 4222, Australia

<sup>k</sup> Key Laboratory of Materials Processing and Mold (Zhengzhou University), Ministry of Education, Zhengzhou University, Zhengzhou 450002, China

Porous materials have attracted great attention in energy and environment applications. In this roadmap, several porous materials are discussed for energy storage and conversion. It will help the researchers to obtain them guidance from it in future.



## Reviews

### The adsorption of acidic gaseous pollutants on metal and nonmetallic surface studied by first-principles calculation: A review

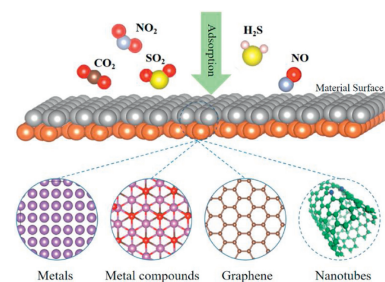
Chinese Chemical Letters 30 (2019) 2123

Xue Ye<sup>a</sup>, Shenggui Ma<sup>a,b</sup>, Xia Jiang<sup>a,b</sup>, Zhishan Yang<sup>a,b</sup>, Wenju Jiang<sup>a,b</sup>, Hualin Wang<sup>b</sup>

<sup>a</sup> College of Architecture and Environment, Sichuan University, Chengdu 610065, China

<sup>b</sup> National Engineering Research Center for Flue Gas Desulfurization, Sichuan University, Chengdu 610065, China

Recent advances of SO<sub>2</sub>, NO<sub>x</sub>, H<sub>2</sub>S and CO<sub>2</sub> adsorption on metal and nonmetallic surfaces by first-principles calculation are reviewed, and the common adsorption properties and calculation methods are summarized.



### The concept of dual roles design in clean organic preparation

Chinese Chemical Letters 30 (2019) 2132

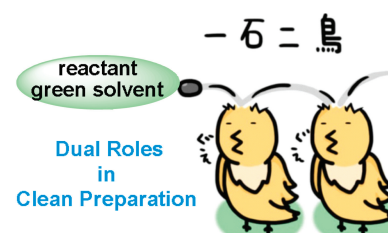
Zhong Cao<sup>a</sup>, Qin Zhu<sup>a,c</sup>, Ying-Wu Lin<sup>b</sup>, Wei-Min He<sup>a</sup>

<sup>a</sup> Hunan Provincial Key Laboratory of Materials Protection for Electric Power and Transportation, Changsha University of Science and Technology, Changsha 410114, China

<sup>b</sup> School of Chemistry and Chemical Engineering, University of South China, Hengyang 421001, China

<sup>c</sup> Department of Chemistry, Hunan University of Science and Technology, Xiangtan 411201, China

Herein we summarized some clean preparation examples to emphasize the concept of dual roles design (or named as "two birds one stone strategy") in green and sustainable chemistry. In these procedures, the chemical waste and production costs were reduced, and the energy efficiencies were improved.



## The electrochemical advanced oxidation processes coupling of oxidants for organic pollutants degradation: A mini-review

Jun Li<sup>a,b</sup>, Yangju Li<sup>a,b</sup>, Zhaokun Xiong<sup>a,b</sup>, Gang Yao<sup>b,c</sup>, Bo Lai<sup>a,b</sup>

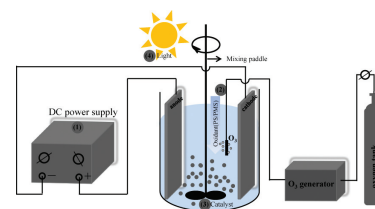
<sup>a</sup> State Key Laboratory of Hydraulics and Mountain River Engineering, College of Architecture and Environment, Sichuan University, Chengdu 610065, China

<sup>b</sup> Sino-German Centre for Water and Health Research, Sichuan University, Chengdu 610065, China

<sup>c</sup> Institute of Environmental Engineering, RWTH Aachen University, Aachen 52072, Germany

In this mini-review, the homogeneous and heterogeneous EAOPs-oxidant processes were summarized. The reaction mechanisms of different EAOPs combined with different oxidants are elucidated in detail, as well as the synergistic effect for improving the treatment efficiency.

Chinese Chemical Letters 30 (2019) 2139



## Recent application of biochar on the catalytic biorefinery and environmental processes

Hyung Won Lee<sup>a,1</sup>, Heejin Lee<sup>a,1</sup>, Young-Min Kim<sup>b</sup>, Rae-su Park<sup>c</sup>, Young-Kwon Park<sup>a</sup>

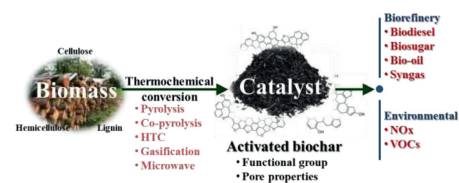
<sup>a</sup> School of Environmental Engineering, University of Seoul, Seoul 02504, Republic of Korea

<sup>b</sup> Department of Environmental Engineering, Daegu University, Gyeongsan 38452, Republic of Korea

<sup>c</sup> Department of Bioenvironmental & Chemical Engineering, Chosun College of Science & Technology, Gwangju 61453, Republic of Korea

Biochar, produced and activated from thermochemical methods, was applied as catalyst for catalytic biorefinery and environmental pollutant removal. In this review, recent advanced studies of biochar catalyst were discussed.

Chinese Chemical Letters 30 (2019) 2147



## DESs: Green solvents for transition metal catalyzed organic reactions

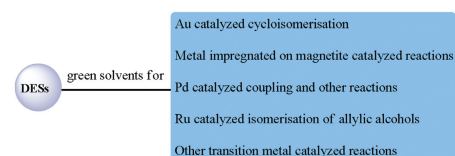
Lifen Peng<sup>a</sup>, Zhifang Hu<sup>a</sup>, Qichao Lu<sup>a</sup>, Zilong Tang<sup>a</sup>, Yinchun Jiao<sup>a</sup>, Xinhua Xu<sup>b</sup>

<sup>a</sup> Key Laboratory of Theoretical Organic Chemistry and Functional Molecule of Ministry of Education, Hunan Provincial Key Laboratory of Controllable Preparation and Functional Application of Fine Polymers, School of Chemistry and Chemical Engineering, Hunan University of Science and Technology, Xiangtan 411201, China

<sup>b</sup> State Key Laboratory of Chemo/Biosensing and Chemometrics, College of Chemistry and Chemical Engineering, Hunan University, Changsha 410082, China

The recent development about using DESs as green solvents in transition metal catalyzed organic reactions was highlighted, and Au, Metal impregnated on magnetite, Pd, Ru catalyzed organic reactions proceeded smoothly in DESs and gave corresponding products in reasonable yields. And in some cases, the catalytic systems could be recycled up to several times.

Chinese Chemical Letters 30 (2019) 2151



## Communications

### Synthesis and biological evaluation of indole-3-carboxamide derivatives as antioxidant agents

Erfang Huang<sup>a</sup>, Lan Zhang<sup>a</sup>, Chuying Xiao<sup>b</sup>, Guangpeng Meng<sup>a</sup>, Bingqi Zhang<sup>a</sup>, Jianshu Hu<sup>b</sup>, David Chi-Cheong Wan<sup>b</sup>, Qingguo Meng<sup>c</sup>, Zhe Jin<sup>a</sup>, Chun Hu<sup>a</sup>

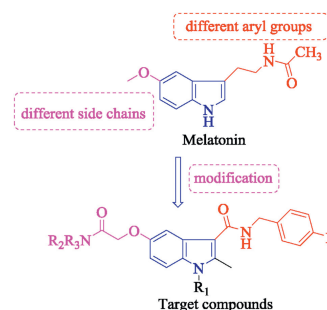
<sup>a</sup> Key Laboratory of Structure-based Drug Design & Discovery, Ministry of Education, Shenyang Pharmaceutical University, Shenyang 110016, China

<sup>b</sup> School of Biomedical Sciences, Faculty of Medicine, The Chinese University of Hong Kong, Hong Kong, China

<sup>c</sup> Department of Pharmacy, Yantai University, Yantai 264005, China

A novel series of indole-3-carboxamide derivatives (**6a–6l**) have been designed, synthesized and evaluated for their antioxidant activity against human neuroblastoma SH-SY5Y cell line using H<sub>2</sub>O<sub>2</sub> radical scavenging assay. Biological activity evaluation showed that compounds **6a**, **6f** and **6i** exhibited significant in vitro activities, which could have the potential to be developed for novel antioxidants.

Chinese Chemical Letters 30 (2019) 2157



### Design, synthesis and SAR study of novel sulfonylurea derivatives containing arylpyrimidine moieties as potential anti-phytopathogenic fungal agents

Wei Chen<sup>a,b</sup>, Yuxin Li<sup>b</sup>, Yunyun Zhou<sup>c</sup>, Yi Ma<sup>b</sup>, Zhengming Li<sup>b</sup>

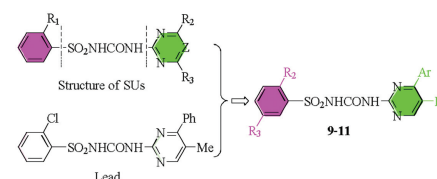
<sup>a</sup> School of Life Science and Engineering, Southwest Jiaotong University, Chengdu 610031, China

<sup>b</sup> State Key Laboratory of Elemento-Organic Chemistry, Nankai University, Tianjin 300071, China

<sup>c</sup> State Key Laboratory of Molecular Engineering of Polymers, Department of Macromolecular Science, Fudan University, Shanghai 200433, China

Three series of novel sulfonylureas (SUs) **9–11** containing aromatic-substituted pyrimidines were designed and synthesized. The 3D-QASR and molecular docking studies showed that SUs should be considered as potential anti-phytopathogenic fungal agents.

Chinese Chemical Letters 30 (2019) 2160





## Reductive immobilization and long-term remobilization of radioactive pertechnetate using bio-macromolecules stabilized zero valent iron nanoparticles

Haodong Ji<sup>a,b</sup>, Yangmo Zhu<sup>b</sup>, Jun Duan<sup>b</sup>, Wen Liu<sup>a,c</sup>, Dongye Zhao<sup>b,d</sup>

<sup>a</sup> The Key Laboratory of Water and Sediment Science, Ministry of Education, College of Environment Science and Engineering, Peking University, Beijing 100871, China

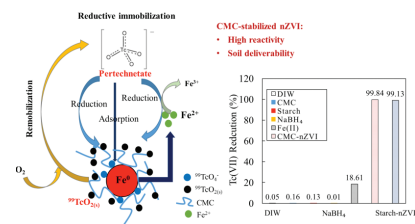
<sup>b</sup> Environmental Engineering Program, Department of Civil Engineering, Auburn University, Auburn, AL 36849, United States

<sup>c</sup> The Beijing Innovation Center for Engineering Science and Advanced Technology (BIC-ESAT), Peking University, Beijing 100871, China

<sup>d</sup> Institute of Environmental Science, Taiyuan University of Science and Technology, Taiyuan 030024, China

Carboxymethyl cellulose- and starch-stabilized nZVI nanoparticles were prepared and showed high efficiency for reductive immobilization of  $^{99}\text{TcO}_4^-$  in simulated groundwater.

Chinese Chemical Letters 30 (2019) 2163



## Design of a 1,8-naphthalimide-based OFF-ON type bioorthogonal reagent for fluorescent imaging in live cells

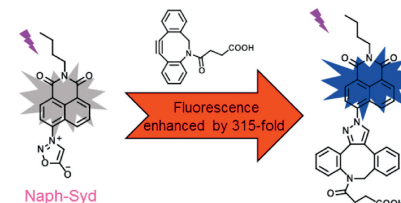
Zhuzhou Shao<sup>a,1</sup>, Chun Zhang<sup>a,1</sup>, Xiaohua Zhu<sup>b,1</sup>, Yajun Wang<sup>a,1</sup>, Wenyuan Xu<sup>a</sup>, Yu Chen<sup>a</sup>, Xiaoming Wang<sup>b</sup>, Hailiang Zhu<sup>b</sup>, Yong Liang<sup>a</sup>

<sup>a</sup> State Key Laboratory of Coordination Chemistry, Jiangsu Key Laboratory of Advanced Organic Materials, School of Chemistry and Chemical Engineering, Nanjing University, Nanjing, 210023, China

<sup>b</sup> State Key Laboratory of Pharmaceutical Biotechnology, School of Life Sciences, Nanjing University, Nanjing, 210023, China

A novel 1,8-naphthalimide-based OFF-ON type fluorogenic sydnone (Naph-Syd) as bioorthogonal probe has been developed, which can be triggered by fast cycloaddition reactions with strained alkynes for imaging of biomolecules in cellular environment.

Chinese Chemical Letters 30 (2019) 2169



## Enhanced modulation of magnetic field on surface plasmon coupled emission (SPCE) by magnetic nanoparticles

Kaixin Xie<sup>a,b</sup>, Shuohui Cao<sup>a</sup>, Yanyun Zhai<sup>a</sup>, Min Chen<sup>a</sup>, Xiaohui Pan<sup>a</sup>, Hitoshi Watarai<sup>c</sup>, Yaoqun Li<sup>a</sup>

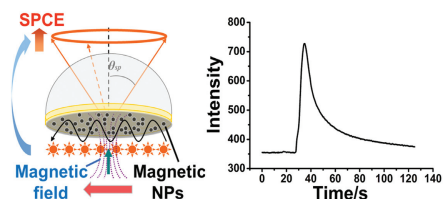
<sup>a</sup> Department of Chemistry and the MOE Key Laboratory of Spectrochemical Analysis & Instrumentation, College of Chemistry and Chemical Engineering, Xiamen University, Xiamen 361005, China

<sup>b</sup> Department of Chemistry, Taiyuan Normal University, Taiyuan 030031, China

<sup>c</sup> Institute for NanoScience Design, Osaka University, Osaka 560-8531, Japan

This article demonstrates the enhancement of magnetic nanoparticles on magnetic field modulation of surface plasmon coupled emission (SPCE), and this method is designed as a biosensor to prove the feasibility of magnetic field modulated SPCE to be employed in the field of biosensing and biodetection.

Chinese Chemical Letters 30 (2019) 2173



## Fabrication of niobium doped titanate nanoflakes with enhanced visible-light-driven photocatalytic activity for efficient ibuprofen degradation

Wen Liu<sup>b,c</sup>, Wei Zhang<sup>a</sup>, Mushi Liu<sup>b</sup>, Penghui Du<sup>b</sup>, Chenyuan Dang<sup>b</sup>, Jialiang Liang<sup>a</sup>, Yunyi Li<sup>a</sup>

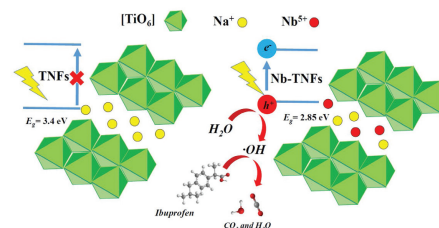
<sup>a</sup> Key Laboratory of the Three Gorges Reservoir Region's Eco-Environment of Ministry of Education, Chongqing University, Chongqing 400044, China

<sup>b</sup> The Key Laboratory of Water and Sediment Sciences, Ministry of Education, College of Environmental Sciences and Engineering, Peking University, Beijing 100871, China

<sup>c</sup> The Beijing Innovation Center for Engineering Science and Advanced Technology (BIC-ESAT), Peking University, Beijing 100871, China

Niobium doping increases the visible light adsorption of titanate nanoflakes, which greatly enhances the photocatalytic activity for ibuprofen elimination.

Chinese Chemical Letters 30 (2019) 2177



## Facile preparation of hydrophilic glutathione modified magnetic nanomaterials for specific enrichment of glycopeptides

He Qi<sup>a</sup>, Zheng Li<sup>a</sup>, Haijiao Zheng<sup>a</sup>, Li Fu<sup>b</sup>, Qiong Jia<sup>a,c</sup>

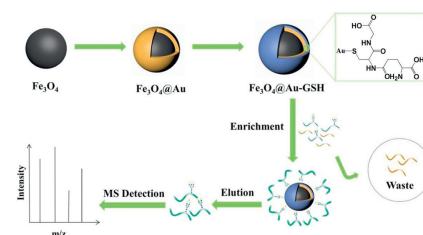
<sup>a</sup> College of Chemistry, Jilin University, Changchun 130012, China

<sup>b</sup> The Second Hospital of Jilin University, Changchun 130041, China

<sup>c</sup> Key Laboratory for Molecular Enzymology and Engineering of Ministry of Education, School of Life Sciences, Jilin University, Changchun 130012, China

Glutathione modified magnetic nanoparticles ( $\text{Fe}_3\text{O}_4\text{@Au-GSH}$ ) were synthesized through a simple process and exploited to enrich glycopeptides from complex samples.

Chinese Chemical Letters 30 (2019) 2181



## Surface molecular imprinting on g-C<sub>3</sub>N<sub>4</sub> photooxidative nanozyme for improved colorimetric biosensing

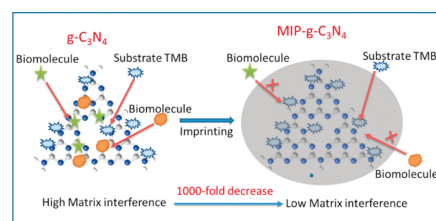
Yuanheng Wu<sup>a</sup>, Qiang Chen<sup>b</sup>, Shuang Liu<sup>a</sup>, Hua Xiao<sup>a</sup>, Menglin Zhang<sup>a</sup>, Xinfeng Zhang<sup>a,b</sup>

<sup>a</sup> College of Materials and Chemistry & Chemical Engineering, Chengdu University of Technology, Chengdu 610059, China

<sup>b</sup> College of Environment and Ecology, Chengdu University of Technology, Chengdu 610059, China

Molecular imprinting on g-C<sub>3</sub>N<sub>4</sub> leads to an over 1000-fold alleviation in matrix-interference from serum samples.

Chinese Chemical Letters 30 (2019) 2186



## Efficient activation of peroxymonosulfate by hollow cobalt hydroxide for degradation of ibuprofen and theoretical study

Mingfeng Ma<sup>a,b</sup>, Long Chen<sup>c</sup>, Jingzhu Zhao<sup>a,b</sup>, Wen Liu<sup>c,d,e</sup>, Haodong Ji<sup>c,d</sup>

<sup>a</sup> State Key Laboratory of Urban and Regional Ecology, Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, Beijing 100085, China

<sup>b</sup> University of Chinese Academy of Sciences, Beijing 100049, China

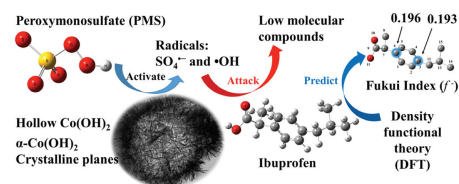
<sup>c</sup> The Key Laboratory of Water and Sediment Science, Ministry of Education, College of Environmental Sciences and Engineering, Peking University, Beijing 100871, China

<sup>d</sup> The Beijing Innovation Center for Engineering Science and Advanced Technology (BIC-ESAT), Peking University, Beijing 100871, China

<sup>e</sup> Beijing Engineering Research Center for Advanced Wastewater Treatment, Peking University, Beijing 100871, China

Hollow structure cobalt hydroxide (h-Co(OH)<sub>2</sub>) was synthesized via a solvothermal-hydrothermal method and presented high activation activity for peroxymonosulfate to degrade ibuprofen.

Chinese Chemical Letters 30 (2019) 2191



## Synergistic co-removal of zinc(II) and cefazolin by a Fe/amine-modified chitosan composite

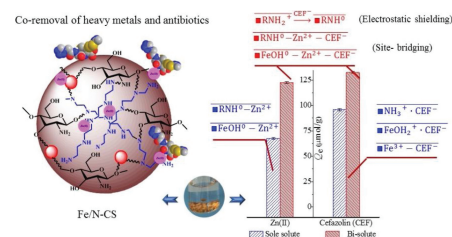
Chen Ling<sup>a</sup>, Yixuan Zhao<sup>a</sup>, Zixi Ren<sup>a</sup>, Jiangang Han<sup>a</sup>, Changqing Zhu<sup>b</sup>, Fu-Qiang Liu<sup>b</sup>

<sup>a</sup> College of Biology and the Environment, Nanjing Forestry University, Nanjing 210037, China

<sup>b</sup> State Key Laboratory of Pollution Control and Resource Reuse, School of the Environment, Nanjing University, Nanjing 210023, China

A novel Fe/amine modified chitosan composite (Fe/N-CS) was facilely synthesized and showed great potential in the efficient co-removal of heavy metal ions and antibiotics from wastewater.

Chinese Chemical Letters 30 (2019) 2196



## CRISPR-Cas13a mediated nanosystem for attomolar detection of canine parvovirus type 2

Haroon Khan<sup>a,1</sup>, Adeel Khan<sup>a,1</sup>, Yufeng Liu<sup>b,c</sup>, Su Wang<sup>b,c</sup>, Sumaira Bibi<sup>d</sup>, Hongpan Xu<sup>b</sup>, Yuan Liu<sup>a</sup>, Samran Durrani<sup>e</sup>, Lian Jin<sup>f</sup>, Nongyue He<sup>a,f,g</sup>, Tao Xiong<sup>c</sup>

<sup>a</sup> State Key Laboratory of Bioelectronics, School of Biological Science and Medical Engineering, Southeast University, Nanjing 210096, China

<sup>b</sup> Department of Clinical Laboratory, The Affiliated Drum Tower Hospital of Nanjing University Medical School, Nanjing 210008, China

<sup>c</sup> College of Life Science, Yangtze University, Jingzhou 434025, China

<sup>d</sup> Bio Resources Conservation Institute, National Agriculture Research Centre, Islamabad 350000, Pakistan

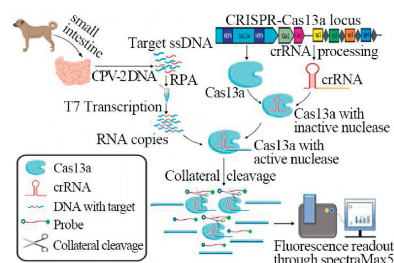
<sup>e</sup> Laboratory of Biointerface & Biomaterials, School of Biological Science and Medical Engineering, Southeast University, Nanjing 210096, China

<sup>f</sup> Hunan Key Laboratory of Biomedical Nanomaterials and Devices, Hunan University of Technology, Zhuzhou 412007, China

<sup>g</sup> National Center for International Bio-targeting Theranostics, Guangxi Key Laboratory of Bio-targeting Theranostics, Collaborative Innovation Center for Targeting Tumor Theranostics, Guangxi Medical University, Nanning 530021, China

The CPV-2 DNA extracted from dog's intestine was amplified using RPA and transcribed into an RNA copy. The RNA copy was incubated with Cas13a and crRNA, upon activation collateral cleavage activity of Cas13a cleaves all the target RNA and nonspecific RNA in the vicinity producing fluorescent signals within 30 min.

Chinese Chemical Letters 30 (2019) 2201



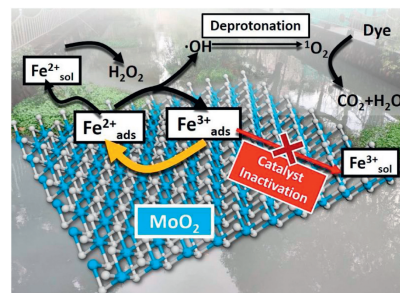
## Efficient Fe(III)/Fe(II) cycling triggered by MoO<sub>2</sub> in Fenton reaction for the degradation of dye molecules and the reduction of Cr(VI)

Bin Shen<sup>1</sup>, Chencheng Dong<sup>1</sup>, Jiahui Ji, Mingyang Xing, Jinlong Zhang

Key Laboratory for Advanced Materials and Joint International Research Laboratory of Precision Chemistry and Molecular Engineering, Feringa Nobel Prize Scientist Joint Research Center, School of Chemistry and Molecular Engineering, East China University of Science and Technology, Shanghai 200237, China

In this work, we develop an inorganic cocatalyst of commercial MoO<sub>2</sub> application in Fenton reaction, which can significantly enhance the Fe(III)/Fe(II) cycling efficiency to improve the oxidation activity for the remediation of Lissamine rhodamine B (L-RhB).

Chinese Chemical Letters 30 (2019) 2205



## Electrochemical sensor for Cd<sup>2+</sup> and Pb<sup>2+</sup> detection based on nano-porous pseudo carbon paste electrode

Yuan Liu<sup>a,b</sup>, Taotao Li<sup>c</sup>, Chuxuan Ling<sup>d</sup>, Zhu Chen<sup>a,b</sup>, Yan Deng<sup>a,b</sup>, Nongyue He<sup>a,b</sup>

<sup>a</sup> State Key Laboratory of Bioelectronics, Southeast University, Nanjing 210096, China

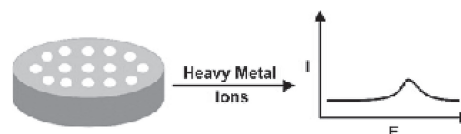
<sup>b</sup> Hunan Key Laboratory of Biomedical Nanomaterials and Devices, Hunan University of Technology, Zhuzhou 412007, China

<sup>c</sup> Hunan Provincial Key Lab of Dark Tea and Jin-Hua, School of Materials and Chemical Engineering, Hunan City University, Yiyang 413000, China

<sup>d</sup> School of Chemistry and Chemical Engineering, Southeast University, Nanjing 211189, China

An electrochemical sensor based on self-made nano-porous pseudo carbon paste electrode (nano-PPCPE) has been successfully developed, and used to detect Cd<sup>2+</sup> and Pb<sup>2+</sup>. The results showed that the electrodes can quantitatively detect trace Cd<sup>2+</sup> and Pb<sup>2+</sup>, and with satisfied limit of detection, which has great significance in electrochemical analysis and detection.

Chinese Chemical Letters 30 (2019) 2211



## CuFe<sub>2</sub>O<sub>4</sub>@GO nanocomposite as an effective and recoverable catalyst of peroxydisulfate activation for degradation of aqueous dye pollutants

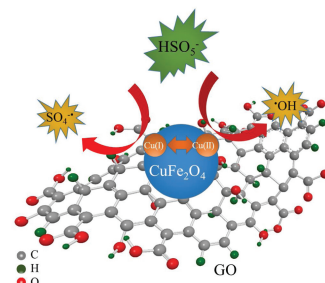
Xiaoman Lei<sup>a</sup>, Menghan You<sup>a</sup>, Fei Pan<sup>a</sup>, Min Liu<sup>a</sup>, Peng Yang<sup>a</sup>, Dongsheng Xia<sup>a</sup>, Qiang Li<sup>a</sup>, Yanting Wang<sup>b</sup>, Jie Fu<sup>a,b</sup>

<sup>a</sup> School of Environmental Engineering, Wuhan Textile University, Engineering Research Centre for Clean Production of Textile Dyeing and Printing, Ministry of Education, Wuhan 430073, China

<sup>b</sup> Department of Environmental Science & Engineering, Fudan University, Shanghai 200438, China

An effective and recoverable CuFe<sub>2</sub>O<sub>4</sub>@GO catalyst for PMS activation was synthesized and the underlying catalytic mechanism was revealed in this study.

Chinese Chemical Letters 30 (2019) 2216



## Elucidating dominant factors of $\text{PO}_4^{3-}$ , $\text{Cd}^{2+}$ and nitrobenzene removal by biochar: A comparative investigation based on distinguishable biochars

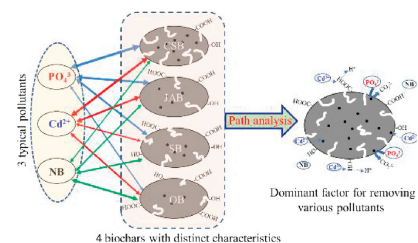
Zhanglin Liu<sup>a,b</sup>, Dong Tian<sup>a</sup>, Fei Shen<sup>a</sup>, Lulu Long<sup>a,b</sup>, Yanzong Zhang<sup>b</sup>, Gang Yang<sup>a,b</sup>, Yongmei Zeng<sup>a,b</sup>, Jing Zhang<sup>a,b</sup>, Jinsong He<sup>a,b</sup>, Ying Zhu<sup>a,b</sup>, Shihuai Deng<sup>a,b</sup>

<sup>a</sup> Institute of Ecological and Environmental Sciences, Sichuan Agricultural University, Chengdu 611130, China

<sup>b</sup> Rural Environment Protection Engineering & Technology Center of Sichuan Province, Sichuan Agricultural University, Chengdu 611130, China

Four distinct biochars were employed to remove three typical pollutants, meanwhile, path analysis, a multi-statistical regression method, was performed to elucidate the dominant factors of biochar adsorption. This work can provide a new insight to prepare a targeted biochar as adsorbents.

Chinese Chemical Letters 30 (2019) 2221



## A comparative study of bismuth-based photocatalysts with titanium dioxide for perfluorooctanoic acid degradation

Aziz-Ur-Rahim Bacha<sup>a,b</sup>, Iqra Nabi<sup>a</sup>, Zhaoyang Fu<sup>c</sup>, Kejian Li<sup>a</sup>, Hanyun Cheng<sup>a</sup>, Liwu Zhang<sup>a,b</sup>

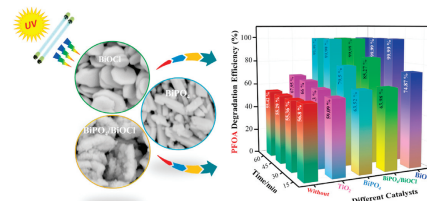
<sup>a</sup> Shanghai Key Laboratory of Atmospheric Particle Pollution and Prevention, Department of Environmental Science & Engineering, Fudan University, Shanghai 200433, China

<sup>b</sup> Shanghai Institute of Pollution Control and Ecological Security, Shanghai 200092, China

<sup>c</sup> Fudan International School (FDIS), Shanghai 200433, China

The fabricated bismuth-based photocatalysts presented an outstanding performance as compared to commercial  $\text{TiO}_2$  (P25) for PFOA degradation under 254 nm UV light irradiation.

Chinese Chemical Letters 30 (2019) 2225



## Efficient decomposition of sulfamethoxazole in a novel neutral Fered-Fenton like/oxalate system based on effective heterogeneous-homogeneous iron cycle

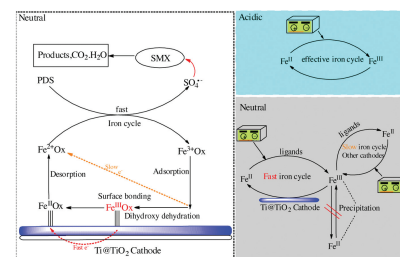
Chen Wang<sup>a,b,1</sup>, Yubei Liu<sup>a,1</sup>, Tao Zhou<sup>a</sup>, Mingjie Huang<sup>a</sup>, Juan Mao<sup>a,b</sup>, Xiaohui Wu<sup>a,b</sup>

<sup>a</sup> School of Environmental Science and Engineering, Huazhong University of Science and Technology, Wuhan 430074, China

<sup>b</sup> Key Laboratory of Water and Wastewater Treatment (HUST), MOHURD, Wuhan 430074, China

Based on effective heterogeneous-homogeneous iron cycle, efficient SMX degradation was achieved in a novel neutral Fered-Fenton like system adopting  $\text{Ti}@\text{TiO}_2$  cathode.

Chinese Chemical Letters 30 (2019) 2231



## Measurements of $\text{HO}_2$ uptake coefficient on aqueous $(\text{NH}_4)_2\text{SO}_4$ aerosol using aerosol flow tube with LIF system

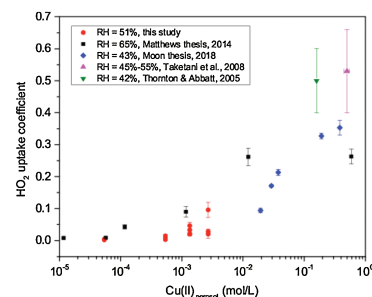
Qi Zou<sup>a</sup>, Huan Song<sup>a</sup>, Mingjin Tang<sup>b</sup>, Keding Lu<sup>a</sup>

<sup>a</sup> College of Environmental Sciences and Engineering, Peking University, Beijing 100871, China

<sup>b</sup> State Key Laboratory of Geochemistry and Guangdong Key Laboratory of Environmental Protection and Resources Utilization, Guangzhou Institute of Geochemistry, Chinese Academy of Sciences, Guangzhou 510640, China

The  $\gamma(\text{HO}_2)$  was elevated with increase of  $\text{Cu}(\text{II})$  concentrations in aqueous  $(\text{NH}_4)_2\text{SO}_4$  aerosol. The threshold of  $\text{Cu}(\text{II})$  concentration was  $10^{-3}$  mol/L for the dramatic increase of  $\gamma(\text{HO}_2)$  to 0.1, suggesting sensitive  $\gamma(\text{HO}_2)$  value to concentration of transition metal ions in aerosol.

Chinese Chemical Letters 30 (2019) 2236



## Hydroxyl radical formation upon dark oxidation of reduced iron minerals: Effects of iron species and environmental factors

Ailing Zhu<sup>a,b</sup>, Yingying Guo<sup>b,c</sup>, Guangliang Liu<sup>a,d</sup>, Maoyong Song<sup>b,c</sup>, Yong Liang<sup>a</sup>, Yong Cai<sup>b,c,d</sup>, Yongguang Yin<sup>a,b,c</sup>

<sup>a</sup> Institute of Environment and Health, Jiangnan University, Wuhan 430056, China

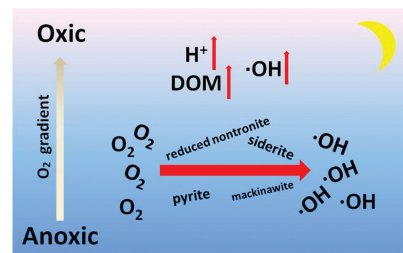
<sup>b</sup> State Key Laboratory of Environmental Chemistry and Ecotoxicology, Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, Beijing 100085, China

<sup>c</sup> Laboratory of Environmental Nanotechnology and Health Effect, Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, Beijing 100085, China

<sup>d</sup> Department of Chemistry and Biochemistry, Florida International University, Miami, FL 33199, United States

Dark oxidation of reduced iron minerals can produce hydroxyl radical under ambient conditions.

Chinese Chemical Letters 30 (2019) 2241



## Fabrication of Cu/rGO/MoS<sub>2</sub> nano hybrid with energetic visible-light response for degradation of rhodamine B

Huanjing Liang<sup>a,b,1</sup>, Peng Hua<sup>a,1</sup>, Yufei Zhou<sup>b</sup>, Zhimin Fu<sup>c</sup>, Jiaoning Tang<sup>a</sup>, Junfeng Niu<sup>b</sup>

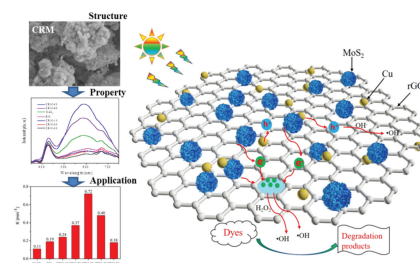
<sup>a</sup> Shenzhen Key of Special Functional Materials, College of Materials Science and Engineering, Shenzhen University, Shenzhen 518060, China

<sup>b</sup> Research Center for Eco-Environmental Engineering, Dongguan University of Technology, Dongguan 523808, China

<sup>c</sup> Ministry of Education Key Laboratory of Ecology and Resource Use of the Mongolian Plateau, School of Ecology and Environment, Inner Mongolia University, Hohhot 010021, China

A novel visible-light-driven Cu/rGO/MoS<sub>2</sub> ternary nanostructure as a photocatalyst with high catalytic activity towards degradation of rhodamine B was successfully synthesized through a facile solvothermal method.

Chinese Chemical Letters 30 (2019) 2245



## Geometry, stability and aromaticity of $\beta$ -diketiminate-coordinated alkaline-earth compounds

Yuanyuan Li<sup>a,b,d</sup>, Haohua Chen<sup>c</sup>, Lingbo Qu<sup>d</sup>, Ruopeng Bai<sup>c</sup>, Yu Lan<sup>c,d</sup>

<sup>a</sup> Department of Biological and Chemical Engineering, Chongqing University of Education, Chongqing 400067, China

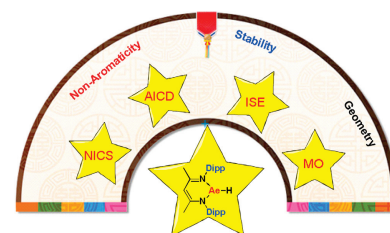
<sup>b</sup> Cooperative Innovation Center of Lipid Resources and Children's Daily Chemicals, Chongqing University of Education, Chongqing 400067, China

<sup>c</sup> School of Chemistry and Chemical Engineering, Chongqing University, Chongqing 401331, China

<sup>d</sup> College of Chemistry and Molecular Engineering, Zhengzhou University, Zhengzhou 450006, China

The nucleus-independent chemical shifts (NICS), anisotropy of the induced current density (AICD), and molecular orbital (MO) analyses demonstrated the non-aromaticity of the  $\beta$ -diketiminate-coordinated Ae compounds. The DFT calculations revealed relatively high isomerization energies (ISE) for  $\beta$ -diketiminate-coordinated Ae compounds, which contribute to their stability.

Chinese Chemical Letters 30 (2019) 2249



## The impact of vertical $\pi$ -extension on redox mechanisms of aromatic diimide dyes

Lei Li<sup>a</sup>, Juejun Wang<sup>a</sup>, Mengting Chen<sup>a</sup>, Yong Chen<sup>a</sup>, Wangchuan Xiao<sup>c</sup>, Dongyang Chen<sup>b</sup>, Meijin Lin<sup>a</sup>

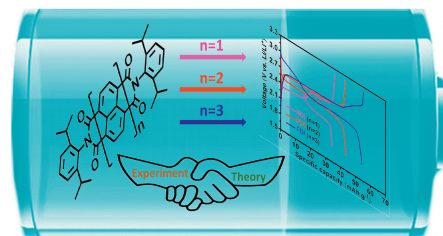
<sup>a</sup> College of Chemistry, Fuzhou University, Fuzhou 350116, China

<sup>b</sup> College of Materials Science and Engineering, Fuzhou University, Fuzhou 350116, China

<sup>c</sup> School of Resources and Chemical Engineering, Sanming Institute of Fluorochemical Industry, Sanming University, Sanming 365004, China

The impact of vertical  $\pi$ -extension on redox mechanisms of aromatic diimides in the organic lithium-ion batteries have been carefully studied by a combined experiment and theoretical analyses.

Chinese Chemical Letters 30 (2019) 2254



## Clean preparation of S-thiocarbamates with *in situ* generated hydroxide in 2-methyltetrahydrofuran

Wen-Hu Bao<sup>a,1</sup>, Zheng Wang<sup>a,1</sup>, Xiao Tang<sup>a</sup>, Yun-Fu Zhang<sup>a</sup>, Jia-Xi Tan<sup>a,c</sup>, Qin Zhu<sup>b</sup>, Zhong Cao<sup>b</sup>, Ying-Wu Lin<sup>d</sup>, Wei-Min He<sup>a</sup>

<sup>a</sup> Department of Chemistry, Hunan University of Science and Engineering, Yongzhou 425100, China

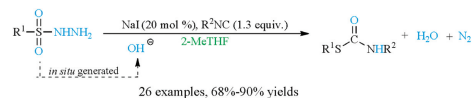
<sup>b</sup> Hunan Provincial Key Laboratory of Materials Protection for Electric Power and Transportation, Changsha University of Science and Technology, Changsha 410114, China

<sup>c</sup> School of Chemistry and Chemical Engineering, Hunan University of Science and Technology, Xiangtan 411201, China

<sup>d</sup> School of Chemistry and Chemical Engineering, University of South China, Hengyang 421001, China

A simple and clean protocol for the synthesis of various alkyl and (hetero)aryl S-thiocarbamates was established. The usage of *in situ* generated hydroxide as both an oxygen source and hydrogen source as well as biomass-derived 2-methyltetrahydrofuran as a green reaction medium, the avoidance of phosphorus-containing reductant, and the generation of harmless water and nitrogen as the side-products have given the present method atom-economy and environmental friendliness.

Chinese Chemical Letters 30 (2019) 2259



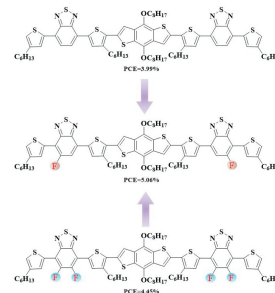
## Effective design of A-D-A small molecules for high performance organic solar cells *via* F atom substitution and thiophene bridge

Anwang He, Yuancheng Qin, Weili Dai, Dan Zhou, Jianping Zou

Key Laboratory of Jiangxi Province for Persistent Pollutants Control and Resources Recycle, Nanchang Hangkong University, Nanchang 330063, China

Novel A-D-A-type small molecule donors employ thiophene bridge and F-substitution to improve the power conversion efficiency in organic solar cell.

Chinese Chemical Letters 30 (2019) 2263



## Visual recognition of melamine in milk via selective metallo-hydrogel formation

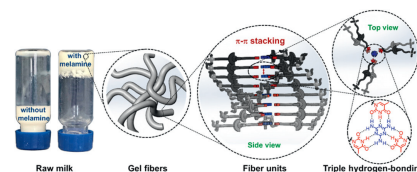
Xiaoling Bao<sup>a,1</sup>, Jianhong Liu<sup>b,1</sup>, Qingshu Zheng<sup>b</sup>, Wei Pei<sup>a</sup>, Yimei Yang<sup>a</sup>, Yanyun Dai<sup>a</sup>, Tao Tu<sup>b</sup>

<sup>a</sup> Institute of Quality Inspection of Food and Cosmetics, Shanghai Institute of Quality Inspection and Technical Research, Shanghai 200233, China

<sup>b</sup> Shanghai Key Laboratory of Molecular Catalysis and Innovative Materials, Department of Chemistry, Fudan University, Shanghai 200438, China

A novel protocol allowing convenient and highly selective visual recognition of melamine in raw milk via selective metallo-hydrogel formation at a concentration as low as 10 ppm without any tedious pretreatment has been developed.

Chinese Chemical Letters 30 (2019) 2266



## Synthesis, properties and application of novel 5,6,5,6-tetracyclic pyrazine/pyrrole-fused unsymmetric bis(BF<sub>2</sub>) fluorescent dyes: BOPYPYs

Xindong Jiang<sup>a,c</sup>, Shuai Yue<sup>a</sup>, Kepeng Chen<sup>b</sup>, Zhumei Shao<sup>a</sup>, Chen Li<sup>a</sup>, Yajun Su<sup>a</sup>, Jianzhang Zhao<sup>b</sup>

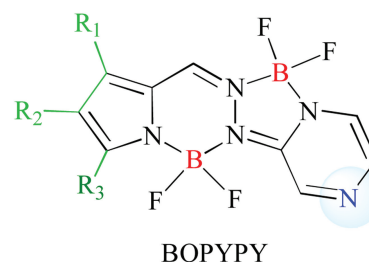
<sup>a</sup> College of Applied Chemistry, Shenyang University of Chemical Technology, Shenyang 110142, China

<sup>b</sup> State Key Laboratory of Fine Chemicals, Dalian University of Technology, Dalian 116024, China

<sup>c</sup> Department of Chemistry, Graduate School of Science, Hiroshima University, Higashi-Hiroshima 739-8526, Japan

Novel 5,6,5,6-tetracyclic pyrazine/pyrrole-fused unsymmetric bis(BF<sub>2</sub>) fluorescent dyes (BOPYPYs) were synthesized by reaction of pyrrole-2-carboxaldehyde with 1-(pyrazin-2-yl) hydrazine in the presence of Et<sub>3</sub>N·BF<sub>3</sub>·Et<sub>2</sub>O for the first time.

Chinese Chemical Letters 30 (2019) 2271



## Promoting electrochemical conversion of CO<sub>2</sub> to formate with rich oxygen vacancies in nanoporous tin oxides

Tengfei Gao<sup>a,1</sup>, Anuj Kumar<sup>a,1</sup>, Zhicheng Shang<sup>a</sup>, Xinxuan Duan<sup>a</sup>, Hangchao Wang<sup>a</sup>, Shiyuan Wang<sup>a</sup>, Shengfu Ji<sup>b</sup>, Dongpeng Yan<sup>b,c</sup>, Liang Luo<sup>a</sup>, Wen Liu<sup>a</sup>, Xiaoming Sun<sup>a</sup>

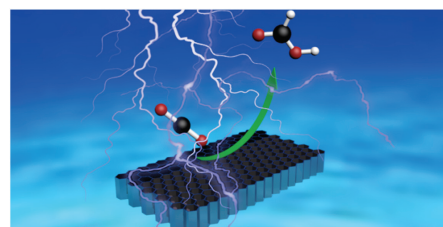
<sup>a</sup> State Key Laboratory of Chemical Resource Engineering, Beijing Advanced Innovation Center for Soft Matter Science and Engineering, Beijing University of Chemical Technology, Beijing 10002, China

<sup>b</sup> State Key Laboratory of Chemical Resource Engineering, Beijing University of Chemical Technology, Beijing 100029, China

<sup>c</sup> Beijing Key Laboratory of Energy Conversion and Storage Materials, College of Chemistry, Beijing Normal University, Beijing 100875, China

In CO<sub>2</sub> electrochemical reduction, nanoporous SnO<sub>x</sub>-300 with high-level oxygen vacancies exhibited a partial current density of 15 mA/cm<sup>2</sup> with the Faradaic efficiency (FE) of 88.6% for HCOOH production at 0.98 V versus RHE.

Chinese Chemical Letters 30 (2019) 2274



## Friedel-Crafts trifluoromethylthiolation of electron-rich (hetero)arenes with trifluoromethylthio-saccharin in 2,2,2-trifluoroethanol (TFE)

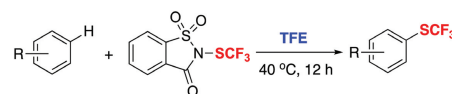
Shiyao Lu<sup>a</sup>, Wenbo Chen<sup>a</sup>, Qilong Shen<sup>b</sup>

<sup>a</sup> Shanghai Key Laboratory of Materials Protection and Advanced Materials in Electric Power, Shanghai University of Electric Power, Shanghai 200090, China

<sup>b</sup> Key Laboratory of Organofluorine Chemistry, Center for Excellence in Molecular Synthesis, Shanghai Institute of Organic Chemistry, University of Chinese Academy of Sciences, Chinese Academy of Sciences, Shanghai 200032, China

A promoter-free Friedel-Crafts trifluoromethylthiolation of electron-rich arenes and heteroarenes with *N*-trifluoromethylthiosaccharin **5** using 2,2,2-trifluoroethanol (TFE) as the solvent was described.

Chinese Chemical Letters 30 (2019) 2279



## Highly selective oxidation of amines to imines by Mn<sub>2</sub>O<sub>3</sub> catalyst under eco-friendly conditions

Fushan Chen<sup>a,b</sup>, Tao Yang<sup>b</sup>, Songlin Zhao<sup>a,c</sup>, Taotao Jiang<sup>a</sup>, Lu Yu<sup>a</sup>, Houfeng Xiong<sup>b</sup>, Chuankun Guo<sup>b</sup>, Yufang Rao<sup>b</sup>, Yan Liu<sup>b</sup>, Liu Liu<sup>a</sup>, Jian Zhou<sup>a</sup>, Pengxiang Tu<sup>a</sup>, Jun Ni<sup>a</sup>, Qunfeng Zhang<sup>a</sup>, Xiaonian Li<sup>a</sup>

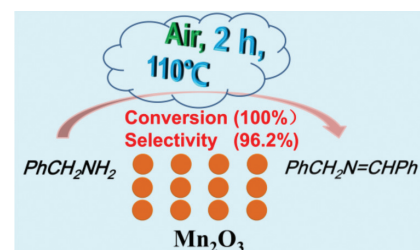
<sup>a</sup> Industrial Catalysis Institute of Zhejiang University of Technology, Hangzhou 310014, China

<sup>b</sup> Jiangxi Province Engineering Research Center of Ecological Chemical Industry, Jiujiang University, Jiujiang 332005, China

<sup>c</sup> School of Pharmaceutical and Chemical Engineering, Taizhou University, Taizhou 318000, China

Mn<sub>2</sub>O<sub>3</sub> calcined at 450 °C by a simple template-free oxalate route gave 96.2% selectivity of imine at 100% conversion of benzylamine. The high selectivity of the imines clearly depended on the Mn<sup>3+</sup>/Mn<sup>4+</sup> ratio. The probable reaction pathway for amines oxidation catalyzed by manganese oxides was proposed for the first time. This catalytic process was carried out under milder conditions, no base additives, and air as the only oxidant.

Chinese Chemical Letters 30 (2019) 2282



## TsCl-promoted sulfonylation of quinoline N-oxides with sodium sulfonates in water

Sha Peng<sup>a</sup>, Yan-Xi Song<sup>a</sup>, Jun-Yi He<sup>b</sup>, Shan-Shan Tang<sup>a</sup>, Jia-Xi Tan<sup>c</sup>, Zhong Cao<sup>b</sup>, Ying-Wu Lin<sup>d</sup>, Wei-Min He<sup>a</sup>

<sup>a</sup> Department of Chemistry, Hunan University of Science and Engineering, Yongzhou 425100, China

<sup>b</sup> Hunan Provincial Key Laboratory of Materials Protection for Electric Power and Transportation, Changsha University of Science and Technology, Changsha 410114, China

<sup>c</sup> School of Chemistry and Chemical Engineering, Hunan University of Science and Technology, Xiangtan 411201, China

<sup>d</sup> School of Chemistry and Chemical Engineering, University of South China, Hengyang 421001, China

An eco-friendly protocol for the synthesis of various 2-sulfonyl quinolines/pyridines through sulfonylation of heteroaromatic N-oxides with sodium sulfonates in water under metal- and oxidant-free conditions has been developed. The high reaction efficiency, operational simplicity, short reaction time, air- and moisture-insensitive conditions and remarkable functional group compatibility make the developed protocol very attractive for the preparation of 2-sulfonyl N-heteroaromatic compounds.

Chinese Chemical Letters 30 (2019) 2287



## Temperature-sensitive polypeptide brushes-coated mesoporous silica nanoparticles for dual-responsive drug release

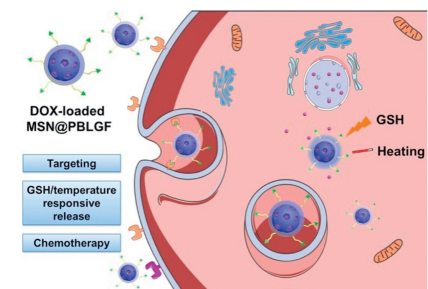
Yahan Cui<sup>a</sup>, Rong Deng<sup>a</sup>, Xiangshuai Li<sup>a</sup>, Xinghuo Wang<sup>a</sup>, Qiong Jia<sup>a</sup>, Emilie Bertrand<sup>b</sup>, Kamel Meguellati<sup>a</sup>, Ying-Wei Yang<sup>a</sup>

<sup>a</sup> International Joint Research Laboratory of Nano-Micro Architecture Chemistry (NMAC), College of Chemistry, Jilin University, Changchun 130012, China

<sup>b</sup> Key Laboratory of Polymer Ecomaterials, Changchun Institute of Applied Chemistry, Chinese Academy of Science, Changchun 130022, China

A multifunctional nanohybrid based on mesoporous silica nanoparticle and biocompatible polypeptide was fabricated for targeted and dual-responsive therapy of tumor cells.

Chinese Chemical Letters 30 (2019) 2291



## Visible-light-promoted sulfonylmethylation of imidazopyridines

Xia Mi<sup>a</sup>, Yuanfang Kong<sup>a</sup>, Jingyu Zhang<sup>a</sup>, Chao Pi<sup>b</sup>, Xiuling Cui<sup>b</sup>

<sup>a</sup> College of Pharmacy, Henan University of Chinese Medicine, Zhengzhou 450046, China

<sup>b</sup> College of Chemistry, Henan Key Laboratory of Chemical Biology and Organic Chemistry, Key Laboratory of Applied Chemistry of Henan Universities, Zhengzhou University, Zhengzhou 450052, China

An effective method for the synthesis of sulfonylmethylated imidazopyridines was described with Ir(ppy)<sub>3</sub> as photocatalyst under visible light irradiation. This reaction could be performed smoothly under mild conditions and has a wide substrate scope and good functional group tolerance. Meanwhile, desulfonylation of several selected compounds was easily achieved under reducing conditions to unveil the methyl group. The method may be an attractive strategy to install a methyl group on imidazopyridines.

Chinese Chemical Letters 30 (2019) 2295





## Stimuli-responsive fluorescent supramolecular polymer network based on a monofunctionalized leaning tower[6]arene

Zengjie Liu<sup>a</sup>, Jiarui Wu<sup>a</sup>, Chunyu Wang<sup>c</sup>, Jie Yang<sup>a</sup>, Yan Wang<sup>a</sup>, Ying-Wei Yang<sup>a,b,d</sup>

<sup>a</sup> State Key Laboratory of Inorganic Synthesis and Preparative Chemistry, International Joint Research Laboratory of Nano-Micro Architecture Chemistry

(NMAC), College of Chemistry, Jilin University, Changchun 130012, China

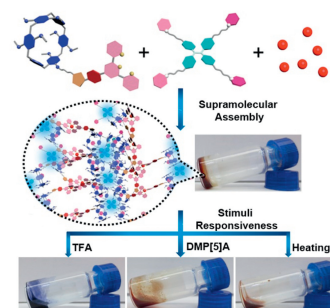
<sup>b</sup> The State Key Laboratory of Refractories and Metallurgy, School of Chemistry and Chemical Engineering, Wuhan University of Science and Technology, Wuhan 430081, China

<sup>c</sup> State Key Laboratory of Supramolecular Structure and Materials, Institute of Theoretical Chemistry, Jilin University, Changchun 130012, China

<sup>d</sup> California NanoSystems Institute and Department of Chemistry & Biochemistry, University of California, Los Angeles, CA 90095, United States

Fluorescent supramolecular polymer network based on a mono-terpyridine-tethered leaning towerarene, a tetrapotic tetraphenylethylene-based guest linker, and zinc ions has been designed and synthesized, showing excellent triple-stimuli responsive property.

Chinese Chemical Letters 30 (2019) 2299



## Solvent-dependent selective oxidation of 5-hydroxymethylfurfural to 2,5-furandicarboxylic acid under neat conditions

Kai-Jian Liu<sup>a</sup>, Tang-Yu Zeng<sup>a</sup>, Jia-Le Zeng<sup>a</sup>, Shao-Feng Gong<sup>a</sup>, Jun-Yi He<sup>b</sup>, Ying-Wu Lin<sup>d</sup>, Jia-Xi Tan<sup>c</sup>, Zhong Cao<sup>b</sup>, Wei-Min He<sup>a,b</sup>

<sup>a</sup> Department of Chemistry, Hunan University of Science and Engineering, Yongzhou 425100, China

<sup>b</sup> Hunan Provincial Key Laboratory of Materials Protection for Electric Power and Transportation, Changsha University of Science and Technology, Changsha 410114, China

<sup>c</sup> School of Chemistry and Chemical Engineering, Hunan University of Science and Technology, Xiangtan 411201, China

<sup>d</sup> School of Chemistry and Chemical Engineering, University of South China, Hengyang 421001, China

An eco-friendly and economical route for the oxidation 5-hydroxymethylfurfural (HMF) to 2,5-furandicarboxylic acid (FDCA) with atmospheric dioxygen as the sole oxidant under acid-, base-, metal- and external initiator-free conditions in minimal solvent was reported.

Chinese Chemical Letters 30 (2019) 2304



Atmospheric O<sub>2</sub> as the sole oxidant  
Acid-, base-, metal- and external radical initiator-free  
Dual roles of 1,2-diethoxyethane: solvent and initiator  
Operational simplicity & clean isolation and purification

## A low-temperature synthesis-induced defect formation strategy for stable hierarchical porous metal-organic frameworks

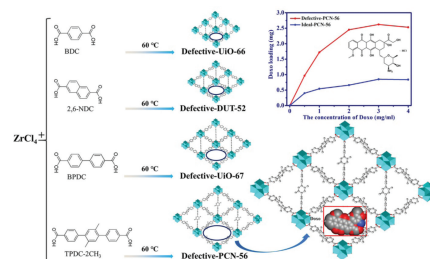
Ge Huang<sup>a,1</sup>, Yue Wang<sup>b,1</sup>, Tianfu Liu<sup>a</sup>

<sup>a</sup> Fujian Institute of Research on the Structure of Matter, State Key Laboratory of Structural Chemistry, Chinese Academy of Sciences, Fuzhou 350002, China

<sup>b</sup> College of Biological and Chemical Engineering, Chongqing University of Education, Chongqing 400067, China

A stable hierarchical porous metal-organic framework PCN-56 with abundant Lewis acid sites was synthesized by the low-temperature synthesis-induced defect formation method. It exhibits good adsorption capacity for dyes and high loading capacity toward macromolecular drugs.

Chinese Chemical Letters 30 (2019) 2309



## A novel approach to synthesize porous graphene by the transformation and deoxidation of oxygen-containing functional groups

Da Zhang<sup>a,1</sup>, Luming Chen<sup>a,1</sup>, Yaochun Yao<sup>a</sup>, Feng Liang<sup>a,b</sup>, Tao Qu<sup>a,b</sup>, Wenhui Ma<sup>a</sup>, Bing Yang<sup>a</sup>, Yongnian Dai<sup>a</sup>, Yong Lei<sup>c</sup>

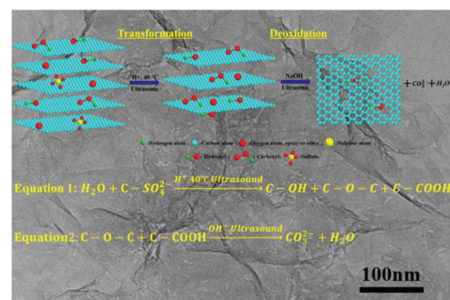
<sup>a</sup> Faculty of Metallurgical and Energy Engineering, Kunming University of Science and Technology, Kunming 650093, China

<sup>b</sup> State Key Laboratory of Complex Nonferrous Metal Resources Clean Utilization, Kunming University of Science and Technology, Kunming 650093, China

<sup>c</sup> Institute of Physics & IMN Macro Nanos (ZIK), Ilmenau University of Technology, Ilmenau 98693, Germany

The impurity-free porous graphene prepared by acid-alkali etching-assisted sonication approach possessed the size of ~5 μm, layer numbers of 3–8 and an average pore diameter of approximately 3 nm. In an acidic solution, oxygen-containing functional groups were formed due to the hydrolysis of sulfate and continuous transformations, and then under the synergistic effects of alkali and ultrasound treatment, porous graphene was obtained due to the loss of oxygen-containing functional groups.

Chinese Chemical Letters 30 (2019) 2313



## Study on the controllable synthesis of SH-MCM-41 mesoporous materials and their adsorption properties of the $\text{La}^{3+}$ , $\text{Gd}^{3+}$ and $\text{Yb}^{3+}$

Xiancai Li, Tianren Lu, Ying Wang, Yifeng Yang

College of Chemistry, Nanchang University, Nanchang 330031, China

SH-MCM-41 was examined in adsorption and desorption experiments to investigate the adsorption capacities of  $\text{La}^{3+}$ ,  $\text{Gd}^{3+}$  and  $\text{Yb}^{3+}$  and the reusability.

Chinese Chemical Letters 30 (2019) 2318



## Kilogram-scale synthesis of carbon quantum dots for hydrogen evolution, sensing and bioimaging

Weidong Li<sup>a</sup>, Yuan Liu<sup>b</sup>, Boyang Wang<sup>a</sup>, Haoqiang Song<sup>a</sup>, Zhongyi Liu<sup>a</sup>, Siyu Lu<sup>a</sup>, Bai Yang<sup>c</sup>

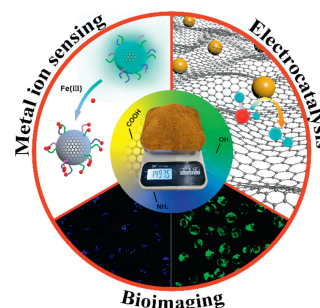
<sup>a</sup> College of Chemistry, Zhengzhou University, Zhengzhou 450001, China

<sup>b</sup> College of Materials Science and Engineering, Zhengzhou University, Zhengzhou 450001, China

<sup>c</sup> State Key Laboratory of Supramolecular Structure and Materials, College of Chemistry, Jilin University, Changchun 130012, China

A facile, low-cost, green, kilogram-scale synthesis of high quality CQDs were synthesized. The throughput of CQDs is 1.4975 kg in one pot and the as-prepared CQDs have a highly crystalline hexagonal structure with remarkable solubility, stability, and biocompatibility. It showed outstanding electrocatalytic activity, Fe<sup>3+</sup> sensitivity and good biocompatibility.

Chinese Chemical Letters 30 (2019) 2323



## Surface carboxyl groups enhance the capacities of carbonaceous oxygen electrodes for aprotic lithium-oxygen batteries: A direct observation on binder-free electrodes

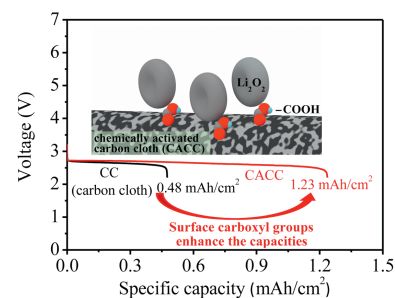
Ming Li<sup>a</sup>, Liang Xiao<sup>a</sup>, Duo Wang<sup>a</sup>, Haoyang Dong<sup>a</sup>, Bohua Deng<sup>a</sup>, Jinping Liu<sup>a,b</sup>

<sup>a</sup> School of Chemistry, Chemical Engineering and Life Science, Wuhan University of Technology, Wuhan 430070, China

<sup>b</sup> State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, Wuhan 430070, China

Carbon cloth was proposed as an ideal model to investigate the effect of surface functional groups. The introduction of surface carboxyl groups significantly enhances the capacities of carbonaceous oxygen diffusion electrodes for the lithium-oxygen batteries.

Chinese Chemical Letters 30 (2019) 2328



## Gecko-inspired composite micro-pillars with both robust adhesion and enhanced dry self-cleaning property

Xiaoxiao Dong<sup>a</sup>, Hong Zhao<sup>a</sup>, Zhihang Wang<sup>a</sup>, Miray Ouzounian<sup>b</sup>, Travis Shihao Hu<sup>b</sup>, Yongjian Guo<sup>c</sup>, Lipeng Zhang<sup>c</sup>, Quan Xu<sup>a</sup>

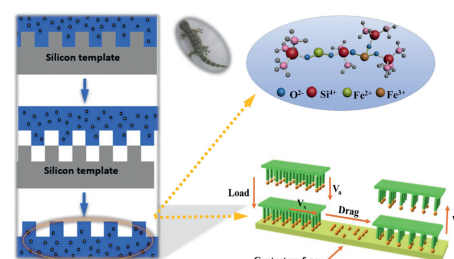
<sup>a</sup> College of Mechanical and Transportation Engineering, China University of Petroleum-Beijing, Beijing 102249, China

<sup>b</sup> Department of Mechanical Engineering, California State University, Los Angeles, CA 90032, United States

<sup>c</sup> Energy College, Beijing University of Chemical Technology, Beijing 100029, China

Enhanced dry self surfaces were fabricated which could dislodge up to 24.6% of contaminated particles with as few as 4 steps.

Chinese Chemical Letters 30 (2019) 2333



## 2D Bi<sub>2</sub>WO<sub>6</sub>/MoS<sub>2</sub> as a new photo-activated carrier for boosting electrocatalytic methanol oxidation with visible light illumination

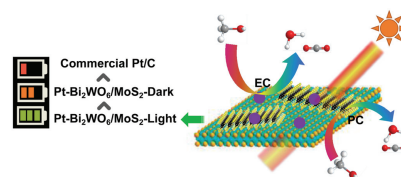
Hongmin Zhang<sup>a,b</sup>, Jie He<sup>a</sup>, Chunyang Zhai<sup>b</sup>, Mingshan Zhu<sup>a</sup>

<sup>a</sup> School of Environment, Jinan University, Guangzhou 510632, China

<sup>b</sup> School of Materials Science and Chemical Engineering, Ningbo University, Ningbo 315211, China

A kind of new 2D heterojunction of Bi<sub>2</sub>WO<sub>6</sub>/MoS<sub>2</sub> was constructed and used as visible-light activated carrier for depositing Pt electrocatalyst. With assistance of visible light irradiation, Pt-Bi<sub>2</sub>WO<sub>6</sub>/MoS<sub>2</sub> composite shows enhanced electrocatalytic activity and stability towards methanol oxidation than traditional electrocatalytic process and commercial Pt/C.

Chinese Chemical Letters 30 (2019) 2338



## A chlorinated non-fullerene acceptor for efficient polymer solar cells

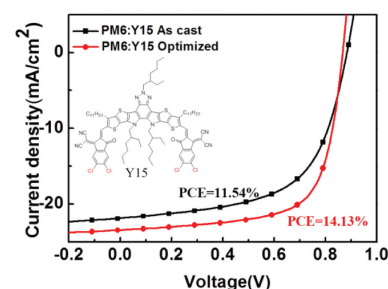
Mei Luo<sup>a</sup>, Can Zhu<sup>a</sup>, Jun Yuan<sup>a</sup>, Liuyang Zhou<sup>a</sup>, M.L. Keshtov<sup>b</sup>, D. Yu Godovsky<sup>b</sup>, Yingping Zou<sup>a</sup>

<sup>a</sup> College of Chemistry and Chemical Engineering, Central South University, Changsha 410083, China

<sup>b</sup> Nesmeyanov Institute of Organoelement Compounds, Russian Academy of Sciences, Moscow 119991, Russia

After additive and thermal annealing treatment, the PM6:Y15 based device obtains a high power conversion efficiency of 14.13%.

Chinese Chemical Letters 30 (2019) 2343



## Facile assembly of mesoporous silica nanoparticles with hierarchical pore structure for CO<sub>2</sub> capture

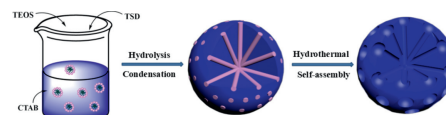
Tingting Song<sup>a</sup>, Hongyu Zhao<sup>a,b</sup>, Yu Hu<sup>a</sup>, Nannan Sun<sup>b</sup>, Haijiao Zhang<sup>a</sup>

<sup>a</sup> Institute of Nanochemistry and Nanobiology, Shanghai University, Shanghai 200444, China

<sup>b</sup> CAS Key Lab of Low-Carbon Conversion Science and Engineering, Shanghai Advanced Research Institute, Chinese Academy of Sciences, Shanghai 201210, China

A facile one-pot hydrothermal approach has been developed for the preparation of mesoporous silica nanoparticles (MSNs) with hierarchical pore structure. The PEI-modified MSNs exhibit an improved adsorption capacity for CO<sub>2</sub> capture.

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## Functional delivery vehicle of organic nanoparticles in inorganic crystals

Linlin Kong<sup>a,b,1</sup>, Xinyi Jin<sup>c,1</sup>, Dapeng Hu<sup>c</sup>, Leyun Feng<sup>a</sup>, Dong Chen<sup>a,b</sup>, Hanying Li<sup>c</sup>

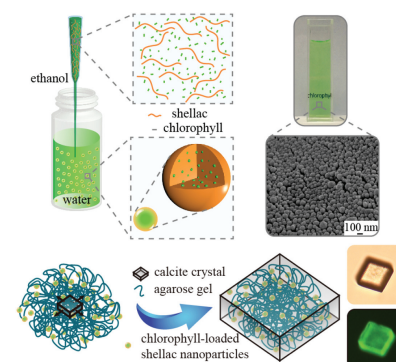
<sup>a</sup> Institute of Process Equipment, College of Energy Engineering, Zhejiang University, Hangzhou 310027, China

<sup>b</sup> State Key Laboratory of Fluid Power and Mechatronic Systems, Zhejiang University, Hangzhou 310027, China

<sup>c</sup> MOE Key Laboratory of Macromolecular Synthesis and Functionalization, State Key Laboratory of Silicon Materials, Department of Polymer Science and Engineering, Zhejiang University, Hangzhou 310027, China

This work has developed a functional delivery vehicle of an organic-inorganic hybrid consisted of organic nanoparticles in inorganic crystals, which greatly improves the stability of the bioactive and implements a unique pH-triggered release.

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## Self-assembly of L-tryptophan on Cu(111) studied by low-temperature scanning tunneling microscopy

Qiang Xue<sup>a</sup>, Yajie Zhang<sup>a</sup>, Ruoning Li<sup>a</sup>, Chao Li<sup>a</sup>, Na Li<sup>a</sup>, Chenyang Yuan<sup>a</sup>, Shimin Hou<sup>a,b</sup>, Yongfeng Wang<sup>a,c</sup>

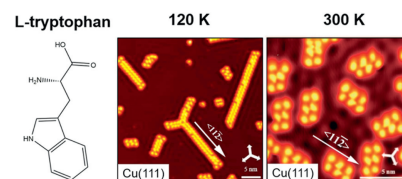
<sup>a</sup> Key Laboratory for the Physics and Chemistry of Nanodevices, Department of Electronics, Peking University, Beijing 100871, China

<sup>b</sup> Peking University Information Technology Institute (Tianjin Binhai), Tianjin 300450, China

<sup>c</sup> Beijing Academy of Quantum Information Sciences, Beijing 100193, China

The self-assembly of L-tryptophan on Cu(111) is investigated by an ultrahigh vacuum scanning tunneling microscope (STM) at 4.4 K. A series of novel supramolecular structures have been prepared with different annealing temperatures.

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## A simple visual method for DNA detection based on the formation of gold nanoparticles

Yuan Liu<sup>a,1</sup>, Taotao Li<sup>b,1</sup>, Chuxuan Ling<sup>c</sup>, Zunliang Wang<sup>a</sup>, Lian Jin<sup>d</sup>, Yongxiang Zhao<sup>e</sup>, Zhu Chen<sup>a,d</sup>, Song Li<sup>d</sup>, Yan Deng<sup>a,d</sup>, Nongyue He<sup>a,e</sup>

<sup>a</sup> State Key Laboratory of Bioelectronics, Southeast University, Nanjing 210096, China

<sup>b</sup> Hunan Provincial Key Lab of Dark Tea and Jin-Hua, School of Materials and Chemical Engineering, Hunan City University, Yiyang 413000, China

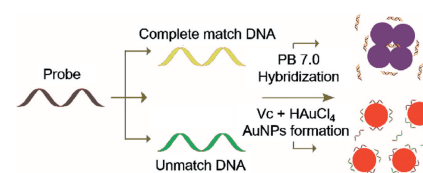
<sup>c</sup> School of Chemistry and Chemical Engineering, Southeast University, Nanjing 211189, China

<sup>d</sup> Hunan Key Laboratory of Biomedical Nanomaterials and Devices, Hunan University of Technology, Zhuzhou 412007, China

<sup>e</sup> National Center for International Bio-targeting Theranostics, Guangxi Key Laboratory of Bio-targeting Theranostics, Collaborative Innovation Center for Targeting Tumor Theranostics, Guangxi Medical University, Nanning 530021, China

A simple visual method for DNA detection during the formation of gold nanoparticles (AuNPs) was developed based on different electrostatic properties of single strand DNA (ssDNA) and double strand DNA (dsDNA). It could identify target DNA in 10 min.

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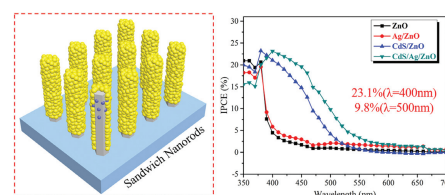
## CdS nanocrystallites sensitized ZnO nanorods with plasmon enhanced photoelectrochemical performance

Li Cai, Yuanchang Du, Xiangjiu Guan, Shaohua Shen

International Research Center for Renewable Energy, State Key Laboratory of Multiphase Flow in Power Engineering (MFPE), Xi'an Jiaotong University (XJTU), Xi'an 710049, China

A sandwiched structure of CdS/Ag/ZnO nanorod photoanode exhibits greatly enhanced photoelectrochemical activity for solar hydrogen generation, due to synergistic effect of CdS nanocrystallites and plasmonic Ag nanoparticles for the enhanced optical absorption and the promoted charge carrier separation.

Chinese Chemical Letters 30 (2019) 2363



## Post-self-repair process of neuron cells under the influence of neutral and cationic nanoparticles

Ting Wang<sup>a,1</sup>, Guanwen Qu<sup>a,1</sup>, Yu Deng<sup>a</sup>, Jing Shang<sup>b</sup>, Zhangqi Feng<sup>c,d,e</sup>, Fengyu Yang<sup>c</sup>, Nongyue He<sup>a</sup>, Jie Zheng<sup>c</sup>

<sup>a</sup> State Key Laboratory of Bioelectronics, National Demonstration Centre for Experimental Biomedical Engineering Education, School of Biological Science and Medical Engineering, Southeast University, Nanjing 210096, China

<sup>b</sup> State Key Laboratory of Natural Medicines, Department of Pharmacology, China Pharmaceutical University, Nanjing 210002, China

<sup>c</sup> Department of Chemical and Biomolecular Engineering, The University of Akron, Akron, OH 44325, United States

<sup>d</sup> School of Chemical Engineering, Nanjing University of Science and Technology, Nanjing 210094, China

<sup>e</sup> Nanjing Daniel New Mstar Technology Ltd., Nanjing 211200, China

Alkylated nanoparticles induce malignant lysosome damages and unreparable genome injuries which cannot be caused by aminated nanoparticles. Therefore, cells exposed to alkylated nanoparticles initiate post-self-repair effect by down regulating Fbw7 and accumulating cyclin E to maintain the replication of injured DNA.

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