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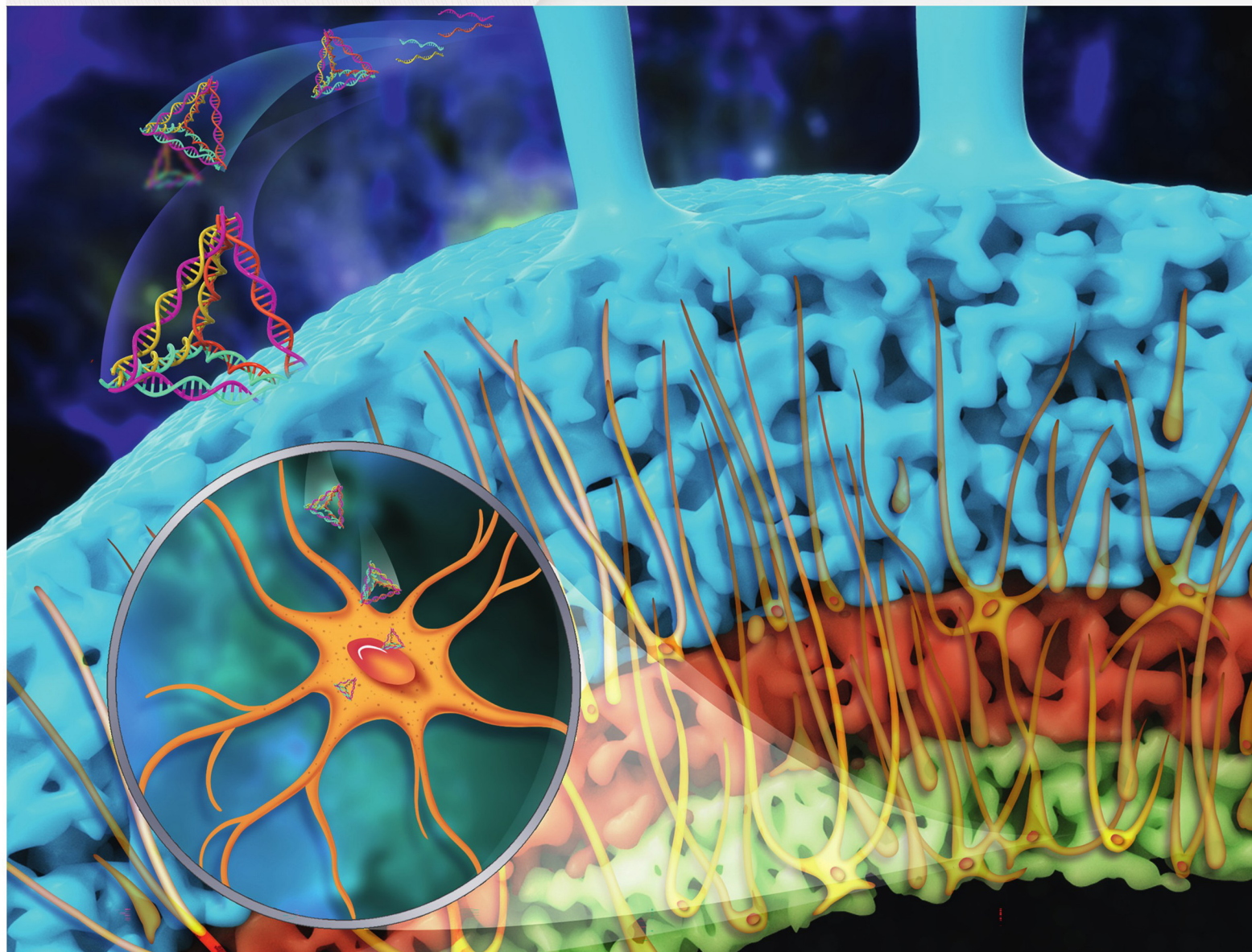
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## Chinese Chemical Letters (中国化学快报)

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### REVIEW

Yimin Tan, Yan Deng, et al.  
Advances in application of sensors for  
determination of phthalate esters

### COMMUNICATION

Shih-Hsin Ho, et al.  
Multistage defense response of microalgae  
exposed to pharmaceuticals in wastewater

Chinese Chemical Society

Institute of Materia Medica, Chinese Academy of Medical Sciences

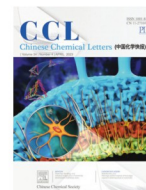
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## Graphical Abstracts/Chin Chem Lett 34 (2023) 108256

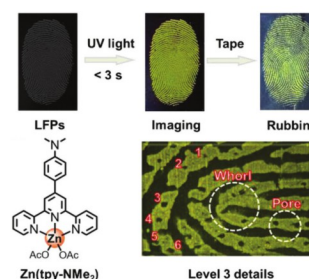
## Editorials

## High-resolution and instantaneous imaging of latent fingerprints

Ming Cheng<sup>a</sup>, Juli Jiang<sup>a</sup>, Jean-Claude Chambron<sup>b</sup>, Leyong Wang<sup>a</sup><sup>a</sup>Key Laboratory of Mesoscopic Chemistry of MOE, Jiangsu Key Laboratory of Advanced Organic Materials, School of Chemistry and Chemical Engineering, Nanjing University, Nanjing 210023, China<sup>b</sup>Institut de Chimie de Strasbourg, UMR 7177, CNRS, Université de Strasbourg, Strasbourg Cedex 67008, France

Tu's group from Fudan University utilized a supramolecular assembly strategy and employed terpyridine Zn(II) complexes to selectively improve fluorescent properties and enhance the ability to bind components in latent fingerprints (LFPs), which provides an efficient approach for practical LFPs recording and analysis in different scenarios.

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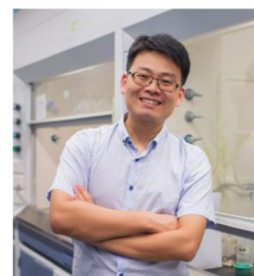


## In memoriam Professor Wei Jiang, one of the young editorial board members

Qiang Shi<sup>a</sup>, Liping Cao<sup>b</sup>, Yong Chen<sup>c</sup>, Huanfang Guo<sup>d</sup>, Yu Liu<sup>c</sup>, Tao Tu<sup>e</sup>, Feng Wang<sup>f</sup>, Junli Wang<sup>d</sup>, Leyong Wang<sup>g</sup>, Yongshu Xie<sup>h</sup>, Cheng Yang<sup>i</sup>, Xin Zhao<sup>j</sup><sup>a</sup>Key Laboratory of Light Conversion Materials and Technology of Shandong Academy of Sciences, Advanced Materials Institute, Qilu University of Technology (Shandong Academy of Sciences), Ji'nan 250353, China<sup>b</sup>College of Chemistry and Materials Science, Northwest University, Xi'an 710069, China<sup>c</sup>College of Chemistry, State Key Laboratory of Elemento-Organic Chemistry, Nankai University, Tianjin 300071, China<sup>d</sup>Institute of Materia Medica, Chinese Academy of Medical Sciences, Beijing 100050, China<sup>e</sup>Shanghai Key Laboratory of Molecular Catalysis and Innovative Materials, Department of Chemistry, Fudan University, Shanghai 200438, China<sup>f</sup>Department of Polymer Science and Engineering, University of Science and Technology of China, Hefei 230026, China<sup>g</sup>School of Chemistry and Chemical Engineering, Nanjing University, Nanjing 210023, China<sup>h</sup>Key Laboratory for Advanced Materials, Frontiers Science Center for Materiobiology and Dynamic Chemistry, School of Chemistry and Molecular Engineering, Institute of Fine Chemicals, East China University of Science and Technology, Shanghai 200237, China<sup>i</sup>College of Chemistry, Sichuan University, Chengdu 610065, China<sup>j</sup>Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, Shanghai 200032, China

It is with great sadness for us that Professor Wei Jiang, a young and well-known supramolecular chemist, passed away on Sunday 25 December 2022. He was heavily involved with *Chin. Chem. Lett.* (CCL) in his role as Editorial Board Member as well as the Author.

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## Reviews

### Pillar[n]arenes-based materials for detection and separation of pesticides

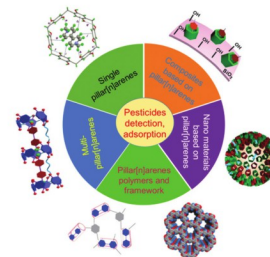
Chinese Chemical Letters 34 (2023) 107698

Zhong-Di Tang<sup>a</sup>, Xiao-Mei Sun<sup>a</sup>, Ting-Ting Huang<sup>a</sup>, Juan Liu<sup>b</sup>, Bingbing Shi<sup>a</sup>, Hong Yao<sup>a</sup>, You-Ming Zhang<sup>a</sup>, Tai-Bao Wei<sup>a</sup>, Qi Lin<sup>a</sup>

<sup>a</sup>Key Laboratory of Eco-Functional Polymer Materials of Ministry of Education, Key laboratory of Polymer Materials of Gansu Province, College of Chemistry and Chemical Engineering, Northwest Normal University, Lanzhou 730070, China

<sup>b</sup>Key Laboratory of Environment-Friendly Composite Materials of the State Ethnic Affairs Commission, Gansu Provincial Biomass Function Composites Engineering Research Center, Key Laboratory for Utility of Environment-Friendly Composite Materials and Biomass in University of Gansu Province, College of Chemical Engineering, Northwest Minzu University (Northwest University for Nationalities), Lanzhou 730000, China

Recent progress of pillar[n]arenes-based materials for detection and separation of pesticides from single/multi-pillar[n]arenes, pillar[n]arenes-based polymers or frameworks, composites, nanomaterials, etc. The structure-effective relationship of them has been discussed.



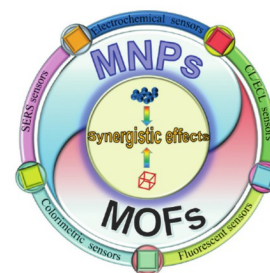
### Applications of metal nanoparticles/metal-organic frameworks composites in sensing field

Chinese Chemical Letters 34 (2023) 107527

Jinming Xu, Jiao Ma, Yi Peng, Shuai Cao, Songtao Zhang, Huan Pang

School of Chemistry and Chemical Engineering, Yangzhou University, Yangzhou 225009, China

Metal-nanoparticles/metal organic frameworks composites-based sensors are classified as electrochemical sensors, fluorescent sensors, colorimetric sensors, surface-enhanced Raman scattering sensors and chemiluminescence/electrochemiluminescence sensors owing to fascinating synergistic effects.



### Recent advances in organic electrosynthesis using heterogeneous catalysts modified electrodes

Chinese Chemical Letters 34 (2023) 107735

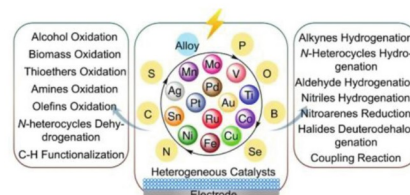
Li Ma<sup>a</sup>, Xianang Gao<sup>a</sup>, Xin Liu<sup>a</sup>, Xiaojun Gu<sup>a</sup>, Baoying Li<sup>a</sup>, Beibei Mao<sup>b</sup>, Zeyuan Sun<sup>a</sup>, Wei Gao<sup>a</sup>, Xiaofei Jia<sup>c</sup>, Jianbin Chen<sup>a</sup>

<sup>a</sup>Shandong Provincial Key Laboratory of Molecular Engineering, State Key Laboratory of Biobased Material and Green Papermaking, School of Chemistry and Chemical Engineering, Qilu University of Technology (Shandong Academy of Sciences), Ji'nan 250353, China

<sup>b</sup>College of Pharmacy, Shandong University of Traditional Chinese Medicine, Ji'nan 250355, China

<sup>c</sup>Key Laboratory of Optic-electric Sensing and Analytical Chemistry for Life Science, MOE, College of Chemistry and Molecular Engineering, Qingdao University of Science and Technology, Qingdao 266042, China

It describes some representative heterogeneous catalysts modified electrodes for electrocatalytic organic reactions, highlighting structural optimization, electrochemical performance and reaction mechanism.



### Synthesis and applications of thiosulfonates and selenosulfonates as free-radical reagents

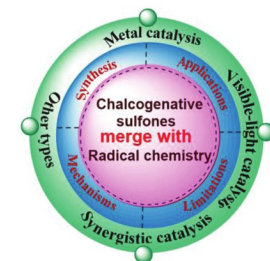
Chinese Chemical Letters 34 (2023) 107736

Xin Wang<sup>a</sup>, Jianping Meng<sup>a</sup>, Dongyang Zhao<sup>a</sup>, Shi Tang<sup>b</sup>, Kai Sun<sup>a</sup>

<sup>a</sup>College of Chemistry and Chemical Engineering, Yantai University, Yantai 264005, China

<sup>b</sup>College of Chemistry and Chemical Engineering, Jishou University, Jishou 416000, China

In this review, the synthesis and applications of chalcogenative sulfones as radical reagents, classified as (i) metal catalysis; (ii) visible-light catalysis; (iii) synergistic catalysis, as well as other types, are described.





## Chemical tools for E3 ubiquitin ligase study

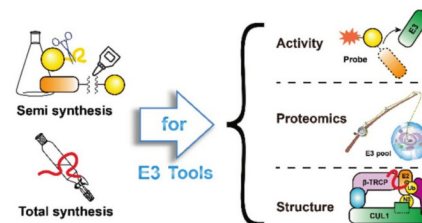
Yangwode Jing<sup>a,b</sup>, Chong Zuo<sup>b</sup>, Yun-Xiang Du<sup>b</sup>, Junxiong Mao<sup>b</sup>, Ruichao Ding<sup>b</sup>, Jiachen Zhang<sup>b</sup>, Lu-Jun Liang<sup>b</sup>, Qian Qu<sup>a</sup>

<sup>a</sup> Institute of Translational Medicine, Shanghai Jiao Tong University, Shanghai 200240, China

<sup>b</sup> Tsinghua-Peking Center for Life Sciences, Ministry of Education Key Laboratory of Bioorganic Phosphorus Chemistry and Chemical Biology, Center for Synthetic and Systems Biology, Department of Chemistry, Tsinghua University, Beijing 100084, China

Chemical tools have been widely used to study biomacromolecules. This review summarized recent progress in designing and synthesizing chemical tools targeting E3 ubiquitin ligase.

Chinese Chemical Letters 34 (2023) 107781



## Degradation of iodinated X-ray contrast media by advanced oxidation processes: A literature review with a focus on degradation pathways

Meiru Hou<sup>a</sup>, Xiaodie Li<sup>a</sup>, Yu Fu<sup>a</sup>, Lingli Wang<sup>a</sup>, Dagang Lin<sup>a</sup>, Zhaohui Wang<sup>a,b,c</sup>

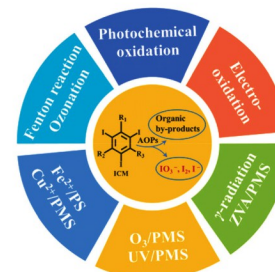
<sup>a</sup> Shanghai Key Lab for Urban Ecological Processes and Eco-Restoration, School of Ecological and Environmental Sciences, East China Normal University, Shanghai 200241, China

<sup>b</sup> Technology Innovation Center for Land Spatial Eco-restoration in Metropolitan Area, Ministry of Natural Resources, Shanghai 200062, China

<sup>c</sup> Shanghai Engineering Research Center of Biotransformation of Organic Solid Waste, Shanghai 200241, China

This review summarizes the state-of-the-art of various AOPs for the ICMs removal, and emphasizes on the main degradation pathways of ICMs in different oxidation systems.

Chinese Chemical Letters 34 (2023) 107723



## Advances in application of sensors for determination of phthalate esters

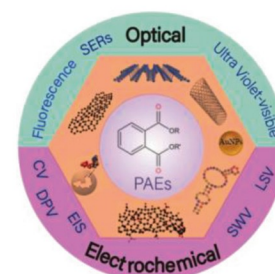
Chuanxiang Zhang<sup>a</sup>, Jie Zhou<sup>b</sup>, Tingting Ma<sup>b</sup>, Wenfei Guo<sup>b</sup>, Dan Wei<sup>b</sup>, Yimin Tan<sup>a</sup>, Yan Deng<sup>b</sup>

<sup>a</sup> College of Packing and Materials Engineering, Hunan University of Technology, Zhuzhou 412007, China

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

This review briefly introduced the research progress on optical sensors and electrochemical sensors for the detection of phthalates in recent ten years. This is helpful to better understand preparation methods for sensors and their detection mechanisms for phthalates. The review will also be used in developing a more effective trace detection sensor for phthalates.

Chinese Chemical Letters 34 (2023) 107670



## Oral delivery of polyester nanoparticles for brain-targeting: Challenges and opportunities

Ping Wang<sup>a,b</sup>, Yue Wang<sup>a,b</sup>, Ping Li<sup>b</sup>, Chen Chen<sup>b</sup>, Siman Ma<sup>a</sup>, Linxuan Zhao<sup>b</sup>, Haibing He<sup>a</sup>, Tian Yin<sup>c</sup>, Yu Zhang<sup>a</sup>, Xing Tang<sup>a</sup>, Jingxin Gou<sup>a</sup>

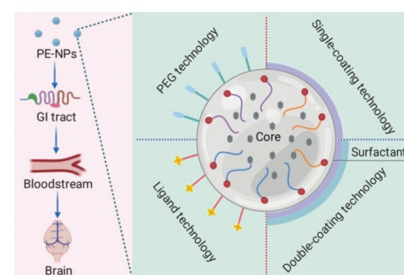
<sup>a</sup> Department of Pharmaceutics, Shenyang Pharmaceutical University, Shenyang 110016, China

<sup>b</sup> School of Pharmacy, Jilin University, Changchun 130021, China

<sup>c</sup> School of Functional Food and Wine, Shenyang Pharmaceutical University, Shenyang 110016, China

Based on the challenges faced by intact polyester nanoparticles during transport *in vivo*, recent strategies in using oral polyester nanoparticles for brain-targeted delivery and key elements that influenced brain-targeted efficiency are reviewed.

Chinese Chemical Letters 34 (2023) 107691





## Communications

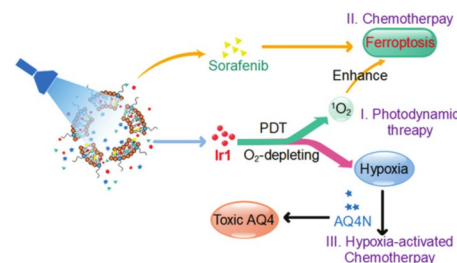
### Iridium photosensitizer constructed liposomes with hypoxia-activated prodrug to destrust hepatocellular carcinoma

Shuangling Luo, Chao Liang, Qianling Zhang, Pingyu Zhang

College of Chemistry and Environmental Engineering, Shenzhen University, Shenzhen 518060, China

A multifunctional liposome (AQ4N-Ir1-sorafenib-liposome) is prepared by encapsulating a hypoxia-activated prodrug AQ4N, a photosensitizer iridium(III) complex and a targeting drug sorafenib, for combination of chemotherapy, targeting therapy and photodynamic therapy of hepatocellular carcinoma.

Chinese Chemical Letters 34 (2023) 107666



### Biointerface engineering of self-protective bionic nanomissiles for targeted synergistic chemotherapy

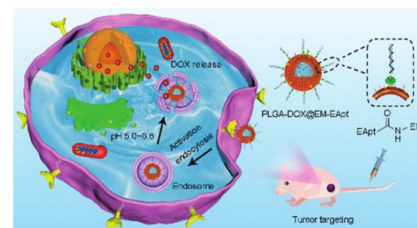
Xueyan Zhen<sup>a,b</sup>, Linhao Li<sup>a,b</sup>, Lanlan Jia<sup>a,b</sup>, Aihong Zhu<sup>a,b</sup>, Yixuan Yang<sup>a,b</sup>, Sicen Wang<sup>a,b</sup>, Xiaoyu Xie<sup>a,b</sup>

<sup>a</sup>School of Pharmacy, Health Science Center, Xi'an Jiaotong University, Xi'an 710061, China

<sup>b</sup>Shaanxi Engineering Research Center of Cardiovascular Drugs Screening & Analysis, Xi'an 710061, China

Self-protective PLGA-DOX@EM-EApt intelligently combines the functional regulation technique on biointerface with anticancer therapy, activates the DOX and EApt-mediated cell apoptosis, and achieves the synergistic chemotherapy of EGFR-overexpressed breast cancer. The constructed nanomissile extends the specific and valid functions of EM-biointerfaces, which would present a great potential to provide a new strategy for cancer therapy.

Chinese Chemical Letters 34 (2023) 107680



### Janus hydrogel with dual antibacterial and angiogenesis functions for enhanced diabetic wound healing

Guiting Liu<sup>a</sup>, Yuan Zhou<sup>a</sup>, Zejun Xu<sup>c</sup>, Ziting Bao<sup>c</sup>, Li Zheng<sup>d,e</sup>, Jun Wu<sup>b,c</sup>

<sup>a</sup>The State Key Laboratory of Polymer Materials Engineering, Polymer Research Institute of Sichuan University, Chengdu 610065, China

<sup>b</sup>Guangdong Provincial Key Laboratory of Malignant Tumor Epigenetics and Gene Regulation, Sun Yat-sen Memorial Hospital Sun Yat-sen University, Guangzhou 510120, China

<sup>c</sup>School of Biomedical Engineering, Sun Yat-sen University, Guangzhou 510006, China

<sup>d</sup>Guangxi Engineering Center in Biomedical Materials for Tissue and Organ Regeneration, Life Science Institutes, Guangxi Medical University, Nanning 530021, China

<sup>e</sup>Collaborative Innovation Centre of Regenerative Medicine and Medical BioResource Development and Application Co-constructed by the Province and Ministry, Guangxi Medical University, Nanning 530021, China

Herein, a novel Janus hydrogel was fabricated for diabetic wound healing. The outer sodium alginate (SA) hydrogel loaded with silver nanoparticles (AgNPs) could prevent infection while avoiding the deposition of AgNPs in the wound site, and the inner chitosan (CS) hydrogel impregnated with L-arginine loaded sodium alginate microspheres (ArgMS) could realize the sustained release of L-arginine and promote vascular regeneration.

Chinese Chemical Letters 34 (2023) 107705



### Dual inhibition of glucose uptake and energy supply synergistically restrains the growth and metastasis of breast cancer

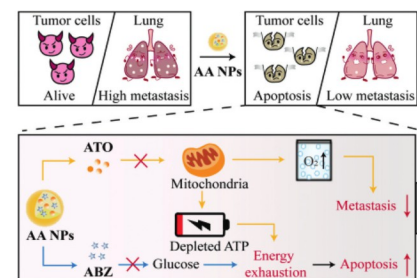
Yuan Xu<sup>a</sup>, Liling Huang<sup>a</sup>, Yuyang Bi<sup>a</sup>, Qi Song<sup>a</sup>, Mengmeng Zhang<sup>a</sup>, Lingfeng Zhang<sup>a</sup>, Tianjiao Zhou<sup>a</sup>, Lei Xing<sup>a</sup>, Hulin Jiang<sup>a,b</sup>

<sup>a</sup>State Key Laboratory of Natural Medicines, China Pharmaceutical University, Nanjing 210009, China

<sup>b</sup>Jiangsu Key Laboratory of Druggability of Biopharmaceuticals, China Pharmaceutical University, Nanjing 210009, China

We propose a simple carrier-free self-assembled nanosystem that employs the strategy of dual-regulation of energy metabolism combining with hypoxia alleviation for metastatic breast cancer therapy.

Chinese Chemical Letters 34 (2023) 107719





## Effects of polymer molecular weight on *in vitro* and *in vivo* performance of nanoparticle drug carriers for lymphoma therapy

Xinru You<sup>a,b</sup>, Liying Wang<sup>b</sup>, Junfu Zhang<sup>c</sup>, Tong Tong<sup>b</sup>, Chunlei Dai<sup>b</sup>, Chun Chen<sup>a</sup>, Jun Wu<sup>a,b</sup>

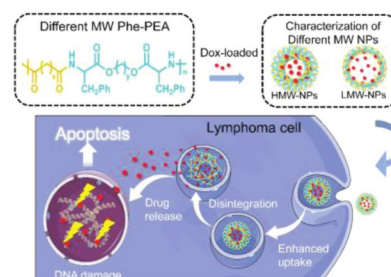
<sup>a</sup> Department of Pediatrics, The Seventh Affiliated Hospital of Sun Yat-sen University, Shenzhen 518107, China

<sup>b</sup> School of Biomedical Engineering, Sun Yat-sen University, Shenzhen 518057, China

<sup>c</sup> Department of Urology, The Seventh Affiliated Hospital of Sun Yat-sen University, Shenzhen 518107, China

Here, a series of biodegradable phenylalanine-based poly(ester amid) (Phe-PEA) with tunable molecular weight (MW) was synthesized to systematically investigate the relationship between polymer MW and the efficacy of the corresponding polymeric nanoparticles *in vitro* and *in vivo* for lymphoma therapy.

Chinese Chemical Letters 34 (2023) 107720



## Tetrahedral framework nucleic acids promote cognitive impairment recovery post traumatic brain injury

Yangyang Wang<sup>a</sup>, Weiqiang Jia<sup>b</sup>, Jianwei Zhu<sup>a</sup>, Ruxiang Xu<sup>a</sup>, Yunfeng Lin<sup>c</sup>

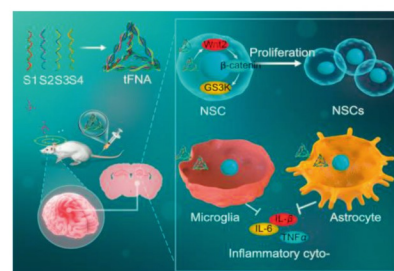
<sup>a</sup> Department of Neurosurgery, Sichuan Provincial People's Hospital, University of Electronic Science and Technology of China, Chengdu 611731, China

<sup>b</sup> Department of Neurosurgery, The First People's Hospital in Shuangliu District/West China Airport Hospital, Sichuan University, Chengdu 610299, China

<sup>c</sup> State Key Laboratory of Oral Diseases National Clinical Research Center for Oral Disease, West China Hospital of Stomatology, Sichuan University, Chengdu 610041, China

tFNAs promote cognitive impairment recovery post traumatic brain injury by enhancing the neural stem cells proliferation and inhibiting the neuroinflammation.

Chinese Chemical Letters 34 (2023) 107746



## Synergetic treatment of oxygen microcapsules and lenvatinib for enhanced therapy of HCC by alleviating hypoxia condition and activating anti-tumor immunity

Jianpeng Sheng<sup>a,b,c</sup>, Jiangchao Wu<sup>a,b,c</sup>, Xianghong Yin<sup>d</sup>, Zhu Sun<sup>e</sup>, Xun Wang<sup>a,b,c</sup>, Junlei Zhang<sup>a,b,c</sup>, Jianghui Tang<sup>a,b,c</sup>, Yongtao Ji<sup>a,b,c</sup>, Jinyuan Song<sup>a,b,c</sup>, Xiaobao Wei<sup>a,b,c</sup>, Lin Wang<sup>a,b,c</sup>, Yaxing Zhao<sup>a,b,c</sup>, Hui Zhang<sup>a,b,c</sup>, Taohong Li<sup>a,b,c</sup>, Qi Zhang<sup>a,b,c</sup>, Xueli Bai<sup>a,b,c</sup>, Li Chen<sup>e</sup>, Dong Chen<sup>e,f</sup>, Tingbo Liang<sup>a,b,c</sup>

<sup>a</sup> Department of Hepatobiliary and Pancreatic Surgery, the First Affiliated Hospital, School of Medicine, Zhejiang University, Hangzhou 310002, China

<sup>b</sup> Zhejiang Provincial Key Laboratory of Pancreatic Disease, the First Affiliated Hospital, School of Medicine, Zhejiang University, Hangzhou 310002, China

<sup>c</sup> Zhejiang University Cancer Center, Zhejiang University, Hangzhou 310002, China

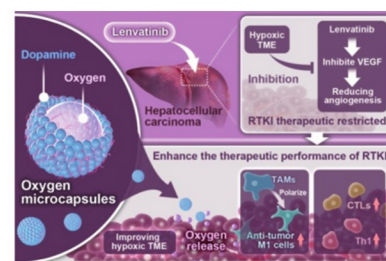
<sup>d</sup> School of Basic Medical Sciences, Institute of Hypoxia Medicine, Wenzhou Medical University, Wenzhou 325035, China

<sup>e</sup> College of Energy Engineering and State Key Laboratory of Fluid Power and Mechatronic Systems, Zhejiang University, Hangzhou 310027, China

<sup>f</sup> Department of Medical Oncology, the First Affiliated Hospital, School of Medicine, Zhejiang University, Hangzhou 310003, China

Nanoparticle-stabilized oxygen microcapsules with small size, large specific surface area and outstanding bioavailability make them excellent delivery vehicles to relieve the hypoxic microenvironment of hepatocellular carcinoma (HCC). By combining oxygen microcapsules and Lenvatinib, the synergetic treatment is capable of alleviating hypoxia condition and activating anti-tumor immunity, demonstrating a promising anti-tumor strategy for enhanced therapy of HCC.

Chinese Chemical Letters 34 (2023) 107738





## Nanocoating of CsgA protein for enhanced cell adhesion and proliferation

Chao Yang<sup>a</sup>, Dan Li<sup>b</sup>, Shaohong Zang<sup>a</sup>, Yingtang Zhou<sup>a</sup>, Lei Zhang<sup>c</sup>, Zhangfeng Zhong<sup>d</sup>

<sup>a</sup>National Engineering Research Center for Marine Aquaculture, Institute of Innovation & Application, Zhejiang Ocean University, Zhoushan 316022, China

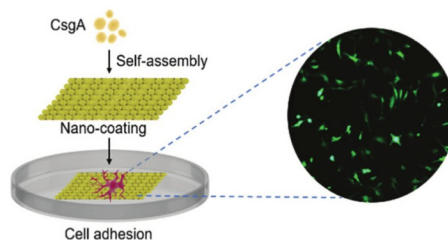
<sup>b</sup>State Key Laboratory of Southwestern Chinese Medicine Resources, School of Pharmacy, Chengdu University of Traditional Chinese Medicine, Chengdu 611137, China

<sup>c</sup>Department of Chemical Engineering, Waterloo Institute for Nanotechnology, University of Waterloo, Waterloo, ON N2L3G1, Canada

<sup>d</sup>Macau Centre for Research and Development in Chinese Medicine, Institute of Chinese Medical Sciences, University of Macau, Macao 999078, China

The nano-coating formed by the self-assembly of CsgA protein promotes cell proliferation and wound healing.

Chinese Chemical Letters 34 (2023) 107733



## Core-shell lipid-polymeric nanoparticles for enhanced oral bioavailability and antihypertensive efficacy of KY5 peptide

Jingmei Yuan<sup>a</sup>, Mengran Guo<sup>a</sup>, Shengnan Zhao<sup>b</sup>, Jinhua Li<sup>a</sup>, Xinchun Wang<sup>c</sup>, Jian Yang<sup>b</sup>, Zhaohui Jin<sup>a</sup>, Xiangrong Song<sup>a,c</sup>

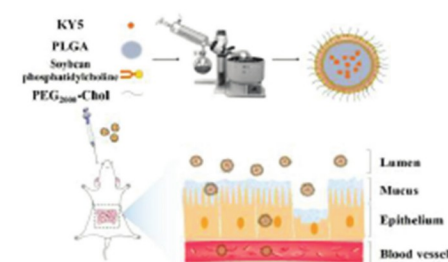
<sup>a</sup>Department of Critical Care Medicine, Department of Clinical Pharmacy, Frontiers Science Center for Disease-related Molecular Network, State Key Laboratory of Biotherapy and Cancer Center, West China Hospital, Sichuan University, Chengdu 610041, China

<sup>b</sup>School of Applied Chemistry and Biological Technology, Shenzhen Polytechnic, Shenzhen 518055, China

<sup>c</sup>First Affiliated Hospital of the Medical College, Shihezi University, Shihezi 832008, China

A core-shell lipid-polymeric nanoparticle (KY5-CSs) was developed to deliver antihypertensive peptides. KY5-CSs can effectively permeate across the mucus layer and remarkably enhance oral bioavailability and antihypertensive efficacy.

Chinese Chemical Letters 34 (2023) 107943



## Vanillin cross-linked hydrogel membranes interfacially reinforced by carbon nitride nanosheets for enhanced antibacterial activity and mechanical properties

Umer Shahzad Malik<sup>a</sup>, Qixiang Duan<sup>b</sup>, Muhammad Bilal K. Niazi<sup>a</sup>, Zaib Jahan<sup>a</sup>, Usman Liaqat<sup>a</sup>, Farooq Sher<sup>c</sup>, Yanchang Gan<sup>b</sup>, Honghao Hou<sup>b</sup>

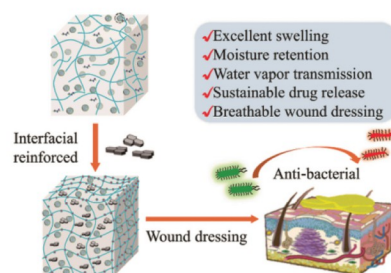
<sup>a</sup>School of Chemical and Materials Engineering, National University of Sciences and Technology, Islamabad 44000, Pakistan

<sup>b</sup>Guangdong Provincial Key Laboratory of Construction and Detection in Tissue Engineering, School of Basic Medical Science, Southern Medical University, Guangzhou 510515, China

<sup>c</sup>Department of Engineering, School of Science and Technology, Nottingham Trent University, Nottingham NG11 8NS, United Kingdom

A series of Vanillin-cross-linked chitosan nanocomposite hydrogel interfacially reinforced by g-C<sub>3</sub>N<sub>4</sub> nanosheet carrying starch-capped Ag NPs were prepared with enhanced antibacterial activity and mechanical properties, which are promising for wound healing applications.

Chinese Chemical Letters 34 (2023) 108071



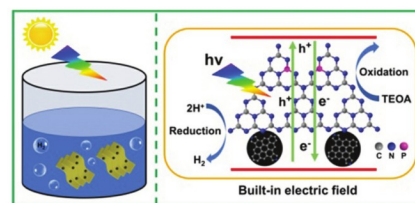
## A novel P-doped and NCDs loaded g-C<sub>3</sub>N<sub>4</sub> with enhanced charges separation for photocatalytic hydrogen evolution

Shuaiyang Zhang, Yan Yang, Yunpu Zhai, Jiaqi Wen, Meng Zhang, Jingkun Yu, Siyu Lu

Green Catalysis Center, College of Chemistry, Zhengzhou University, Zhengzhou 450001, China

The built-in electric field formed by the synergy of P-doping and NCDs-loading greatly promotes the separation of charges.

Chinese Chemical Letters 34 (2023) 107652



## Abietane derived diterpenoids as Ca<sub>v</sub>3.1 antagonists from *Salvia digitaloides*

Jianjun Zhao<sup>a,c</sup>, Shuzong Du<sup>b,c</sup>, Kun Hu<sup>a</sup>, Yali Hu<sup>a,c</sup>, Fan Xia<sup>a</sup>, Yansong Ye<sup>a</sup>, Jian Yang<sup>d</sup>, Yin Nian<sup>a</sup>, Gang Xu<sup>a</sup>

<sup>a</sup>State Key Laboratory of Phytochemistry and Plant Resources in West China, Kunming Institute of Botany, Chinese Academy of Sciences, and Yunnan Key Laboratory of Natural Medicinal Chemistry, Kunming 650201, China

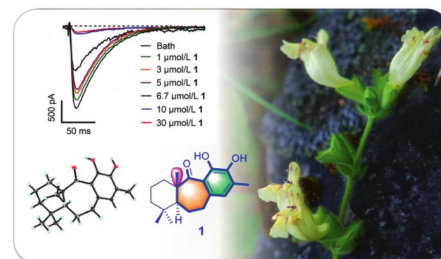
<sup>b</sup>Key Laboratory of Animal Models and Human Disease Mechanisms, and Ion Channel Research and Drug Development Center, Kunming Institute of Zoology, Chinese Academy of Sciences, Kunming 650223, China

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

<sup>d</sup>Department of Biological Sciences, Columbia University, New York, NY 10027, United States

Diterpenoids from *Salvia digitaloides* with distinct abietane derived unprecedented 10-methylated and 10-unmethylated 6/7/6 (icetexanes) architectures exhibit noticeable inhibitions on Ca<sub>v</sub>3.1 low voltage-gated Ca<sup>2+</sup> channel (LVGCC), with IC<sub>50</sub> values in the range of 3.43–11.70 μmol/L.

Chinese Chemical Letters 34 (2023) 107737



## Rhodafricanol A, an analgesic diterpenoid with an unprecedented 5/6/5/7 tetracyclic system featuring a unique 16-oxa-tetracyclo[11.2.1.0<sup>1,5</sup>.0<sup>7,13</sup>]hexadecane core from *Rhododendron dauricum*

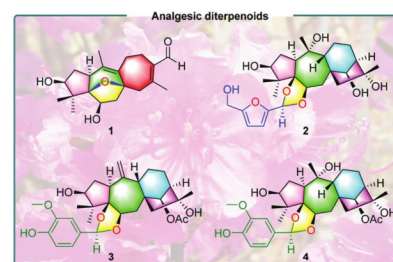
Yuanyuan Feng<sup>a</sup>, Suqin Zha<sup>a</sup>, Hanqi Zhang<sup>a</sup>, Biao Gao<sup>a</sup>, Guijuan Zheng<sup>a</sup>, Pengfei Jin<sup>a</sup>, Yingyi Chen<sup>a</sup>, Guangmin Yao<sup>a,b</sup>

<sup>a</sup>Hubei Key Laboratory of Natural Medicinal Chemistry and Resource Evaluation, School of Pharmacy, Tongji Medical College, Huazhong University of Science and Technology, Wuhan 430030, China

<sup>b</sup>State Key Laboratory of Phytochemistry and Plant Resources in West China, Kunming Institute of Botany, Chinese Academy of Sciences, Kunming 650201, China

A novel diterpenoid with an unprecedented 5/6/5/7 tetracyclic system featuring a unique 16-oxa-tetracyclo[11.2.1.0<sup>1,5</sup>.0<sup>7,13</sup>]hexadecane core, rhodafricanol A (**1**), five new grayanane-derived diterpenoids, dauricanols A–E (**2**–**6**), and five known ones were isolated from the flowers of *Rhododendron dauricum*. All the isolates showed significant analgesic activities, and dauricanols B (**3**) and C (**4**) had more potent analgesic activities than the positive control, morphine.

Chinese Chemical Letters 34 (2023) 107742



## Linker optimization of HEPT derivatives as potent non-nucleoside HIV-1 reverse transcriptase inhibitors: From S=O to CHOR

Qingqing Hao<sup>a</sup>, Xu Ling<sup>a</sup>, Christophe Pannecouque<sup>d</sup>, Erik De Clercq<sup>d</sup>, Fener Chen<sup>a,b,c</sup>

<sup>a</sup>Sichuan Research Center for Drug Precision Industrial Technology, West China School of Pharmacy, Sichuan University, Chengdu 610041, China

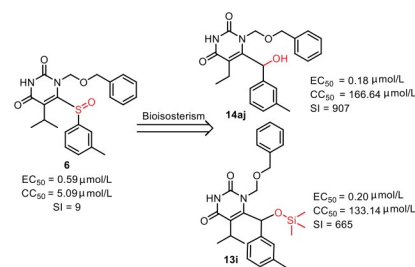
<sup>b</sup>Department of Chemistry, Engineering Center of Catalysis and Synthesis for Chiral Molecules, Fudan University, Shanghai 200433, China

<sup>c</sup>Shanghai Engineering Center of Industrial Asymmetric Catalysis for Chiral Drugs, Shanghai 200433, China

<sup>d</sup>Rega Institute for Medical Research, KU Leuven, Herestraat 49, Leuven B-3000, Belgium

A novel series of CHOR-HEPT non-nucleoside HIV-1 reverse transcriptase inhibitors were developed via structure-guided drug design strategy based on the lead compound **6**.

Chinese Chemical Letters 34 (2023) 107663



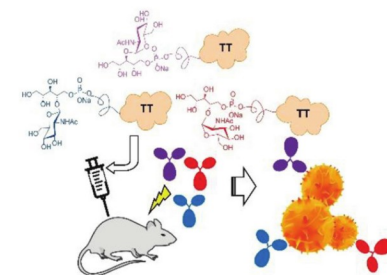
## Synthesis and immunological study of a glycosylated wall teichoic acid-based vaccine against *Staphylococcus aureus*

Peng Shen, Han Lin, Yikai Bao, Haofei Hong, Zhimeng Wu

Key Laboratory of Carbohydrate Chemistry & Biotechnology, Ministry of Education, School of Biotechnology, Jiangnan University, Wuxi 214122, China

Core structure of GlcNAc-modified wall teichoic acid-based vaccines elicited robust immune responses, and the specific IgG antibodies recognized and displayed significant opsonophagocytic activity to clear *S. aureus* cells.

Chinese Chemical Letters 34 (2023) 107679





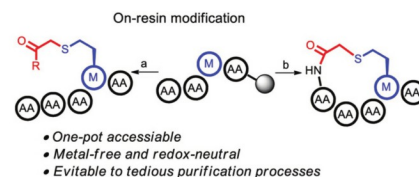
## On-resin peptide modification of methionine residue by employing 2-bromoacetate derivatives

Qi-Long Hu, Jia-Tian Liu, Guangjin Fan, Jian Li, Yixian Li, Albert S.C. Chan, Xiao-Feng Xiong

Guangdong Key Laboratory of Chiral Molecule and Drug Discovery, School of Pharmaceutical Sciences, Sun Yat-sen University, Guangzhou 510006, China

A metal-free and redox-neutral on-resin modification of methionine residue was reported, which could be applied to efficiently construct cyclic peptides of different sizes.

Chinese Chemical Letters 34 (2023) 107730



## Discovery of novel triple targeting G-quadruplex and topoisomerase 1/2 ligands from natural products evodiamine and rutaecarpine

Haibo Wang<sup>a,b</sup>, Xuexin Bai<sup>b</sup>, Yahui Huang<sup>b</sup>, Yueru Chen<sup>c</sup>, Guoqiang Dong<sup>b</sup>, Tianmiao Ou<sup>c</sup>, Shanchao Wu<sup>b</sup>, Defeng Xu<sup>a</sup>, Chunquan Sheng<sup>b</sup>

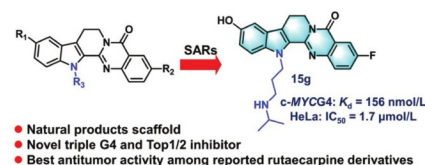
<sup>a</sup> National & Local Joint Engineering Research Center for High-efficiency Refining and High-quality Utilization of Biomass, School of Pharmacy, Changzhou University, Changzhou 213164, China

<sup>b</sup> Department of Medicinal Chemistry, School of Pharmacy, Second Military Medical University, Shanghai 200433, China

<sup>c</sup> School of Pharmaceutical Sciences, Sun Yat-sen University, Guangzhou 510006, China

Here, inspired by the indolopyridoquinazoline planar scaffold of natural products evodiamine and rutaecarpine, novel triple G4 and Top1/2 inhibitors were rationally designed and a focused library of indolopyridoquinazoline analogues were synthesized. After systematic SAR analysis and biological evaluations, compound **15g** was proven to be a potent antitumor lead compound by triple targeting c-MYC4 and Top1/2. Additionally, compound **15g** is a lead compound for the discovery of novel antitumor agents.

Chinese Chemical Letters 34 (2023) 107671



## Targeting UBE2C for degradation by bioPROTACs based on bacterial E3 ligase

Jinpeng Wang<sup>a</sup>, Min Zhang<sup>b</sup>, Susheng Liu<sup>b</sup>, Zhipeng He<sup>b</sup>, Rui Wang<sup>b</sup>, Minchan Liang<sup>b</sup>, Yuhao An<sup>b</sup>, Chenran Jiang<sup>b</sup>, Chunli Song<sup>b</sup>, Zigong Ning<sup>c</sup>, Feng Yin<sup>b</sup>, Hao Huang<sup>a</sup>, Zigang Li<sup>a,b</sup>, Yuxin Ye<sup>b</sup>

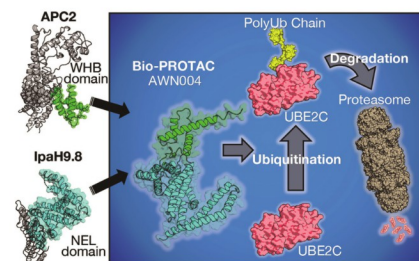
<sup>a</sup> State Key Laboratory of Chemical Oncogenomics, School of Chemical Biology and Biotechnology, Peking University Shenzhen Graduate School, Shenzhen 518055, China

<sup>b</sup> Pingshan Translational Medicine Center, Shenzhen Bay Laboratory, Shenzhen 518055, China

<sup>c</sup> School of Civil and Environmental Engineering, Harbin Institute of Technology, Shenzhen 518055, China

The UBE2C-targeting bioPROTACs were designed based on the NEL domain of bacterial E3 ligase IpaH9.8 and the UBE2C-binding WHB domain of APC2. The optimal bioPROTAC molecule AWN004 is able to transfer the ubiquitin to surface exposed lysines on UBE2C and further degrade cellular target proteins through proteasome pathway.

Chinese Chemical Letters 34 (2023) 107732



## The synthesis of PROTAC molecule and new target KAT6A identification of CDK9 inhibitor iCDK9

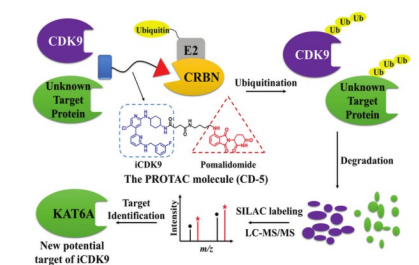
Mingtao Ao<sup>a,b</sup>, Jun Wu<sup>a</sup>, Yin Cao<sup>a</sup>, Yaohui He<sup>a</sup>, Yuxiang Zhang<sup>a</sup>, Xiang Gao<sup>a</sup>, Yuhua Xue<sup>a</sup>, Meijuan Fang<sup>a</sup>, Zhen Wu<sup>a</sup>

<sup>a</sup> Fujian Provincial Key Laboratory of Innovative Drug Target Research and State Key Laboratory of Cellular Stress Biology, School of Pharmaceutical Sciences, Xiamen University, Xiamen 361102, China

<sup>b</sup> School of Pharmacy, Hubei Engineering Research Center of Traditional Chinese Medicine of South Hubei Province, Hubei University of Science and Technology, Xianning 437100, China

The iCDK9-based PROTAC molecule (CD-5) identified that KAT6A was a non-kinase target of iCDK9 by using the PROTAC-SILAC experiment.

Chinese Chemical Letters 34 (2023) 107741



## Intramolecularly lactam stapled oxyntomodulin analogues inhibit cancer cell proliferation *in vitro*

Junli Wang<sup>a,b</sup>, Cen Liu<sup>c</sup>, Hongliu Yang<sup>c</sup>, Tao Ma<sup>c</sup>, Yonggang Liu<sup>c</sup>, Fener Chen<sup>a</sup>

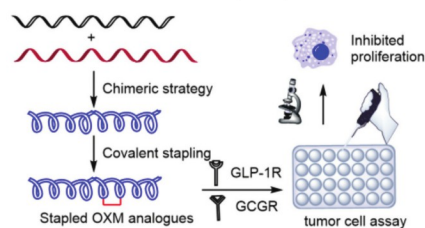
<sup>a</sup> Engineering Center of Catalysis and Synthesis for Chiral Molecules, Department of Chemistry, Fudan University, Shanghai 200433, China

<sup>b</sup> Institute of Materia Medica, Chinese Academy of Medical Sciences & Peking Union Medical College, Beijing 100050, China

<sup>c</sup> School of Chinese Materia Medica, Beijing University of Chinese Medicine, Liangxiang Campus, Beijing 102488, China

Novel oxyntomodulin (OXM) analogues are obtained by intramolecular lactam stapling of positions [Glu16 & Lys20] or [Lys17 & Glu21] to further strengthen conformationally constrained stabilization. The stapled OXM analogues are firstly reported to have anti-PANC-1 cell proliferation activity, meanwhile which has no obvious inhibitory effect on the proliferation of HeLa cells. Among the stapled peptides as well as their precursors, analogue **6** has the most prominent anti-PANC-1 proliferation activity with the IC<sub>50</sub> value of 115.1 μmol/L.

Chinese Chemical Letters 34 (2023) 107920



## Rationally designed meso-benzimidazole-pyrone with emission wavelength beyond 700 nm enabling *in vivo* visualization of acute-liver-injury-induced peroxynitrite

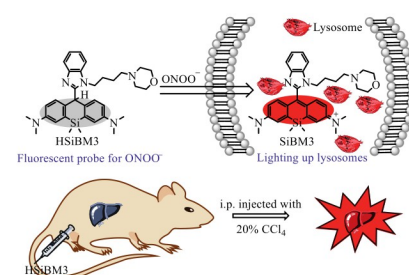
Minghao Ren<sup>a</sup>, Chengyong Zhou<sup>a</sup>, Linfang Wang<sup>a</sup>, Xin Lv<sup>b</sup>, Wei Guo<sup>b</sup>

<sup>a</sup> Department of Chemistry, Changzhi University, Changzhi 046011, China

<sup>b</sup> School of Chemistry and Chemical Engineering, Shanxi University, Taiyuan 030006, China

Based on 9- and 10-position-modification of pyronin fluorophore, we present SiBM3 with fluorescence emission maxima above 700 nm, which could serve as a platform for the design of fluorescent probes due to these remarkable optical properties. As a proof of concept, we synthesized the “dihydro” derivative HSiBM3 for sensing ONOO<sup>-</sup>, which could trace exogenous and endogenous peroxynitrite in living cells and mice. Furthermore, HSiBM3 was successfully employed for visualizing acute-liver-injury-induced peroxynitrite.

Chinese Chemical Letters 34 (2023) 107646



## Coumarin-based two-photon AIE fluorophores: Photophysical properties and biological application

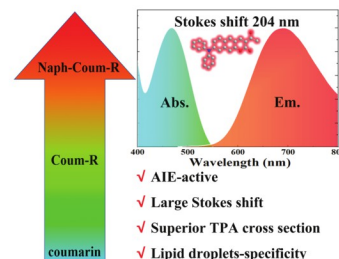
Yitong Yang<sup>a</sup>, Hao Zhong<sup>a</sup>, Benhua Wang<sup>a</sup>, Xiaojie Ren<sup>b</sup>, Xiangzhi Song<sup>a</sup>

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

<sup>b</sup> Department of Chemistry and Center of Super-Diamond and Advanced Films (COSDAF), City University of Hong Kong, Hong Kong 999077, China

A series of coumarin-based two-photon AIE fluorophores with long-wavelength emission, large Stokes shift were developed. They could specifically stained lipid droplets in living cells and presented good two-photon imaging performance.

Chinese Chemical Letters 34 (2023) 107674



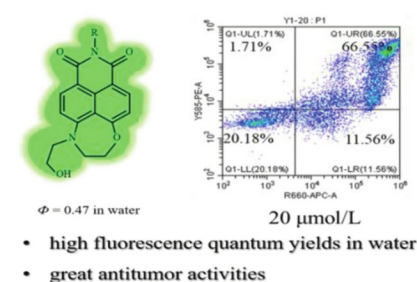
## Novel seven-membered ring-fused naphthalimide derivatives with potentials for cancer theranostics

Yonghui Yang, Xiayu Shi, Zhuo Chen, Yufang Xu, Xuhong Qian, Weiping Zhu

State Key Laboratory of Bioreactor Engineering, Shanghai Key Laboratory of Chemical Biology, Shanghai key Laboratory of New Drug Design, School of Pharmacy, East China University of Science and Technology, Shanghai 200237, China

Novel seven-membered ring-fused naphthalimide derivatives showed high fluorescence quantum yields in water and great antitumor activities.

Chinese Chemical Letters 34 (2023) 107696





## An AIE probe for long-term plasma membrane imaging and membrane-targeted photodynamic therapy

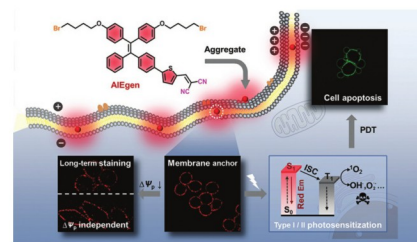
Hailing Zhao<sup>a</sup>, Nan Li<sup>a</sup>, Caixia Ma<sup>a</sup>, Zhengwei Wei<sup>a</sup>, Qiya Zeng<sup>a</sup>, Keyi Zhang<sup>a</sup>, Na Zhao<sup>a</sup>, Ben Zhong Tang<sup>b</sup>

<sup>a</sup>Key Laboratory of Macromolecular Science of Shaanxi Province, Key Laboratory of Applied Surface and Colloid Chemistry of Ministry of Education, and School of Chemistry & Chemical Engineering, Shaanxi Normal University, Xi'an 710119, China

<sup>b</sup>School of Science and Engineering, Shenzhen Institute of Aggregate Science and Technology, The Chinese University of Hong Kong, Shenzhen 518172, China

An AIE probe for long-term plasma membrane imaging was developed, which could also ablate the cancer cells through cell membrane-targeted photodynamic therapy.

Chinese Chemical Letters 34 (2023) 107699



## Manifesting viscosity changes in lipid droplets during iodined CT contrast media treatment by the real-time and in situ fluorescence imaging

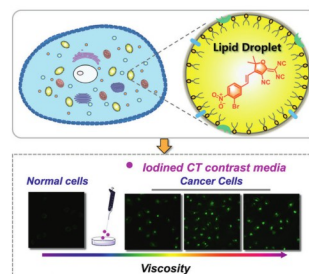
Ning Ding<sup>a</sup>, Xueliang Liu<sup>b</sup>, Aixia Meng<sup>a</sup>, Xiuxiu Zhao<sup>a</sup>, Gang Ma<sup>a</sup>, Weina Han<sup>a</sup>, Peng Dong<sup>a</sup>, Jianchun Li<sup>a</sup>, Jin Zhou<sup>a</sup>

<sup>a</sup>School of Pharmacy, School of Medical Imaging, School of Basic Medical Sciences, Weifang Key Laboratory of Pharmaceutical Chemical Biology for Cancer, Weifang Medical University, Weifang 261053, China

<sup>b</sup>Weifang People's Hospital, Weifang 261000, China

A lipid droplets targeted fluorescent probe DN-1 was devised to sense cellular viscosity alteration with high selectivity and sensitivity, which was applied to distinguish cancer cells and normal cells and reveal viscosity changes during iodined CT contrast media treatment.

Chinese Chemical Letters 34 (2023) 107745



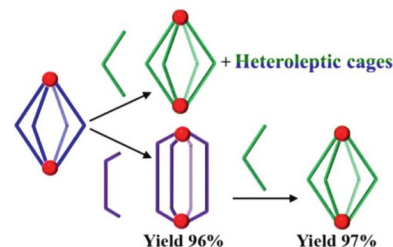
## Different-shaped ligand mediating efficient structurally similar cage-to-cage transformation

Jinkang Zhu, Chunhui Li, Xiuqin Li, Qiaochun Wang, Lei Zou

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

High efficient stepwise transformation of a Pd-cage to its analogue was achieved in high yield by introducing an intermediate ligand with different shape.

Chinese Chemical Letters 34 (2023) 107693



## Supramolecular liquid barrier for sulfur mustard utilizing host-guest complexation of pillar[5]arene with triethylene oxide substituents

Yahan Zhang<sup>a</sup>, Junyi Chen<sup>a,b</sup>, Longming Chen<sup>a</sup>, Liang Zhao<sup>a</sup>, Mengke Ma<sup>a</sup>, Xinbei Du<sup>a</sup>, Zhao Meng<sup>a</sup>, Han Zhang<sup>a</sup>, Zhibing Zheng<sup>a</sup>, Yongan Wang<sup>a</sup>, Chunju Li<sup>b</sup>, Qingbin Meng<sup>a</sup>

<sup>a</sup>State Key Laboratory of Toxicology and Medical Countermeasures, Beijing Institute of Pharmacology and Toxicology, Beijing 100850, China

<sup>b</sup>Key Laboratory of Inorganic-Organic Hybrid Functional Material Chemistry, Ministry of Education, Tianjin Key Laboratory of Structure and Performance for Functional Molecules, College of Chemistry, Tianjin Normal University, Tianjin 300387, China

Supramolecular liquid barrier based on pillar[5]arene with triethylene oxide substituents (EGP5) was capable to encapsulate sulfur mustard (SM) within its cavity and effectively prevent SM from penetrating through skin. Pretreatment of EGP5 could alleviate skin and system damage induced by SM and improve survival rate of poisoned rat models from 10% to 90%.

Chinese Chemical Letters 34 (2023) 107697



## Electrochemical detection of amino acids based on cucurbit[7]uril-mediated three-dimensional gold nanoassemblies

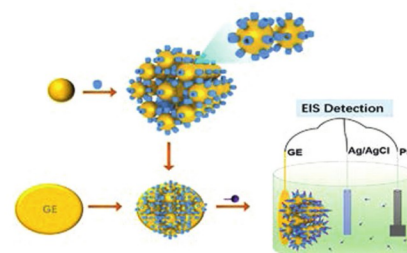
Shimi Liu<sup>a</sup>, Hao Zhang<sup>a</sup>, Yaqi Wang<sup>a</sup>, Yan Zeng<sup>a</sup>, Sobhan Chatterjee<sup>a</sup>, Feng Liang<sup>a,b</sup>

<sup>a</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>b</sup>Improve-WUST Joint Laboratory of Advanced Technology for Point-of-Care Testing and Precision Medicine, Wuhan University of Science and Technology, Wuhan 430081, China

Three-dimensional gold nanoassemblies, formed by the self-assembly of AuNPs and cucurbit[7]uril, were successfully prepared for the electrochemical detection of amino acids. And the detection limits of aromatic amino acids are lower in virtue of the higher binding constant between aromatic amino acids and CB[7].

Chinese Chemical Letters 34 (2023) 107712



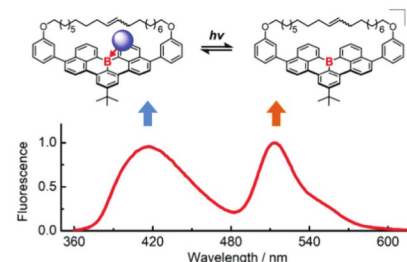
## Organoborane cyclophanes with flexible linkers: Dynamic coordination and photo-responsive fluorescence

Zengming Fan, Wenting Sun, Yue Yang, Jiaxiang Guo, Chuandong Dou, Yue Wang

State Key Laboratory of Supramolecular Structure and Materials, College of Chemistry, Jilin University, Changchun 130012, China

We report two novel non-conjugated organoborane macrocycles, which can form Lewis acid-base adducts that may dissociate in the excited state and display intriguing photo-responsive dual fluorescence.

Chinese Chemical Letters 34 (2023) 107729



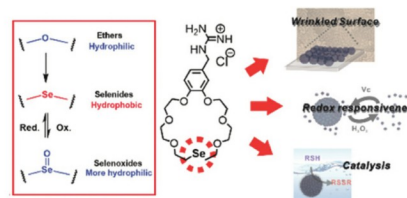
## Atom-economic macrocyclic amphiphile based on guanidinium-functionalized selenacrown ether acting as redox-responsive nanozyme

Bo Li, Qiangqiang Xu, Xin Shen, Tiezheng Pan, Jie Shang, Yan Ge, Zhenhui Qi

Sino-German Joint Research Lab for Space Biomaterials and Translational Technology, Synergetic Innovation Center of Biological Optoelectronics and Healthcare Engineering (BOHE), Shaanxi Provincial Synergistic Innovation Center for Flexible Electronics & Health Sciences (FEHS), School of Life Sciences, Northwestern Polytechnical University, Xi'an 710072, China

In this work, features including redox responsiveness, wrinkled surface and nanozyme can be achieved in a lowmolecular-weight crown ether-based macrocyclic amphiphile with a molecular weight less than 530 Da, demonstrating the great potential of guanidinium- and selenium-functionalized crown ether for the control of functional assemblies.

Chinese Chemical Letters 34 (2023) 108015



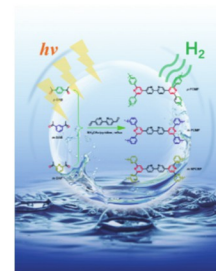
## Metal-free synthesis of pyridyl conjugated microporous polymers with tunable bandgaps for efficient visible-light-driven hydrogen evolution

Zhonghua Cheng, Yan He, Chen Yang, Nan Meng, Yaozu Liao

State Key Laboratory for Modification of Chemical Fibers and Polymer Materials, College of Materials Science and Engineering, Donghua University, Shanghai 201620, China

A series of pyridyl conjugated microporous polymers (PCMPs) has been synthesized via a metal-free synthetic polymerization between aldehyde and aryl ketone monomers. The PCMPs exhibited high visible-light driven hydrogen evolution rate (9.56  $\mu\text{mol/h}$ ), which provided wide adaptability to current materials designed for high-performance photocatalysts.

Chinese Chemical Letters 34 (2023) 107440





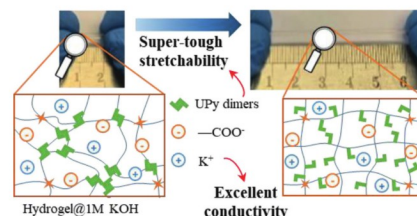
## Stretchable alkaline *quasi*-solid-state electrolytes created by super-tough, fatigue-resistant and alkali-resistant multi-bond network hydrogels

Hao Xu, Yujun Liu, Xu-Ming Xie

Key Laboratory of Advanced Materials (MOE), Department of Chemical Engineering, Tsinghua University, Beijing 100084, China

By introducing 2-ureido-4[1H]-pyrimidine (UPy) dimers as energy dissipation units, the multi-bond network hydrogels exhibit both excellent mechanical properties and high ionic conductivity.

Chinese Chemical Letters 34 (2023) 107470



## Pyrylium-based porous organic polymers via Knoevenagel condensation for efficient visible-light-driven heterogeneous photodegradation

Renwei Hu<sup>a</sup>, Mehdi Hassan<sup>c</sup>, Lu Liu<sup>a</sup>, Shuguang Zhang<sup>a</sup>, Weitao Gong<sup>a,b</sup>

<sup>a</sup>State Key Laboratory of Fine Chemicals, School of Chemical Engineering, Dalian University of Technology, Dalian 116024, China

<sup>b</sup>Engineering Laboratory of Boric and Magnesic Functional Material Preparative and Applied Technology, Dalian 116024, China

<sup>c</sup>Department of Chemistry, University of Baltistan, Skardu 16100, Pakistan

A new ionic porous organic polymer (iPOP) was readily fabricated via Knoevenagel condensation with pyrylium salts as the key building block, which exhibited efficient visible-light-driven heterogeneous photodegradation of Rhodamine B.

Chinese Chemical Letters 34 (2023) 107541



## Thiol-ene crosslinked cellulose-based gel polymer electrolyte with good structural integrity for high cycling performance lithium-metal battery

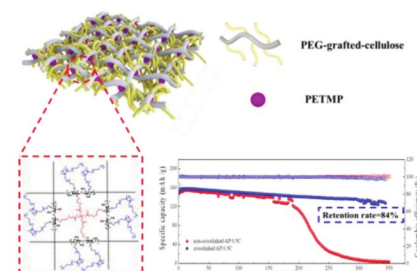
Hongbing Zhang<sup>a</sup>, Sijie Wang<sup>a</sup>, Yujie Wang<sup>a</sup>, Shuhan Dong<sup>a</sup>, Wen Chen<sup>a</sup>, De Li<sup>a</sup>, Feng Yu<sup>a</sup>, Yong Chen<sup>b</sup>

<sup>a</sup>State Key Laboratory of Marine Resource Utilization in South China Sea, Hainan Provincial Key Laboratory of Research on Utilization of Si-Zr-Ti Resources, Hainan University, Haikou 570228, China

<sup>b</sup>Guangdong Key Laboratory for Hydrogen Energy Technologies; School of Materials Science and Hydrogen Energy, Foshan University, Foshan 528000, China

A crosslinked cellulose-based GPE with long-term cycling performance is successfully designed by simple and efficient thiol-ene click chemistry.

Chinese Chemical Letters 34 (2023) 108031



## One-step selective dehydrogenation of cyclic hemiacetal sugars toward to their chiral lactones

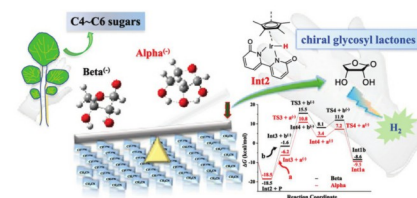
Yulu Zhan<sup>a</sup>, Yingshuang Hui<sup>a</sup>, Shuqi Wang<sup>a</sup>, Lou Gao<sup>a</sup>, Yangbin Shen<sup>b</sup>, Zhen-Hua Li<sup>a</sup>, Yahong Zhang<sup>a</sup>, Yi Tang<sup>a</sup>

<sup>a</sup>Department of Chemistry, Shanghai Key Laboratory of Molecular Catalysis and Innovative Materials, Laboratory of Advanced Materials, Collaborative Innovation Centre of Chemistry for Energy Materials, Fudan University, Shanghai 200433, China

<sup>b</sup>Institute of Materials Science and Devices, Suzhou University of Science and Technology, Suzhou 215009, China

A conversion route of cyclic hemiacetal sugars toward glycosyl lactones with its chirality delivery was developed. DFT calculations confirm that the tautomeric composition in solvent is the pivotal factor for the efficient conversion, and the high lactone yield in CH<sub>3</sub>CN can be assigned to the high proportion of  $\alpha$ -conformation form of cyclic hemiacetal sugar in it.

Chinese Chemical Letters 34 (2023) 107677



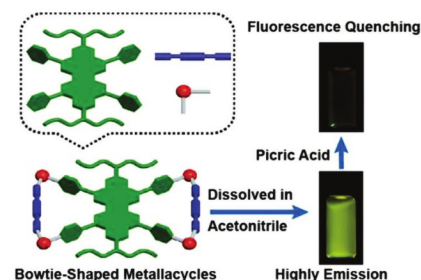
## Highly emissive perylene diimide-based bowtie-shaped metallacycles

Yali Hou, Ruping Shi, Hongye Yuan, Mingming Zhang

State Key Laboratory for Mechanical Behavior of Materials, Shaanxi International Research Center for Soft Matter, School of Materials Science and Engineering, Xi'an Jiaotong University, Xi'an 710049, China

This study not only provides a rational design strategy for preparing highly emissive bowtie-shaped metallacycles, but also sheds light on their usage in the detection of picric acid and associated nitro compounds.

Chinese Chemical Letters 34 (2023) 107688



## Hydrogen-bond locked purine chromophores with high photostability for lipid droplets imaging in cells and tissues

Jinlin Zhou<sup>a</sup>, Kun Li<sup>a</sup>, Lei Shi<sup>b</sup>, Hong Zhang<sup>a</sup>, Haoyuan Wang<sup>a</sup>, Yimin Shan<sup>a</sup>, Shanyong Chen<sup>a</sup>, Xiao-Qi Yu<sup>a,c</sup>

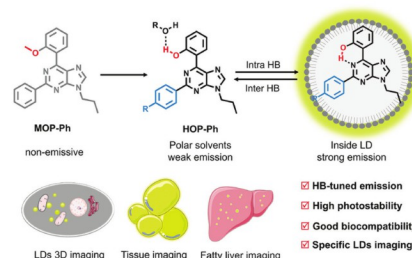
<sup>a</sup>Key Laboratory of Green Chemistry and Technology, Ministry of Education, College of Chemistry, Sichuan University, Chengdu 610064, China

<sup>b</sup>State Key Laboratory of Oral Diseases, West China Hospital of Stomatology, Sichuan University, Chengdu 610064, China

<sup>c</sup>Department of Chemistry, Xihua University, Chengdu 610039, China

Herein, we reported a new class of intramolecular hydrogen-bond locked purine-based chromophores. These novel chromophores could specifically stain the lipid droplets in living cells and tissues with high photostability.

Chinese Chemical Letters 34 (2023) 107689



## Manganese catalyzed urea and polyurea synthesis using methanol as C1 source

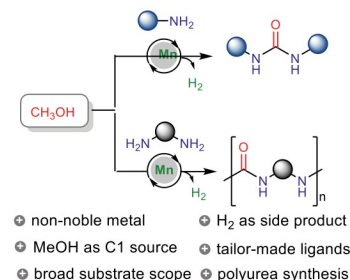
Jiaxin Guo<sup>a</sup>, Jun Tang<sup>a</sup>, Hui Xi<sup>b</sup>, Sheng-Yin Zhao<sup>a</sup>, Weiping Liu<sup>a</sup>

<sup>a</sup>Key Laboratory of Science and Technology of Eco-Textile, Ministry of Education, College of Chemistry, Chemical Engineering and Biotechnology, Donghua University, Shanghai 201620, China

<sup>b</sup>Key Laboratory of Tobacco Flavor Basic Research of CNTC, Zhengzhou Tobacco Research Institute of CNTC, Zhengzhou 450001, China

The manganese-catalyzed dehydrogenative coupling between methanol and amines for the synthesis of ureas and polyureas is described.

Chinese Chemical Letters 34 (2023) 107731



## Stereoselective construction of azepine-containing bridged scaffolds via organocatalytic bicyclization of yne-allenone esters with nitrones

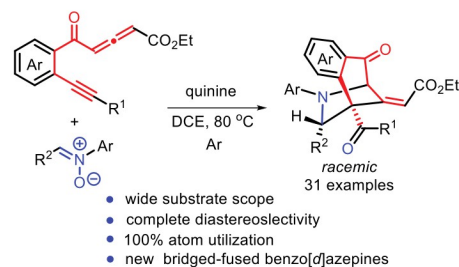
Meng-Fan Li<sup>a</sup>, Shao-Qing Shi<sup>a</sup>, Ting Xu<sup>a</sup>, Qian Zhang<sup>a</sup>, Wen-Juan Hao<sup>a</sup>, Shu-Liang Wang<sup>a</sup>, Jianyi Wang<sup>b</sup>, Shu-Jiang Tu<sup>a</sup>, Bo Jiang<sup>a</sup>

<sup>a</sup>School of Chemistry and Materials Science and Jiangsu Key Laboratory of Green Synthetic Chemistry for Functional Materials, Jiangsu Normal University, Xuzhou 221116, China

<sup>b</sup>Medical College, Guangxi University, Nanning 530004, China

A new organocatalytic double annulation cascade involving scission/recombination of N-O bonds of nitrones is reported for the first time and used to produce a range of hitherto unprecedented tricyclic bridged-fused benzo[d]azepines with moderate to good yields and complete diastereoselectivity.

Chinese Chemical Letters 34 (2023) 107751





## Hydrogen bond-assisted 1,2-*cis* O-glycosylation under mild hydrogenolytic conditions

Gefei Li<sup>a,b,c</sup>, Yanlong Luo<sup>a</sup>, Juan Mo<sup>b</sup>, Masato Noguchi<sup>c</sup>, Jie Jing<sup>a</sup>, Zhenyang Luo<sup>a</sup>, Shin-ichiro Shoda<sup>c</sup>, Xin-Shan Ye<sup>b</sup>

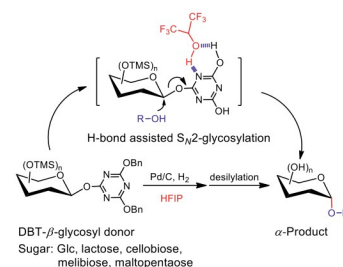
<sup>a</sup> College of Science, Nanjing Forestry University, Nanjing 210037, China

<sup>b</sup> State Key Laboratory of Natural and Biomimetic Drugs, School of Pharmaceutical Sciences, Peking University, Beijing 100191, China

<sup>c</sup> Department of Biomolecular Engineering, Graduate School of Engineering, Tohoku University, Sendai 980-8579, Japan

A hydrogen bond-assisted 1,2-*cis* O-glycosylation method was developed for the efficient and stereo-controlled synthesis of glycolipids. The reaction mechanism was studied via the NMR experiment and DFT calculation.

Chinese Chemical Letters 34 (2023) 107754



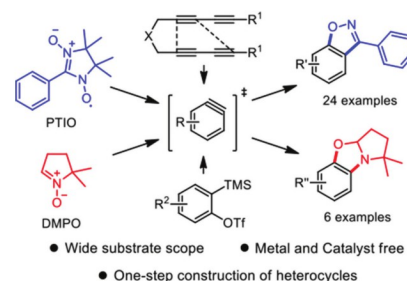
## Benzisoxazole core and benzoxazopyrrolidine via HDDA-derived benzyne with PTIO/DMPO

Yu Lei, Wenjing Zhu, Yajuan Zhang, Qiong Hu, Jie Dong, Yimin Hu

Key Laboratory of Functional Molecular Solids, Ministry of Education, Anhui Laboratory of Molecule-Based Materials, State Laboratory Cultivation Base, College of Chemistry and Materials Science, Anhui Normal University, Wuhu 241002, China

A novel method for synthesizing a series of heterocycles was provided. Benzisoxazole and benzoxazopyrrolidine derivatives can be obtained by HDDA/Kobayashi-derived benzyne with nitrones (PTIO and DMPO) through an unexpected reaction process, further promote the development of benzenoid bioactive heterocycles.

Chinese Chemical Letters 34 (2023) 107778



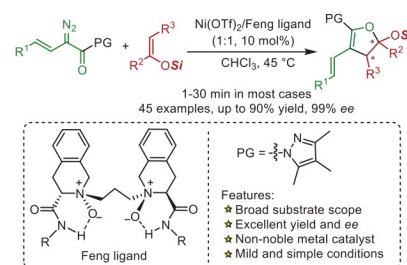
## Chiral nickel(II) complex catalyzed asymmetric (3 + 2) cycloaddition of α-diazo pyrazoleamides with 2-siloxy-1-alkenes

Wei Yang, Zhendong Yang, Long Chen, Yican Lu, Cefei Zhang, Zhishan Su, Xiaohua Liu, Xiaoming Feng

Key Laboratory of Green Chemistry & Technology, Ministry of Education, College of Chemistry, Sichuan University, Chengdu 610064, China

A highly efficient asymmetric [3 + 2] cycloaddition of α-diazo pyrazoleamides with silyl enol ethers was realized by employing a chiral *N,N'*-dioxide-Ni(II) complex catalyst. The process includes the formation of chiral nickel carbenoid intermediate and the following enantioselective cycloaddition reaction. The desired dihydrofuran *O,O*-acetal derivatives were obtained in good yields (up to 90%) with high enantioselectivity (up to 99% ee) under mild reaction conditions within short reaction time.

Chinese Chemical Letters 34 (2023) 107791



## Highly efficient synthesis and application of aryl diazonium salts via femtosecond laser-tailored 3D flow microfluidic chips

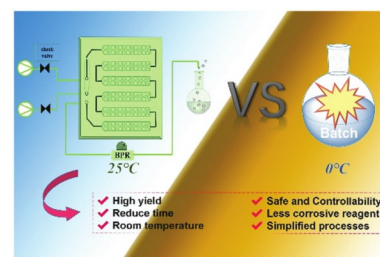
Jing Ren<sup>a</sup>, Miao Wu<sup>b</sup>, Kaiwu Dong<sup>a</sup>, Min Zhang<sup>a</sup>, Ya Cheng<sup>b</sup>, Guoyue Shi<sup>a</sup>

<sup>a</sup> School of Chemistry and Molecular Engineering, Shanghai Key Laboratory for Urban Ecological Processes and Eco-Restoration, East China Normal University, Shanghai 200241, China

<sup>b</sup> School of Physics and Electronic Science, East China Normal University, Shanghai 200241, China

This manuscript is based on centimeter-level 3D channels with large-volume microfluidic chips (MFCs) fabricated by femtosecond laser micromachining technology, which achieves efficient and controllable continuous synthesis of organic compounds, especially some traditional dangerous compounds.

Chinese Chemical Letters 34 (2023) 107694



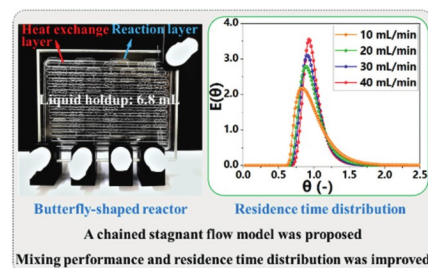
## Residence time distribution and heat/mass transfer performance of a millimeter scale butterfly-shaped reactor

Haicheng Lv, Jundi Wang, Zhongming Shu, Gang Qian, Xuezhi Duan, Zhirong Yang, Xingguo Zhou, Jing Zhang

State Key Laboratory of Chemical Engineering, East China University of Science and Technology, Shanghai 200237, China

A millimeter scale reactor with decent liquid holdup was designed based on sizing-up strategy and fabricated via femtosecond laser engraving, where fluid contraction/expansion was used to improve mixing and residence time distribution, and a flow model was established to precisely describe the flow at small-length scales.

Chinese Chemical Letters 34 (2023) 107710



## Femtosecond laser-engineered 3D microfluidic chips: Synthesis system sprouting highly efficient multiphase organic reactions

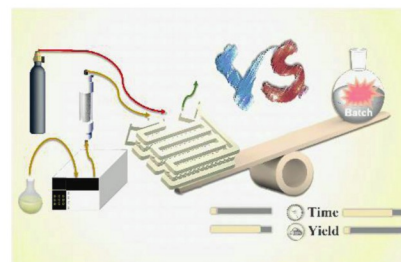
Jing Ren<sup>a</sup>, Kexin Niu<sup>a</sup>, Miao Wu<sup>b</sup>, Ya Cheng<sup>b</sup>, Guoyue Shi<sup>a</sup>

<sup>a</sup>School of Chemistry and Molecular Engineering, Shanghai Key Laboratory for Urban Ecological Processes and Eco-Restoration, East China Normal University, Shanghai 200241, China

<sup>b</sup>School of Physics and Electronic Science, East China Normal University, Shanghai 200241, China

Here, we describe a technique for on-demand multiphase synthesis in continuous flow of microfluidic chips (MFCs) with high-throughput 3D channels fabricated using femtosecond laser. The excellent mixing effect of the microchannel gives the multiphase reaction an excellent synthesis effect, which breaks the confinement of numerous phases, as this increases the mass transfer and response rates between the phases and provides strong control over mixing within each phase. The as-proposed method overcomes the limitations of batch synthesis of potentially hazardous, reactive or explosive intermediates, and meanwhile, high yield, rate, and selectivity are highlighted by the device in multiphase organic chemistry.

Chinese Chemical Letters 34 (2023) 107985



## Fully conversing and highly selective oxidation of benzene to phenol based on MOFs-derived CuO@CN photocatalyst

Longjiang Sun<sup>a,b</sup>, Dongxu Wang<sup>a</sup>, Yuxin Li<sup>a</sup>, Baogang Wu<sup>a</sup>, Qi Li<sup>a</sup>, Cheng Wang<sup>a,d</sup>, Shuao Wang<sup>c</sup>, Baojiang Jiang<sup>a</sup>

<sup>a</sup>Key Laboratory of Functional Inorganic Material Chemistry, Ministry of Education of the People's Republic of China, School of Chemistry and Materials Science, Heilongjiang University, Harbin 150080, China

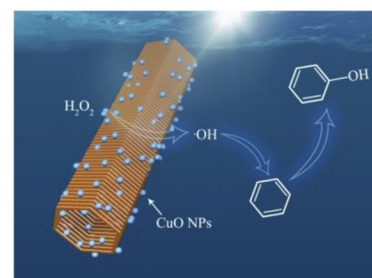
<sup>b</sup>School of Pharmacy, Jiamusi University, Jiamusi 154007, China

<sup>c</sup>State Key Laboratory of Radiation Medicine and Protection School for Radiological and interdisciplinary Sciences (RAD-X) and Collaborative Innovation Center of Radiation Medicine of Jiangsu Higher Education Institutions, Soochow University, Suzhou 215123, China

<sup>d</sup>Guangdong Laboratory of Chemistry and Fine Chemical Industry Jieyang Center, Guangdong University of Technology, Jieyang 510006, China

An advanced CuO@CN photocatalyst has been designed by loading tubular carbon nitride (CN) with CuO nanoparticles thermally polymerized from Cu-based metal-organic framework, which shows excellent photocatalytic activity in the selective oxidation of benzene to phenol.

Chinese Chemical Letters 34 (2023) 107490



## Polymer-chelation approach to high-performance Fe-N<sub>x</sub>-C catalyst towards oxygen reduction reaction

Xue Wang<sup>a,b,c</sup>, Li Zhang<sup>d</sup>, Meiling Xiao<sup>b,d</sup>, Junjie Ge<sup>a,b,c,d</sup>, Wei Xing<sup>a,b,c,d</sup>, Changpeng Liu<sup>a,b,c,d</sup>, Jianbing Zhu<sup>a,b,c,d</sup>

<sup>a</sup>Laboratory of Advanced Power Sources, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, Changchun 130022, China

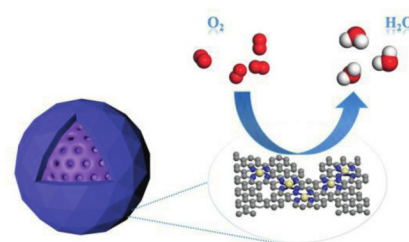
<sup>b</sup>School of Applied Chemistry and Engineering, University of Science and Technology of China, Hefei 230026, China

<sup>c</sup>Jilin Province Key Laboratory of Low Carbon Chemical Power Sources, Changchun 130022, China

<sup>d</sup>State Key Laboratory of Electroanalytical Chemistry, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, Changchun 130022, China

A polymer-chelation strategy was developed to prepare Fe-N<sub>x</sub>-C catalysts with enriched surface sites. The structural merits endowed the as-prepared catalyst with superior catalytic performance to the Pt/C benchmark for oxygen reduction reaction.

Chinese Chemical Letters 34 (2023) 107455





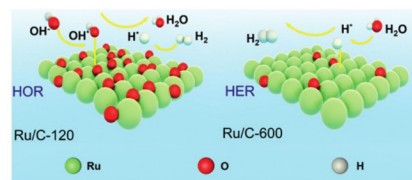
## Tuning the hydrogen and hydroxyl adsorption on Ru nanoparticles for hydrogen electrode reactions *via* size controlling

Zhengrong Li, Lulu An, Min Song, Tonghui Zhao, Jingjing Zhang, Chang Zhang, Zhizhan Li, Deli Wang

Key Laboratory of Material Chemistry for Energy Conversion and Storage, Ministry of Education, Hubei Key Laboratory of Material Chemistry and Service Failure, School of Chemistry and Chemical Engineering, Huazhong University of Science and Technology, Wuhan 430074, China

HOR and HER activities of Ru/C catalysts are highly correlated with the composition and particle sizes. For the HOR, catalyst with small particles is more efficient, due to it is a three-phase interface reaction of gas on the surface of the catalyst. For the HER, the metallic state of Ru is crucial.

Chinese Chemical Letters 34 (2023) 107622



## Combined synthesis of interconvertible $\text{Au}_{11}\text{Cd}$ and $\text{Au}_{26}\text{Cd}_5$ for photocatalytic oxidations involving singlet oxygen

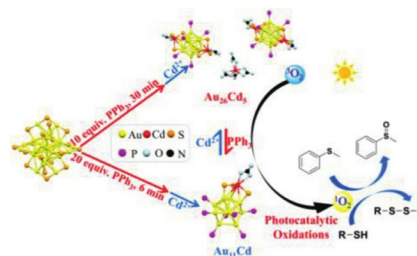
Jiafeng Zou<sup>a,b</sup>, Wenwen Fei<sup>a,b</sup>, Yao Qiao<sup>a,b</sup>, Ying Yang<sup>a,b</sup>, Zongbing He<sup>a,b</sup>, Lei Feng<sup>a,b</sup>, Man-Bo Li<sup>a,b</sup>, Zhikun Wu<sup>a,b</sup>

<sup>a</sup>Institute of Physical Science and Information Technology, Anhui University, Hefei 230601, China

<sup>b</sup>Key Laboratory of Materials Physics, Anhui Key Laboratory of Nanomaterials and Nanotechnology, CAS Center for Excellence in Nanoscience, Institute of Solid State Physics, HFIPS, Chinese Academy of Sciences, Hefei 230031, China

A "RLE-AGR" combination method was developed to synthesize interconvertible  $\text{Au}_{11}\text{Cd}$  and  $\text{Au}_{26}\text{Cd}_5$  nanoclusters for selectively photocatalyzing thioether (sulfhydryl) oxidation involving singlet oxygen.

Chinese Chemical Letters 34 (2023) 107660



## Cascaded electron transition proved by femto-second transient absorption spectroscopy for enhanced photocatalysis hydrogen generation

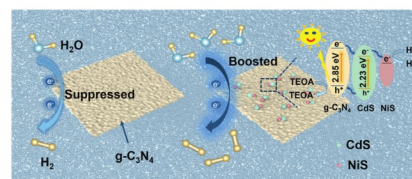
Xin Wang<sup>a</sup>, Huiqian Jiang<sup>a</sup>, Mingshan Zhu<sup>b</sup>, Xiaowei Shi<sup>a</sup>

<sup>a</sup>Department of Applied Chemistry, Zhejiang University of Technology, Hangzhou 310031, China

<sup>b</sup>School of Environment, Jinan University, Guangzhou 511443, China

Photochemical route was utilized to precisely adjust the positions of CdS and NiS on the surface of  $\text{g-C}_3\text{N}_4$ , which presents a cascaded electron transition pathway and eventually boosts the photocatalysis hydrogen evolution even with relative low content of CdS.

Chinese Chemical Letters 34 (2023) 107683



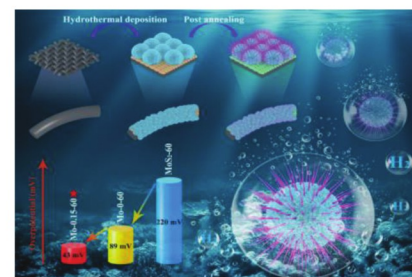
## Interfacial coupling of sea urchin-like ( $\text{Mo}_4\text{O}_{11}$ - $\text{MoS}_2$ - $\text{VO}_2$ ) promoted electron redistributions for significantly boosted hydrogen evolution reaction

Yupeng Xing, Na Li, Shipeng Qiu, Gang Zhao, Shuhua Hao, Baojie Zhang

Laboratory of Functional Micro-nano Materials and Devices, School of Physics and Technology, University of Jinan, Ji'nan 250022, China

Herein, an efficient sea urchin-like electrocatalyst ( $\text{Mo}_4\text{O}_{11}$ - $\text{MoS}_2$ - $\text{VO}_2$ ) is synthesized with hydrothermal deposition and post-annealing strategy. The catalytically active area was expanded, and the intrinsic activity toward HER was significantly improved.

Chinese Chemical Letters 34 (2023) 107724



## Bacterial signal C10-HSL stimulates spore germination of *Galactomyces geotrichum* by transboundary interaction

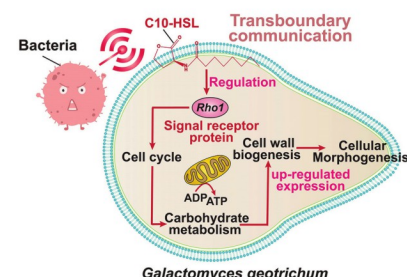
Xin Lu<sup>a</sup>, Yue Wang<sup>b</sup>, Zhixuan Feng<sup>a</sup>, Liang Fu<sup>a</sup>, Dandan Zhou<sup>a</sup>

<sup>a</sup>Jilin Engineering Lab for Water Pollution Control and Resources Recovery, Northeast Normal University, Changchun 130117, China

<sup>b</sup>Quality, Safety and Environmental Protection Department, Shanxi Road & Bridge Construction Group Co. Ltd., Taiyuan 030000, China

The transboundary communication is channeled to benefit fungi, *G. geotrichum*, maintain a synergistic relationship with QS bacteria secreted by C10-HSL. The fungal receptor gene, *Rho1*, was up-regulated to coordinate its downstream factors, resulting in the activation of cell wall signaling pathway for budding.

Chinese Chemical Letters 34 (2023) 107617



## Oxidation of diclofenac by permanganate: Kinetics, products and effect of inorganic reductants

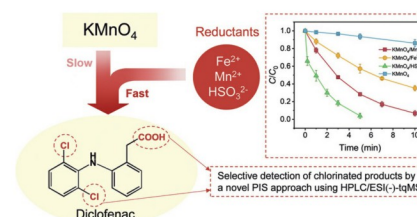
Run Huang<sup>a,b</sup>, Chaoting Guan<sup>a,b</sup>, Qin Guo<sup>a,b</sup>, Zhen Wang<sup>a,b</sup>, Hanping Pan<sup>a,b</sup>, Jin Jiang<sup>a,b</sup>

<sup>a</sup>Key Laboratory for City Cluster Environmental Safety and Green Development of the Ministry of Education, School of Ecology, Environment and Resources, Guangdong University of Technology, Guangzhou 510006, China

<sup>b</sup>Southern Marine Science and Engineering Guangdong Laboratory (Guangzhou), Guangzhou 511458, China

The reaction mechanism of diclofenac oxidation by  $\text{KMnO}_4$  was explored and the enhancing effects of reductants were examined.

Chinese Chemical Letters 34 (2023) 107610



## Enhanced removal of phosphonates from aqueous solution using PMS/UV/hydrated zirconium oxide process

Shunlong Pan<sup>a,b</sup>, Xi Nie<sup>a</sup>, Xinrui Guo<sup>a</sup>, Hao Hu<sup>a</sup>, Biming Liu<sup>c</sup>, Yongjun Zhang<sup>a</sup>

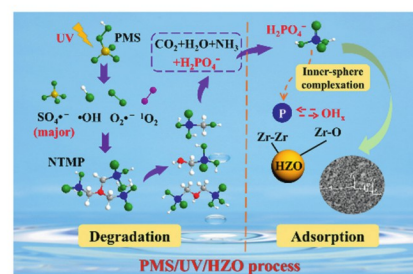
<sup>a</sup>School of Environmental Science and Engineering, Nanjing Tech University, Nanjing 210009, China

<sup>b</sup>College of Environment, Hohai University, Nanjing 210098, China

<sup>c</sup>State Key Joint Laboratory of Environment Simulation and Pollution Control, School of Environment, Tsinghua University, Beijing 100084, China

As a promising technique, peroxymonosulfate/UV irradiation/hydrated zirconium oxide (PMS/UV/HZO) process could realize the enhanced removal of phosphonates.

Chinese Chemical Letters 34 (2023) 107620



## Branched core-shell a-TiO<sub>2</sub>@N-TiO<sub>2</sub> nanospheres with gradient-doped N for highly efficient photocatalytic applications

Qingsong Zhang<sup>a</sup>, Yang Xiao<sup>b</sup>, Liu Yang<sup>a</sup>, Yanjun Wen<sup>a</sup>, Zhu Xiong<sup>c</sup>, Lin Lei<sup>a</sup>, Lin Wang<sup>d</sup>, Qingyi Zeng<sup>a</sup>

<sup>a</sup>School of Resource & Environment and Safety Engineering, University of South China, Hengyang 421001, China

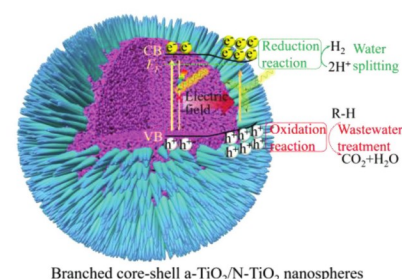
<sup>b</sup>School of Chemistry and Chemical Engineering, University of South China, Hengyang 421001, China

<sup>c</sup>Key Laboratory for Water Quality and Conservation of the Pearl River Delta, Ministry of Education, School of Environmental Science and Engineering, Guangzhou University, Guangzhou 510006, China

<sup>d</sup>Hunan Institute of Traffic Engineering, Hengyang 421001, China

A branched core-shell a-TiO<sub>2</sub>@N-TiO<sub>2</sub> nanosphere with a gradient N doping in the nanobranches is first synthesized, which exhibit highly efficient photocatalytic hydrogen generation and wastewater purification.

Chinese Chemical Letters 34 (2023) 107628





## Dissimilarity of different cephalosporins on volatile fatty acids production and antibiotic resistance genes fates during sludge fermentation and underlying mechanisms

Jingyang Luo<sup>a,b</sup>, Yuxiao Li<sup>a,b</sup>, Wenxuan Huang<sup>a,b</sup>, Feng Wang<sup>a,b</sup>, Shiyu Fang<sup>a,b</sup>, Xiaoshi Cheng<sup>a,b</sup>, Qian Feng<sup>a,b</sup>, Fang Fang<sup>a,b</sup>, Jiashun Cao<sup>a,b</sup>, Yang Wu<sup>c</sup>

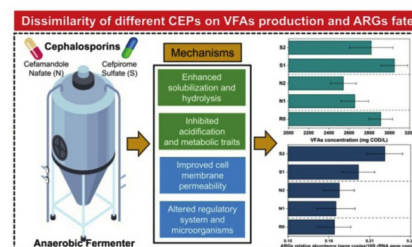
<sup>a</sup> Key Laboratory of Integrated Regulation and Resource Development on Shallow Lakes, Ministry of Education, Hohai University, Nanjing 210098, China

<sup>b</sup> College of Environment, Hohai University, Nanjing 210098, China

<sup>c</sup> State Key Laboratory of Pollution Control and Resource Reuse, School of Environmental Science and Engineering, Tongji University, Shanghai 200092, China

The dissimilarity of different CEPs impacts on the WAS fermentation for VFAs production and ARGs variations enlightened the diverse environmental behaviors of anthropogenic pollutants and evoked the caution of ecological risks.

Chinese Chemical Letters 34 (2023) 107661



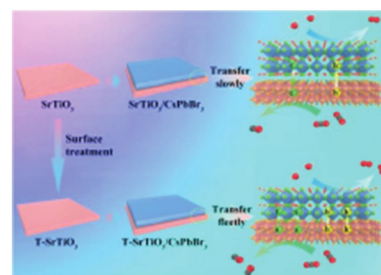
## Lattice-matched *in-situ* construction of 2D/2D T-SrTiO<sub>3</sub>/CsPbBr<sub>3</sub> heterostructure for efficient photocatalysis of CO<sub>2</sub> reduction

Su-Xian Yuan, Ke Su, You-Xiang Feng, Min Zhang, Tong-Bu Lu

MOE International Joint Laboratory of Materials Microstructure, Institute for New Energy Materials and Low Carbon Technologies, School of Materials Science and Engineering, Tianjin University of Technology, Tianjin 300384, China

A 2D/2D heterojunction of T-SrTiO<sub>3</sub>/CsPbBr<sub>3</sub> has been successfully constructed by a lattice-matched *in-situ* growth strategy, which exhibits an impressive photocatalytic activity for CO<sub>2</sub> reduction with a CO yield of 120.2 μmol g<sup>-1</sup> h<sup>-1</sup> in the absence of any organic sacrificial agents, surpassing the reported halide perovskite-based photocatalysts.

Chinese Chemical Letters 34 (2023) 107682



## Modification strategies on 2D Ni-Fe MOF-based catalysts in peroxydisulfate activation for efficient organic pollutant removal

Minjun Liu<sup>a,b</sup>, Ying Liu<sup>b</sup>, Xinru Liu<sup>b</sup>, Chengcheng Chu<sup>b</sup>, Ducheng Yao<sup>b</sup>, Shun Mao<sup>b</sup>

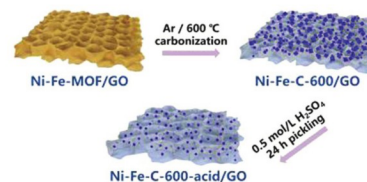
<sup>a</sup> College of Environmental and Chemical Engineering, Shanghai University of Electric Power, Shanghai 200090, China

<sup>b</sup> College of Environmental Science and Engineering, Biomedical Multidisciplinary Innovation Research Institute, Shanghai East Hospital, State Key Laboratory of Pollution Control and Resource Reuse, Tongji University, Shanghai 200092, China

In this study, various modification methods including carbonation, acid pickling, and growth of 2D MOF on graphene oxide (GO) support are adopted to enhance the performance of 2D MOF-derived catalysts for peroxydisulfate (PDS) activation.

Chinese Chemical Letters 34 (2023) 107708

*In-situ* growth of 2D Ni-Fe MOF on GO for PDS activation



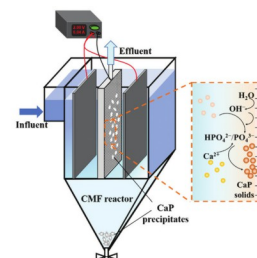
## Electrochemical removal and recovery of phosphorus from wastewater using cathodic membrane filtration reactor

Lehui Ren, Jun Xu, Ruobin Dai, Zhiwei Wang

State Key Laboratory of Pollution Control and Resource Reuse, Advanced Membrane Technology Center of Tongji University, Shanghai Institute of Pollution Control and Ecological Security, School of Environmental Science and Engineering, Tongji University, Shanghai 200092, China

A cathodic membrane filtration (CMF) reactor was developed using Ti/SnO<sub>2</sub>-Sb anode and titanium mesh cathodic membrane module to achieve efficient removal and recovery of phosphorus in wastewater.

Chinese Chemical Letters 34 (2023) 107707



## Mechanism of powdered activated carbon enhancing caproate production

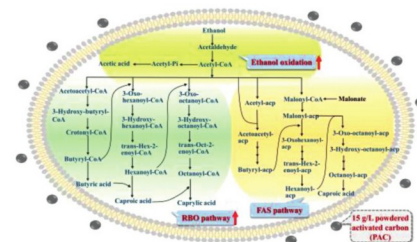
Siying Xiang<sup>a</sup>, Qinglian Wu<sup>a</sup>, Weitong Ren<sup>b</sup>, Wanqian Guo<sup>b</sup>, Nanqi Ren<sup>b</sup>

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

<sup>b</sup> State Key Laboratory of Urban Water Resource and Environment, Harbin Institute of Technology, Harbin 150090, China

Caproate production performance was doubled by adding 15 g/L PAC. The intrinsic mechanism was revealed from the effect of PAC on individual steps for caproate synthesis, and the regulation of PAC on functional bacteria and genes.

Chinese Chemical Letters 34 (2023) 107714



## A simple fluorescent sensor for highly sensitive detection of $\text{UO}_2^{2+}$

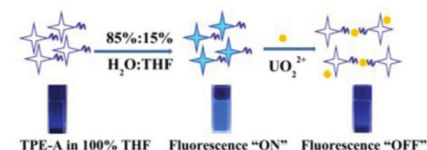
Huanhuan Ding<sup>a</sup>, Chenguang Li<sup>a</sup>, Hailing Zhang<sup>a</sup>, Na Lin<sup>a</sup>, Wen-Sheng Ren<sup>a</sup>, Shicheng Li<sup>a</sup>, Weidong Liu<sup>a</sup>, Zhonghua Xiong<sup>a</sup>, Binyuan Xia<sup>a</sup>, Chong-Chen Wang<sup>b</sup>

<sup>a</sup> Institute of Materials, China Academy of Engineering Physics, Mianyang 621907, China

<sup>b</sup> Beijing Key laboratory of Functional Materials for Building Structure and Environment Remediation/Beijing Energy Conservation & Sustainable Urban and Rural Development Provincial and Ministry Co-construction Collaboration Innovation Center, Beijing University of Civil Engineering and Architecture, Beijing 100044, China

TPE-A with aggregation-induced emission (AIE) character was established as the fluorescent sensor for efficient and sensitive detection of uranyl ion in environmental water samples.

Chinese Chemical Letters 34 (2023) 107725



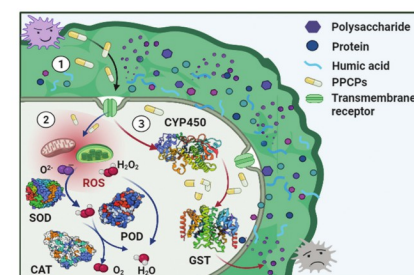
## Multistage defense response of microalgae exposed to pharmaceuticals in wastewater

Yuhao Chu, Chaofan Zhang, Xi Chen, Xue Li, Nanqi Ren, Shih-Hsin Ho

State Key Laboratory of Urban Water Resource and Environment, School of Environment, Harbin Institute of Technology, Harbin 150090, China

This study comprehensively unravels the defense mechanisms of microalgae against PhAs in wastewater. The result demonstrates that the defense of microalgae under PhAs is a multistage process involving an extracellular polymeric substance (EPS), intracellular antioxidant system, and detoxifying enzymes.

Chinese Chemical Letters 34 (2023) 107727



## Fe doped g-C<sub>3</sub>N<sub>4</sub> composited ZnIn<sub>2</sub>S<sub>4</sub> promoting Cr(VI) photoreduction

Zhuoga Cirena<sup>a</sup>, Yu Nie<sup>a</sup>, Yanfang Li<sup>a</sup>, Huilin Hu<sup>c</sup>, Xiang Huang<sup>d</sup>, Xin Tan<sup>a,d</sup>, Tao Yu<sup>b</sup>

<sup>a</sup> School of Environmental Science and Engineering, Tianjin University, Tianjin 300350, China

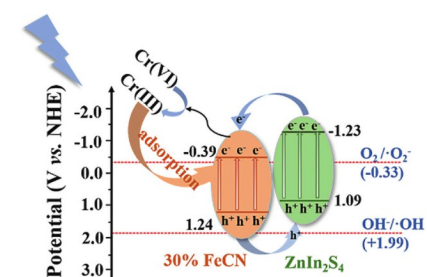
<sup>b</sup> School of Chemical Engineering and Technology, Tianjin University, Tianjin 300350, China

<sup>c</sup> School of Materials Science and Engineering, Tianjin University, Tianjin 300350, China

<sup>d</sup> School of Science, Tibet University, Lhasa 850000, China

The photocatalytic reduction of Cr(VI) with 30% FeCN/ZIS has a good performance in a wide pH range. The reason for this phenomenon was that the enhanced visible light response and the close interface contact produce a high-speed charge transfer channel, which greatly improves the efficiency of optical carrier separation and migration.

Chinese Chemical Letters 34 (2023) 107726





## Anaerobic environment as an efficient approach to improve the photostability of fatty acid photodecarboxylase

Xiaobo Guo<sup>a,b</sup>, Ao Xia<sup>a,b</sup>, Wuyuan Zhang<sup>c,d</sup>, Feng Li<sup>a,b</sup>, Yun Huang<sup>a,b</sup>, Xianqing Zhu<sup>a,b</sup>, Xun Zhu<sup>a,b</sup>, Qiang Liao<sup>a,b</sup>

<sup>a</sup>Key Laboratory of Low-grade Energy Utilization Technologies and Systems, Chongqing University, Ministry of Education, Chongqing 400044, China

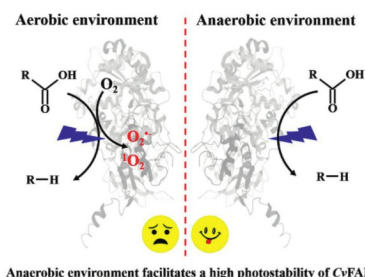
<sup>b</sup>Institute of Engineering Thermophysics, College of Energy and Power Engineering, Chongqing University, Chongqing 400044, China

<sup>c</sup>Tianjin Institute of Industrial Biotechnology, Chinese Academy of Sciences, Tianjin 300308, China

<sup>d</sup>National Center of Technology Innovation for Synthetic Biology, Tianjin 300308, China

Anaerobic environment eliminates the generation of  $O_2^{\cdot-}$  and  $^1O_2$ , thereby remarkably improving the photostability of fatty acid photodecarboxylase.

Chinese Chemical Letters 34 (2023) 107875



## Silver-anchored porous aromatic framework for efficient conversion of propargylic alcohols with CO<sub>2</sub> at ambient pressure

Xiao-Xuan Guo<sup>a</sup>, Zhao-Tian Cai<sup>a</sup>, Yaseen Muhammad<sup>b</sup>, Feng-Lei Zhang<sup>c</sup>, Rui-Ping Wei<sup>a</sup>, Li-Jing Gao<sup>a</sup>, Guo-Min Xiao<sup>a</sup>

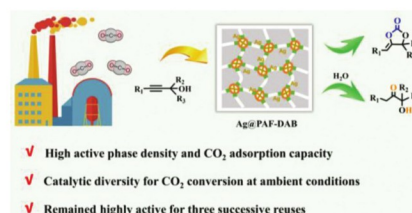
<sup>a</sup>School of Chemistry and Chemical Engineering, Southeast University, Nanjing 211189, China

<sup>b</sup>Institute of Chemical Sciences, University of Peshawar, 25120, KP, Pakistan

<sup>c</sup>Intelligent Transportation System Research Center, Southeast University, Nanjing 211189, China

Silver-anchored porous aromatic framework catalyst Ag@PAF-DAB exhibited high active phase density and CO<sub>2</sub> adsorption capacity, thus achieving efficient catalytic carboxylative cyclization and hydration of propargylic alcohols with CO<sub>2</sub> at ambient pressure.

Chinese Chemical Letters 34 (2023) 107740



## Engineering trienzyme cascade-triggered fluorescent immunosensor platform by sequentially integrating alkaline phosphatase, tyrosinase and horseradish peroxidase

Yujie Sun<sup>a</sup>, Lei Wen<sup>b</sup>, Huili Ma<sup>a</sup>, Wenlin Ma<sup>a</sup>, Zhenqian Fu<sup>a</sup>, Yinhui Li<sup>b</sup>, Chengwu Zhang<sup>c</sup>, Lin Li<sup>a</sup>, Jinhua Liu<sup>a</sup>

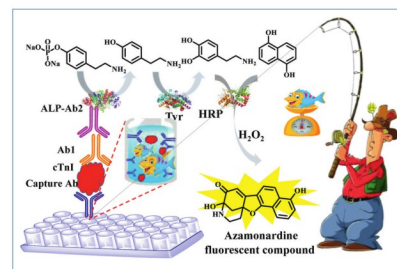
<sup>a</sup>Institute of Advanced Materials (IAM), Key Laboratory of Flexible Electronics (KLOFE), Nanjing Tech University, Nanjing 211816, China

<sup>b</sup>Key Laboratory for Green Organic Synthesis and Application of Hunan Province, Key Laboratory of Environmentally Friendly Chemistry, Application of Ministry of Education, College of Chemistry, Xiangtan University, Xiangtan 411105, China

<sup>c</sup>School of Basic Medical Sciences, Shanxi Medical University, Taiyuan 310003, China

A trienzyme cascade-triggered fluorescent immunosensor platform is constructed by sequentially integrating alkaline phosphatase, tyrosinase and horseradish peroxidase. The proposed platform is based on HRP-induced a rapid in situ fluorogenic reaction to produce a strong yellow azamonardine fluorescent compound.

Chinese Chemical Letters 34 (2023) 107654



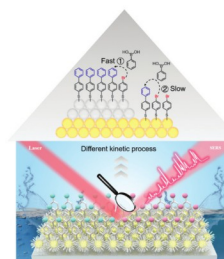
## In situ monitoring of Suzuki-Miyaura cross-coupling reaction by using surface-enhanced Raman spectroscopy on a bifunctional Au-Pd nanocoronal film

Cancan Zhang, Yonglong Li, Aonan Zhu, Ling Yang, Xiaomeng Du, Yanfang Hu, Xian Yang, Feng Zhang, Wei Xie

Key Laboratory of Advanced Energy Materials Chemistry (Ministry of Education), Tianjin Key Lab of Molecular Recognition & Biosensing, Haihe Laboratory of Sustainable Chemical Transformations, Renewable Energy Conversion and Storage Center, College of Chemistry, Nankai University, Tianjin 300071, China

With Au-Pd nanocoronals film as a bifunctional platform, we not only achieve fine SERS signals with good reproducibility and stability, but also ascertain the different kinetics of the Suzuki-Miyaura cross-coupling reactions on Pd and Au surfaces within nanometer scale.

Chinese Chemical Letters 34 (2023) 107655



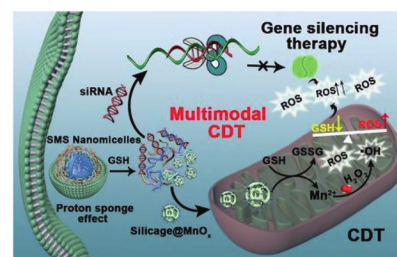
## Peptide-assembled siRNA nanomicelles confine MnO<sub>x</sub>-loaded silicages for synergistic chemical and gene-regulated cancer therapy

Jingjing Li, Juanjuan Wei, Yixuan Gao, Qi Zhao, Jianghui Sun, Jin Ouyang, Na Na

Key Laboratory of Radiopharmaceuticals, Ministry of Education, College of Chemistry, Beijing Normal University, Beijing 100085, China

Given the versatility of silica surface chemistry and its ability to distinguish inside from outside, small silicages (10 nm) are prepared to efficiently load ultrasmall MnO<sub>x</sub> with better biocompatibility and stabilities. The MnO<sub>x</sub>-loaded silicages are uniformly confined in peptide-assembled siRNA nanomicelles for multimodal therapy with spatial-temporal consistency. By multiple modifications, tumor-targeted delivery, as well as GSH-controlled reagent release of both MnO<sub>x</sub>-loaded silicages and siRNA were successfully employed, obtaining synergistic mitochondria-targeted chemodynamic therapy and gene-regulated cancer therapy.

Chinese Chemical Letters 34 (2023) 107662



## One-step detection of T4 polynucleotide kinase activity based on single particle-confined enzyme reaction and digital particle counting

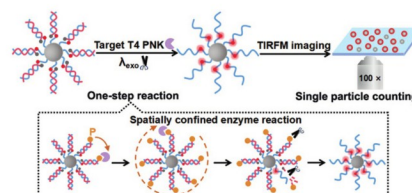
Dailu Jia<sup>a,b</sup>, Wenjiao Fan<sup>a,b</sup>, Wei Ren<sup>a,b</sup>, Chenghui Liu<sup>a,b</sup>

<sup>a</sup>Key Laboratory of Applied Surface and Colloid Chemistry, Ministry of Education, Xi'an 710119, China

<sup>b</sup>Key Laboratory of Analytical Chemistry for Life Science of Shaanxi Province, School of Chemistry & Chemical Engineering, Shaanxi Normal University, Xi'an 710119, China

Herein, we have developed a robust single particle counting-based assay for the highly sensitive quantification of T4 polynucleotide kinase (T4 PNK) through only a simple one-step reaction. Taking benefit of the exceptional space-confined kinase feature of T4 PNK and the single particle counting capability of the total internal reflection fluorescent microscope (TIRFM), the T4 PNK activity can be determined accurately without interference from other enzymes.

Chinese Chemical Letters 34 (2023) 107673



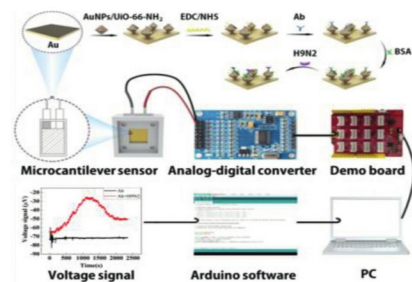
## Detection of avian influenza virus H9N2 based on self-driving and self-sensing microcantilever piezoelectric sensor

Yawen Zhang, Feng Shi, Chenguang Zhang, Xin Sheng, Yunhao Zhong, Hui Chong, Zhanjun Yang, Chengyin Wang

College of Chemistry and Chemical Engineering, Yangzhou University, Yangzhou 225002, China

A self-driving and self-sensing micro-cantilever sensor was developed by piezoelectric material and integrated circuit. The specific binding of antigen and antibody was converted into voltage signal, and the unlabeled detection of avian influenza virus (AIV) H9N2 was realized.

Chinese Chemical Letters 34 (2023) 107700



## A compact liquid chromatography-mass spectrometry instrument for the quantitation of immunosuppressants

Hao Gu<sup>a</sup>, Guoxin Dai<sup>a</sup>, Siyu Liu<sup>a</sup>, Yanbing Zhai<sup>b</sup>, Qian Xu<sup>a,c</sup>, Hongqiang Wu<sup>d</sup>, Wei Xu<sup>a</sup>

<sup>a</sup>School of Life Science, Beijing Institute of Technology, Beijing 100081, China

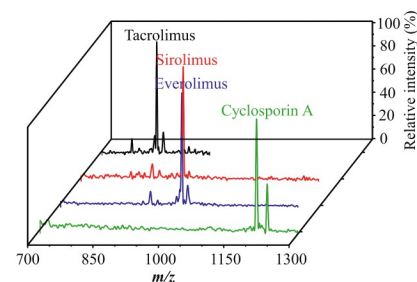
<sup>b</sup>School of Medical Technology, Beijing Institute of Technology, Beijing 100081, China

<sup>c</sup>National Institute of Metrology, Beijing 100029, China

<sup>d</sup>Biotree Metabolomics Technology Research Center, Shanghai 201800, China

The first miniaturized LC-MS instrument for therapeutic drug monitoring in clinical applications. This compact LC-MS instrument could be used in clinical diagnosis, either to replace conventional lab-scale instruments or to be used in POCT applications.

Chinese Chemical Letters 34 (2023) 107715





## Label-free photoelectric sensor for lactic acid determination in human sweat

Dongfang Han<sup>a</sup>, Xiaolei Li<sup>c</sup>, Zhishan Liang<sup>a</sup>, Bolin Zhao<sup>a</sup>, Zhifang Wu<sup>a</sup>, Fangjie Han<sup>a</sup>, Dongxue Han<sup>a,b</sup>, Li Niu<sup>a</sup>

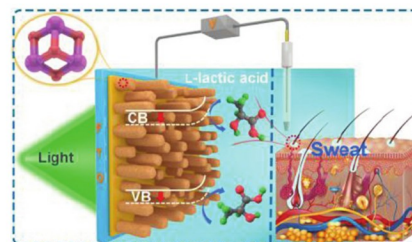
<sup>a</sup>Center for Advanced Analytical Science, School of Chemistry and Chemical Engineering, Guangzhou University, Guangzhou 510006, China

<sup>b</sup>Guangdong Provincial Key Laboratory of Psychoactive Substances Monitoring and Safety, Anti-Drug Technology Center of Guangdong Province, Guangzhou 510230, China

<sup>c</sup>State Key Laboratory of Rare Earth Resource Utilization, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, Changchun 130022, China

Lactic acid molecules in sweat are specifically adsorbed by dysprosium single crystal photoelectrode semiconductor, different concentration of lactic acid affected the charge behavior at the photoelectrode surface and the band bending of the semiconductor. As a result, the variation of analyte in the system resonated the photoelectric potential alteration as feedback. Based on this principle, a label-free photoelectric potential sensor towards human sweat L-lactic acid monitoring was established with preferable availability.

Chinese Chemical Letters 34 (2023) 107722



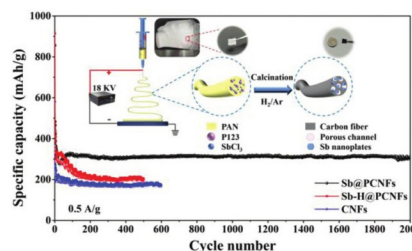
## Freestanding film formed with Sb-nanoplates embedded in flexible porous carbon nanofibers as a binder-free anode for high-performance wearable potassium-ion battery

Qi Chen, Hongbao Li, Hao Li, Rui Wang, Quanwei Ma, Longhai Zhang, Chaofeng Zhang

Institutes of Physical Science and Information Technology, Key Laboratory of Structure and Functional Regulation of Hybrid Material (Ministry of Education), Leibniz Research Center for Materials Science, Anhui Graphene Engineering Laboratory, Anhui University, Hefei 230601, China

A freestanding film formed with Sb-nanoplates embedded in flexible porous carbon nanofibers has been prepared by a simple electrospinning deposition method. The flexible free-standing film was directly used as a binder-free anode for the high-performance wearable potassium-ion battery, showing good cycling stability.

Chinese Chemical Letters 34 (2023) 107402



## Tuning the structures of polypyridinium salts as bifunctional cathode interfacial layers for all-solution-processed red quantum-dot light-emitting diodes

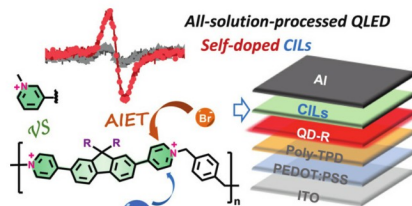
Shuguang Fu<sup>a</sup>, Xiaojun Yin<sup>a</sup>, Yang Tang<sup>b</sup>, Guohua Xie<sup>b</sup>, Chuluo Yang<sup>a</sup>

<sup>a</sup>Shenzhen Key Laboratory of New Information Display and Storage Materials, College of Materials Science and Engineering, Shenzhen University, Shenzhen 518060, China

<sup>b</sup>Hubei Key Lab on Organic and Polymeric Optoelectronic Materials, Department of Chemistry, Wuhan University, Wuhan 430072, China

Polypyridinium salts with self-doping feature and competent interfacial properties can be readily manipulated via tunable backbones, side-chains and counter-ions. All-solution-processed red quantum dot light-emitting diodes employing them as bifunctional electron injection and transporting layers deliver 50% improvement of device performances in contrast to the classical PFN.

Chinese Chemical Letters 34 (2023) 107411



## Tuning the layer structure of molybdenum trioxide towards high-performance aqueous zinc-ion batteries

Yu Tan<sup>a,e</sup>, Jinjun He<sup>c</sup>, Bo Wang<sup>b</sup>, Cheng Chao Li<sup>b</sup>, Taihong Wang<sup>a,d</sup>

<sup>a</sup>College of Materials Science and Engineering, Hunan University, Changsha 410082, China

<sup>b</sup>School of Chemical Engineering and Light Industry, Guangdong University of Technology, Guangzhou 510006, China

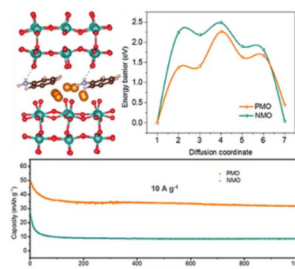
<sup>c</sup>School of Chemistry, Sun Yat-sen University, Guangzhou 510275, China

<sup>d</sup>Department of Electrical and Electronic Engineering, Southern University of Science and Technology, Shenzhen 518055, China

<sup>e</sup>College of Chemistry and Materials Science, Hunan Agriculture University, Changsha 410128, China

A conducting polymer intercalated MoO<sub>3</sub> (PMO) with extensively extended interlayer spacing is developed as a high-performance ZIBs cathode. The interlayer spacing of PMO is prominently increased which results in an improved Zn<sup>2+</sup> mobility during charge and discharge process. Moreover, the intercalation of polyaniline facilitates the charge storage and reinforces the layered structure of MoO<sub>3</sub>, leading to a high capacity and good cycling stability.

Chinese Chemical Letters 34 (2023) 107410



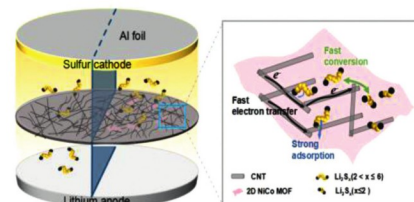
## Ultrathin two-dimensional bimetal NiCo-based MOF nanosheets as ultralight interlayer in lithium-sulfur batteries

Pingli Feng, Wenshuo Hou, Zhe Bai, Yu Bai, Kening Sun, Zhenhua Wang

Beijing Key Laboratory for Chemical Power Source and Green Catalysis, School of Chemistry and Chemical Engineering, Beijing Institute of Technology, Beijing 100081, China

The structure of the 2D NiCo MOF is shown in the figure. Both Ni and Co atoms are octahedrally coordinated by six O atoms, and these pseudo-octahedrons are along the (200) crystal plane. Such nanosheets have a large specific surface area and a large number of exposed accessible active sites. At the same time, the intrinsic activity of each site is enhanced and the catalytic performance is improved due to the synergistic effect of mixed metals. 2D NiCo MOF/CNT totally meet the requirements for the lightweight and effective interlayer.

Chinese Chemical Letters 34 (2023) 107427



## Chlorinated phthalimide polymer donor as ultra-wide bandgap and deep HOMO guest for achieving highly efficient polymer solar cells

Weichao Zhang<sup>a</sup>, Jianhua Huang<sup>b</sup>, Xiaoyu Lv<sup>c</sup>, Ming Zhang<sup>d</sup>, Wanru Liu<sup>a</sup>, Tianzi Xu<sup>a</sup>, Jun Ning<sup>c</sup>, Alata Hexig<sup>c</sup>, Feng Liu<sup>d</sup>, Aiju Xu<sup>a</sup>, Chuanlang Zhan<sup>a</sup>

<sup>a</sup>Inner Mongolia Autonomous University Key Laboratory of Advanced Materials Chemistry and Devices (AMC&DLab), Inner Mongolia Key Laboratory of Green Catalysis, College of Chemistry and Environmental Science, Inner Mongolia Normal University, Huhhot 010022, China

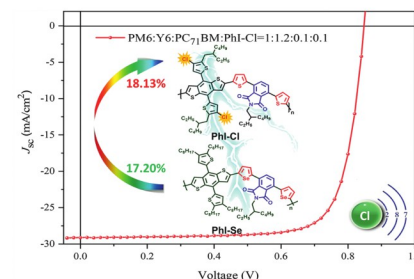
<sup>b</sup>College of Materials Science and Engineering, Huaqiao University, Xiamen 361021, China

<sup>c</sup>Inner Mongolia Key Laboratory of Functional Materials Physics and Chemistry, College of Physics and Electronic Information, Inner Mongolia Normal University, Hohhot 010022, China

<sup>d</sup>School of Chemistry and Chemical Engineering, Center for Advanced Electronic Materials and Devices, Shanghai Jiao Tong University, Shanghai 200240, China

We report a chlorinated phthalimide-based donor polymer (PhI-Cl) with an ultra-wide bandgap (2.10 eV) and a deep HOMO (−5.58 eV) energy level. After adding it into the binary (PM6:Y6) and ternary (PM6:Y6:PC71BM) systems, it not only increased the packing order of the original system, but also formed larger donor and acceptor domains, resulting in increased hole and electron mobilities and more balanced carrier mobilities. PhI-Cl-based ternary and quaternary solar cells show PCEs of over 17% and 18%, respectively.

Chinese Chemical Letters 34 (2023) 107436



## Performance improvement of air-breathing proton exchange membrane fuel cell (PEMFC) with a condensing-tower-like curved flow field

Hanqing Jin<sup>a,b</sup>, Siyi Zou<sup>a,b</sup>, Qinglin Wen<sup>b,c</sup>, Yali Li<sup>b,c</sup>, Fandi Ning<sup>b</sup>, Pengpeng Xu<sup>b,d</sup>, Saifei Pan<sup>b,c</sup>, Xiaochun Zhou<sup>a,b,e</sup>

<sup>a</sup>Nano Science and Technology Institute, University of Science and Technology of China, Suzhou 215123, China

<sup>b</sup>Division of Advanced Nanomaterials, Suzhou Institute of Nano-tech and Nano-bionics, Chinese Academy of Sciences (CAS), Suzhou 215123, China

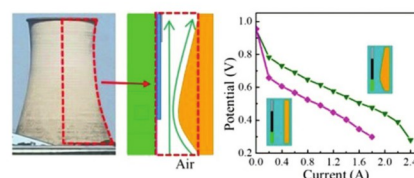
<sup>c</sup>School of Nano Technology and Nano Bionics, University of Science and Technology of China, Hefei 230026, China

<sup>d</sup>College of sciences, Shanghai University, Shanghai 200444, China

<sup>e</sup>Key Lab of Nanodevices and Applications, Suzhou Institute of Nano-Tech and Nano-Bionics, Chinese Academy of Sciences (CAS), Suzhou 215123, China

Applying a condensing-tower-like curved flow field to the cathode side of the MEA can improve the air convection, so as to improve the performance of air-breathing PEMFC.

Chinese Chemical Letters 34 (2023) 107441



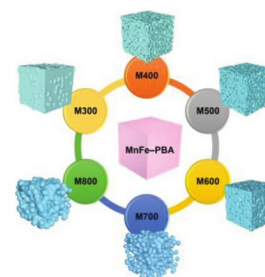
## Rational design of Prussian blue analogue-derived manganese-iron oxides-based hybrids as high-performance Li-ion-battery anodes

Lin Fan, Xiaotian Guo, Wenting Li, Xinxin Hang, Huan Pang

School of Chemistry and Chemical Engineering, Yangzhou University, Yangzhou 225000, China

A series of Mn-Fe oxides-based hybrids using Mn-Fe PBA as a template and carbon source are successfully synthesized by calcination. The interaction between the microstructure and electrochemical performance is revealed, which provides insights into developing high-performance rechargeable batteries.

Chinese Chemical Letters 34 (2023) 107447





## Tea-derived carbon materials as anode for high-performance sodium ion batteries

Huayan Wang<sup>a,b</sup>, Huixin Chen<sup>b,f</sup>, Chi Chen<sup>b,f</sup>, Miao Li<sup>c</sup>, Yiming Xie<sup>a</sup>, Xingcai Zhang<sup>d,e</sup>, Xianwen Wu<sup>g</sup>, Qiaobao Zhang<sup>c</sup>, Canzhong Lu<sup>b,f</sup>

<sup>a</sup>Engineering Research Center of Environment-Friendly Function Materials, Ministry of Education, Institute of Materials Physical Chemistry, Huaqiao University, Xiamen 361021, China

<sup>b</sup>CAS key Laboratory of Design and Assembly of Functional Nanostructures, and Fujian Provincial Key Laboratory of Nanomaterials, Fujian Institute of Research on the Structure of Matter, Chinese Academy of Sciences, Fuzhou 350002, China

<sup>c</sup>Department of Materials Science and Engineering, College of Materials, Xiamen University, Xiamen 361005, China

<sup>d</sup>School of Engineering and Applied Sciences, Harvard University, Cambridge, MA 02138, United States

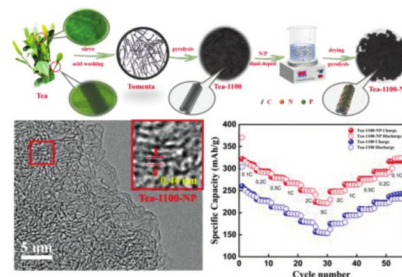
<sup>e</sup>School of Engineering, Massachusetts Institute of Technology, Cambridge, MA 02139, United States

<sup>f</sup>Xiamen Key Laboratory of Rare Earth Photoelectric Functional Materials, Xiamen Institute of Rare Earth Materials, Haixi Institutes, Chinese Academy of Sciences, Xiamen 361021, China

<sup>g</sup>School of Chemistry and Chemical Engineering, Jishou University, Jishou 416000, China

Larger carbon layer spacing and proper specific surface area are conducive to high-rate storage of sodium ions. The good diffusion kinetics and capacitive adsorption behavior of Tea-1100-NP material synergistically improve the storage performance of sodium.

Chinese Chemical Letters 34 (2023) 107465



## Enhancing the performance of organic solar cells by modification of cathode with a self-assembled monolayer of aromatic organophosphonic acid

Wenlong Liu<sup>a</sup>, Hao Lu<sup>b</sup>, Yan Zhang<sup>b</sup>, Hao Huang<sup>b</sup>, Xinming Zheng<sup>b</sup>, Yahui Liu<sup>c</sup>, Youzhi Wu<sup>a</sup>, Xinjun Xu<sup>b</sup>

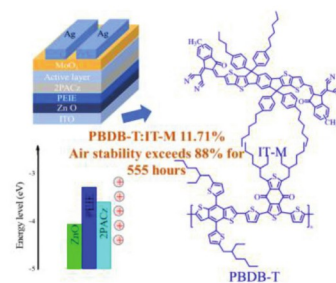
<sup>a</sup>School of Materials Science and Engineering, Lanzhou University of Technology, Lanzhou 730050, China

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

<sup>c</sup>College of Textiles & Clothing, State Key Laboratory of Bio-fibers and Eco-textiles, Qingdao University, Qingdao 266071, China

Interface modification by PEIE and 2PACz on ZnO surface is used to improve the photovoltaic performance of organic solar cells. Accompanying with the enhanced photoelectric conversion efficiency, the air stability of the device is also greatly improved.

Chinese Chemical Letters 34 (2023) 107495



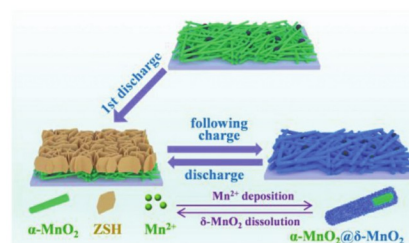
## An in-depth mechanistic insight into the redox reaction and degradation of aqueous Zn-MnO<sub>2</sub> batteries

Zongyuan You, Wei Hua, Na Li, Huanyan Liu, Jian-Gan Wang

State Key Laboratory of Solidification Processing, Center for Nano Energy Materials, School of Materials Science and Engineering, Northwestern Polytechnical University, Shaanxi Joint Lab of Graphene (NPU), Xi'an 710072, China

A two-electron reaction pathway of Mn<sup>2+</sup>/Mn<sup>4+</sup> redox couple is revealed as the main mechanism of Zn-MnO<sub>2</sub> batteries. Corrosion failure of zinc anode and the accumulation of irreversible ZnMn<sub>2</sub>O<sub>4</sub> phases on cathode jointly result in the battery degradation.

Chinese Chemical Letters 34 (2023) 107525



## Hydrated ammonium manganese phosphates by electrochemically induced manganese-defect as cathode material for aqueous zinc ion batteries

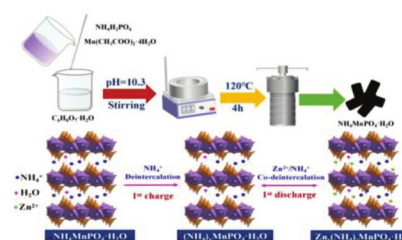
Xiangsi Wu<sup>a,b</sup>, Guangli Liu<sup>b</sup>, Sinian Yang<sup>b</sup>, Yuting Li<sup>b</sup>, Hongqiang Wang<sup>a</sup>, Qingyu Li<sup>a</sup>, Xianwen Wu<sup>b</sup>

<sup>a</sup>Guangxi Key Laboratory of Low Carbon Energy Materials, School of Chemical and Pharmaceutical Science, Guangxi New Energy Ship Battery Engineering Technology Research Center, Guangxi Normal University, Guilin 541004, China

<sup>b</sup>School of Chemistry and Chemical Engineering, Jishou University, Jishou 416000, China

A new type of cathode material of NH<sub>4</sub>MnPO<sub>4</sub>·H<sub>2</sub>O for rechargeable aqueous zinc ion batteries was synthesized through a simple hydrothermal method. An *in-situ* electrochemical strategy inducing Mn-defect has been used to unlock the electrochemical activity of NH<sub>4</sub>MnPO<sub>4</sub>·H<sub>2</sub>O through the initial charge process, which exhibits an (de)insertion mechanism of Zn<sup>2+</sup> and NH<sub>4</sub><sup>+</sup> without structural collapse during the charge/discharge process.

Chinese Chemical Letters 34 (2023) 107540



## Cu cluster embedded porous nanofibers for high-performance CO<sub>2</sub> electroreduction

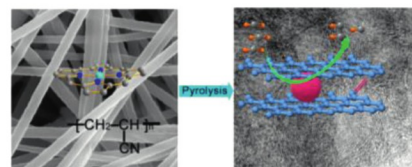
Zhifeng Xin<sup>a</sup>, Zibo Yuan<sup>a</sup>, Jingjing Liu<sup>a</sup>, Xinjian Wang<sup>a</sup>, Kejing Shen<sup>a</sup>, Yifa Chen<sup>b</sup>, Ya-Qian Lan<sup>b</sup>

<sup>a</sup>Institute of Molecular Engineering and Applied Chemistry, Anhui University of Technology, Ma'anshan 243002, China

<sup>b</sup>Jiangsu Key Laboratory of New Power Batteries, School of Chemistry and Materials Science, Nanjing Normal University, Nanjing 210023, China

Cu cluster embedded carbon nanofibers were prepared through carbonization of MOF-545-Cu doped PAN nanofiber and the continuous layered graphene skeleton and uniformly dispersed Cu clusters largely promoted the conductivity, mass transfer and catalytic activity during electrocatalytic CO<sub>2</sub>RR process.

Chinese Chemical Letters 34 (2023) 107458



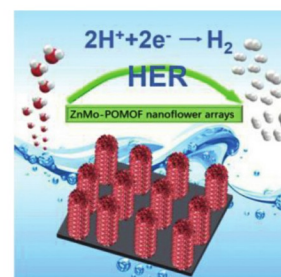
## In situ growth of polyoxometalate-based metal-organic framework nanoflower arrays for efficient hydrogen evolution

Lei Wang, A-Ni Wang, Zhen-Zhen Xue, Yan-Ru Wang, Song-De Han, Guo-Ming Wang

College of Chemistry and Chemical Engineering, Qingdao University, Qingdao 266071, China

ZnMo-POMOF nanoflower arrays grown *in-situ* on a Ni foam substrate exhibit excellent electrocatalytic hydrogen evolution and stability.

Chinese Chemical Letters 34 (2023) 107414



## Lithium storage properties of Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub> (T<sub>x</sub> = F, Cl, Br) MXenes

Pengcheng Liu<sup>a</sup>, Peng Xiao<sup>a</sup>, Ming Lu<sup>b</sup>, Hui Wang<sup>c</sup>, Na Jin<sup>a</sup>, Zifeng Lin<sup>a,d</sup>

<sup>a</sup>College of Materials Science and Engineering, Sichuan University, Chengdu 610065, China

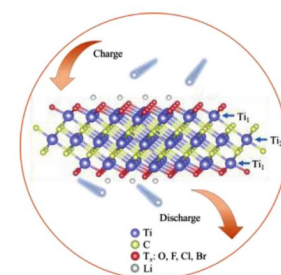
<sup>b</sup>The Joint Laboratory of MXene Materials, Key Laboratory of Functional Materials Physics and Chemistry of the Ministry of Education, Jilin Normal University, Changchun 130103, China

<sup>c</sup>Institute for Advanced Study, Chengdu University, Chengdu 610106, China

<sup>d</sup>Engineering Research Center of Alternative Energy Materials and Devices, Ministry of Education, Chengdu 610065, China

This work investigates the influence of -O, -F, -Cl, -Br surface terminations on the lithium storage properties of Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub> MXene by DFT and electrochemical analysis. It is concluded that high -O content on Ti<sub>3</sub>C<sub>2</sub>Br<sub>x</sub> MXene due to the low formation energy between -Br with Ti<sub>3</sub>C<sub>2</sub> leads to the best lithium storage properties.

Chinese Chemical Letters 34 (2023) 107426



## Crystalline porous ionic salts assembled from polyoxometalates and cationic capsule for the selective photocatalytic aerobic oxidation of aromatic alcohols to aldehydes

Qianxia Gu<sup>a</sup>, Xiao-Li Zhao<sup>b</sup>, Min Meng<sup>a</sup>, Zhiyu Shao<sup>a</sup>, Qi Zheng<sup>c</sup>, Weimin Xuan<sup>a</sup>

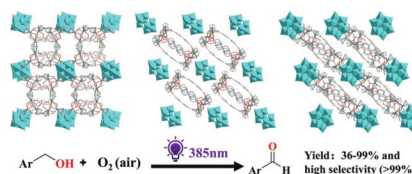
<sup>a</sup>College of Chemistry, Chemical Engineering and Biotechnology & State Key Laboratory for Modification of Chemical Fibers and Polymer Materials, Donghua University, Shanghai 201620, China

<sup>b</sup>Shanghai Key Laboratory of Green Chemistry and Chemical Processes, Department of Chemistry, East China Normal University, Shanghai 200062, China

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

Crystalline porous ionic salts are assembled from POM clusters and Zr-based cationic capsules through electrostatic interaction and hydrogen bonding, and show high-performance towards photocatalytic aerobic oxidation of aromatic alcohols to aldehydes.

Chinese Chemical Letters 34 (2023) 107444





## Boosting CO<sub>2</sub> electroreduction performance over fullerene-modified MOF-545-Co promoted by $\pi$ - $\pi$ interaction

Xue Dong<sup>a</sup>, Zhifeng Xin<sup>a</sup>, Dong He<sup>a</sup>, Jia-Ling Zhang<sup>a</sup>, Ya-Qian Lan<sup>b,c</sup>, Qian-Feng Zhang<sup>a</sup>, Yifa Chen<sup>b,c</sup>

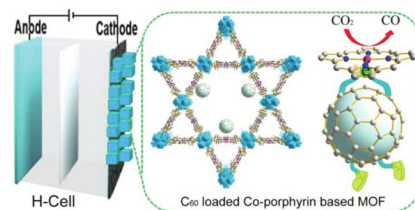
<sup>a</sup>Institute of Molecular Engineering and Applied Chemistry, Anhui University of Technology, Ma'anshan 243002, China

<sup>b</sup>National and Local Joint Engineering Research Center of MPTEs in High Energy and Safety LIBs, Engineering Research Center of MTEES (Ministry of Education), Key Lab. of ETESPG(GHEI), School of Chemistry, South China Normal University, Guangzhou 510006, China

<sup>c</sup>Jiangsu Key Laboratory of New Power Batteries, School of Chemistry and Materials Science, Nanjing Normal University, Nanjing 210023, China

Fullerene is successfully introduced into the channels of MOF-545-Co through an impregnation method and the introducing of C<sub>60</sub> largely increases the electrocatalytic performance of MOF material for CO<sub>2</sub>RR.

Chinese Chemical Letters 34 (2023) 107459



## Boosting Li-ion storage in Li<sub>2</sub>MnO<sub>3</sub> by unequal-valent Ti<sup>4+</sup>-substitution and interlayer Li vacancies building

Yu Tian<sup>a</sup>, Yuling Zhao<sup>b</sup>, Fanqi Meng<sup>d</sup>, Kaicheng Zhang<sup>a</sup>, Yanyuan Qi<sup>a</sup>, Yujie Zeng<sup>a</sup>, Congcong Cai<sup>a</sup>, Yuli Xiong<sup>a,e</sup>, Zelang Jian<sup>a</sup>, Yang Sun<sup>b,c</sup>, Lin Gu<sup>d</sup>, Wen Chen<sup>a</sup>

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<sup>b</sup>School of Materials, Shenzhen Campus of Sun Yat-sen University, Shenzhen 518107, China

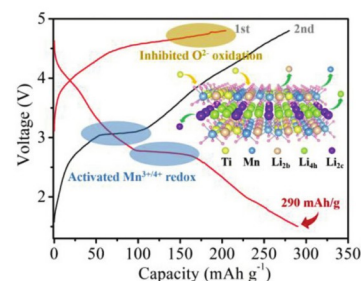
<sup>c</sup>21C Innovation Laboratory, Contemporary Ampere Technology Ltd. (CATL), Ningde 352100, China

<sup>d</sup>Institute of Physics, Chinese Academy of Sciences, Beijing 100190, China

<sup>e</sup>Sanya Science and Education Innovation Park of Wuhan University of Technology, Wuhan 430070, China

A Li<sub>0.7</sub>[Li<sub>1/3</sub>Mn<sub>2/3</sub>]<sub>0.7</sub>Ti<sub>0.3</sub>O<sub>2</sub> cathode, where Mn<sup>4+</sup>/Li<sup>+</sup> is substituted by Ti<sup>4+</sup> in Mn/Li layers, and vacancies are formed in lithium layers, aiming to inhibit the excessive oxidation of O<sup>2-</sup>, activate the Mn<sup>3+/4+</sup> redox, and promote the Li<sup>+</sup> diffusion during lithiation/delithiation processes. It shows high capacities and stable cycling performance when applied in lithium-ion batteries.

Chinese Chemical Letters 34 (2023) 107494



## Surface oxygen-deficient Ti<sub>2</sub>SC for enhanced lithium-ion uptake

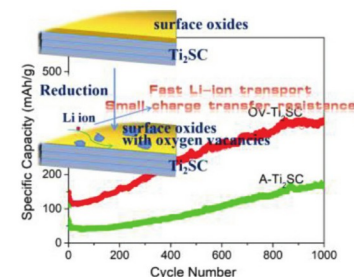
Jianguang Xu<sup>a,b</sup>, Hongyan Hang<sup>a</sup>, Chen Chen<sup>a</sup>, Boman Li<sup>a</sup>, Jiale Zhu<sup>a</sup>, Wei Yao<sup>a,b</sup>

<sup>a</sup>School of Materials Science and Engineering, Yancheng Institute of Technology, Yancheng 224051, China

<sup>b</sup>Key Laboratory for Ecological-Environment Materials of Jiangsu Province, Yancheng Institute of Technology, Yancheng 224051, China

The surface oxides have been partially reduced and abundant oxygen vacancies are generated after reduction process, thus the obtained OV-Ti<sub>2</sub>SC show enhanced lithium-ion uptake due to the fast Li-ion transport and small charge transfer resistance.

Chinese Chemical Letters 34 (2023) 107500



## Study on the morphological regulation mechanism of hollow silica microsphere prepared via emulsion droplet template

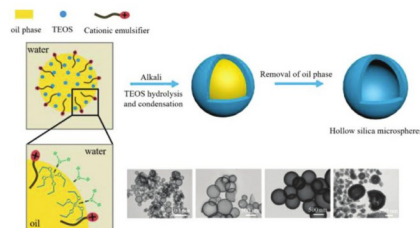
Chu Zhao<sup>a</sup>, Zhiqing Ge<sup>a</sup>, Zhuoni Jiang<sup>a,b</sup>, Shuo Yan<sup>a</sup>, Jingjing Shu<sup>a</sup>, Mozhen Wang<sup>a</sup>, Xuewu Ge<sup>a</sup>

<sup>a</sup>CAS Key Laboratory of Soft Matter Chemistry, Department of Polymer Science and Engineering, University of Science and Technology of China, Hefei 230026, China

<sup>b</sup>School of Materials Science and Engineering, Southwest University of Science and Technology, Mianyang 621010, China

Hollow silica microspheres with controllable morphology can be formed through the hydrolysis and condensation reaction of tetraethyl orthosilicate (TEOS) at the interface of the emulsion droplets stabilized by cationic emulsifier, followed by the removal of the oil phase.

Chinese Chemical Letters 34 (2023) 107499



## A solvothermal pre-oxidation strategy converting pitch from soft carbon to hard carbon for enhanced sodium storage

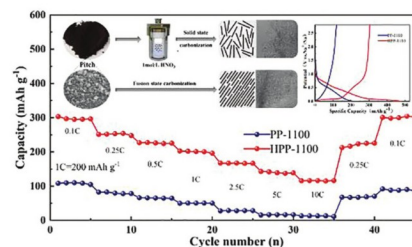
Jing Wang<sup>a</sup>, Lei Yan<sup>a</sup>, Binhua Liu<sup>a</sup>, Qingjuan Ren<sup>a</sup>, Linlin Fan<sup>a</sup>, Zhiqiang Shi<sup>a</sup>, Qingyin Zhang<sup>b</sup>

<sup>a</sup>Tianjin Key Laboratory of Advanced Fibers and Energy Storage, School of Materials Science and Engineering, Tiangong University, Tianjin 300387, China

<sup>b</sup>School of Chemical Engineering and Technology, Tiangong University, Tianjin 300387, China

Converting soft carbon precursors to hard carbon via a solvothermal pre-oxidation strategy significantly increases the sodium storage capacity from 120.3 mAh/g to 306.7 mAh/g.

Chinese Chemical Letters 34 (2023) 107526



## Blue-shifted and naked-eye recognition of $\text{H}_2\text{PO}_4^-$ and acetylacetone based on a luminescent metal-organic framework with new topology and good stability

Shuli Yao<sup>a</sup>, Hui Xu<sup>a</sup>, Tengfei Zheng<sup>a</sup>, Yunwu Li<sup>c</sup>, Haiping Huang<sup>a</sup>, Jun Wang<sup>b</sup>, Jinglin Chen<sup>a</sup>, Suijun Liu<sup>a,b</sup>, Herui Wen<sup>a</sup>

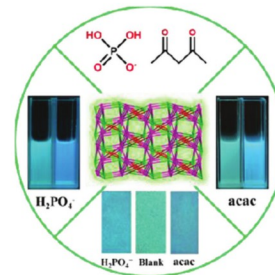
<sup>a</sup>School of Chemistry and Chemical Engineering, Jiangxi Provincial Key Laboratory of Functional Molecular Materials Chemistry, Jiangxi University of Science and Technology, Ganzhou 341000, China

<sup>b</sup>Fujian Key Laboratory of Functional Marine Sensing Materials, Minjiang University, Fuzhou 350108, China

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A novel luminescent  $\text{Zn}^{\text{II}}$ -based metal-organic framework (**JXUST-13**) with new topology was successfully synthesized by mixed ligand strategy. Importantly, **JXUST-13** could be viewed as the first dual-responsive fluorescence blue-shifted MOF sensor toward  $\text{H}_2\text{PO}_4^-$  and acac with highly selectivity and sensitivity.

Chinese Chemical Letters 34 (2023) 107532



## Lead-free bilayer heterometallic halide perovskite with reversible phase transition and photoluminescence properties

Qiangqiang Jia<sup>a</sup>, Ting Shao<sup>a</sup>, Liang Tong<sup>c</sup>, Changyuan Su<sup>b</sup>, Dawei Fu<sup>a,b</sup>, Haifeng Lu<sup>a</sup>

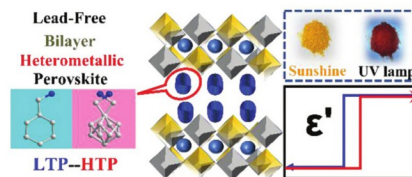
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<sup>b</sup>Ordered Matter Science Research Center, Jiangsu Key Laboratory for Science and Applications of Molecular Ferroelectrics, Southeast University, Nanjing 211189, China

<sup>c</sup>School of Environment and Chemical Engineering, Jiangsu University of Science and Technology, Zhenjiang 212002, China

A new Ruddlesden-Popper (RP) type lead-free bilayer heterometallic halide perovskite,  $[(\text{MACH})_2\text{CsAgBiBr}_7]$  ( $\text{MACH}$  = cyclohexanemethylamine), with reversible phase transition at 379.6 K/375.1 K during heating-cooling cycle, and it also possesses a reddish-brown light emission under 365 nm lamp. In summary, this work will inspire the design of lead-free heterometallic perovskite materials for the application of sensors and light-emitting diodes (LEDs) fields.

Chinese Chemical Letters 34 (2023) 107539



## Construction, photoelectric response and phase transition for new hybrid double perovskites showing narrow band gaps

Changyuan Su<sup>a</sup>, Zhixu Zhang<sup>a</sup>, Jie Yao<sup>a</sup>, Ming Chen<sup>a,b</sup>, Peizhi Huang<sup>b</sup>, Yi Zhang<sup>a,c</sup>, Dawei Fu<sup>b</sup>, Liyan Xie<sup>b</sup>

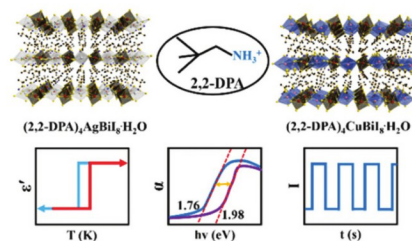
<sup>a</sup>Ordered Matter Science Research Center, Jiangsu Key Laboratory for Science and Applications of Molecular Ferroelectrics, Southeast University, Nanjing 211189, China

<sup>b</sup>Institute for Science and Applications of Molecular Ferroelectrics, Key Laboratory of the Ministry of Education for Advanced Catalysis Materials, Zhejiang Normal University, Jinhua 321004, China

<sup>c</sup>Chaotic Matter Science Research Center, Department of Materials, Metallurgy and Chemistry, Jiangxi University of Science and Technology, Ganzhou 341000, China

Using a new scheme, two new double perovskites were successfully synthesized, which show obvious light response. In addition, surprisingly, one of them was proven to be the solid-to-solid phase transition material after dehydration. The above results give them application potential in light-harvesting, light-detecting devices and temperature sensing.

Chinese Chemical Letters 34 (2023) 107442





## A three-dimensional polycyclic aromatic hydrocarbon based covalent organic framework doped with iodine for electrical conduction

Ruofan Li<sup>a</sup>, Guolong Xing<sup>b</sup>, Hui Li<sup>c</sup>, Shen Li<sup>a</sup>, Long Chen<sup>a</sup>

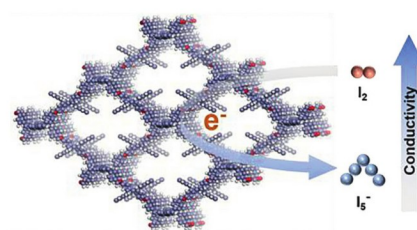
<sup>a</sup> Department of Chemistry, Tianjin Key Laboratory of Molecular Optoelectronic Science, Tianjin University, Tianjin 300072, China

<sup>b</sup> Zhejiang Engineering Laboratory for Green Syntheses and Applications of Fluorine-Containing Specialty Chemicals, Institute of Advanced Fluorine-Containing Materials, Zhejiang Normal University, Jinhua 321004, China

<sup>c</sup> State Key Laboratory of Inorganic Synthesis and Preparative Chemistry, Jilin University, Changchun 130012, China

The electrical conductivity of DDHP-COF was significantly enhanced after doping with iodine due to the formation of charge transfer complex.

Chinese Chemical Letters 34 (2023) 107454



## Intercalation behavior of spiro-bipyrrolidinium cation into graphite electrodes from ethylene carbonate

Jiaxing Qi<sup>a,b</sup>, Jichao Gao<sup>c</sup>, Ying Wang<sup>d</sup>, Masaki Yoshio<sup>e</sup>, Hongyu Wang<sup>a,b</sup>

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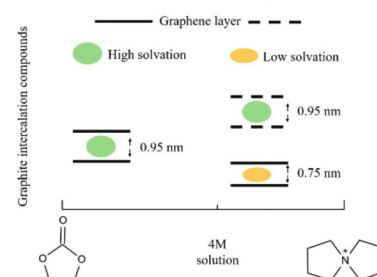
<sup>c</sup> School of Chemistry and Chemical Engineering, Linyi University, Linyi 276000, China

<sup>d</sup> State Key Laboratory of Rare Earth Resource Utilization, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, Changchun 130022, China

<sup>e</sup> Advanced Research Center, Saga University, 1341 Yoga-machi, Saga 840-0047, Japan

The intercalation of spiro-(1,1')-bipyrrolidinium cation into graphite electrodes from ethylene carbonate gives rise to two kinds of graphite intercalation compounds (GICs) with distinct characteristic intercalated gallery heights (IGHs). The smaller IGH value appears in the case of concentrated solutions due to the attenuation of the cation's solvation during its intercalation.

Chinese Chemical Letters 34 (2023) 107475



## Aggregation-induced emission meets magnetic bistability: Synergy between spin crossover and fluorescence in iron(II) complexes

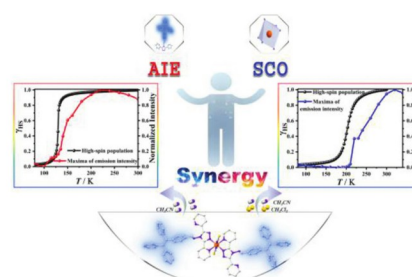
Yao Li<sup>a</sup>, Mohammad Khurram Javed<sup>a</sup>, Shu-Qi Wu<sup>b</sup>, Arshia Sulaiman<sup>a</sup>, Ying-Ying Wu<sup>a</sup>, Zhao-Yang Li<sup>a</sup>, Osamu Sato<sup>b</sup>, Xian-He Bu<sup>a</sup>

<sup>a</sup> School of Materials Science and Engineering, Nankai University, Tianjin 300350, China

<sup>b</sup> Institute for Materials Chemistry and Engineering, Kyushu University, Fukuoka 819-0395, Japan

We report the first Fe(II)-based molecule that exhibits synergistic spin crossover and fluorescence behavior, in which an aggregation-induced emission luminophore is grafted onto a spin crossover moiety. This approach overcomes the usual limitations of luminophores that suffer aggregation-caused quenching.

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