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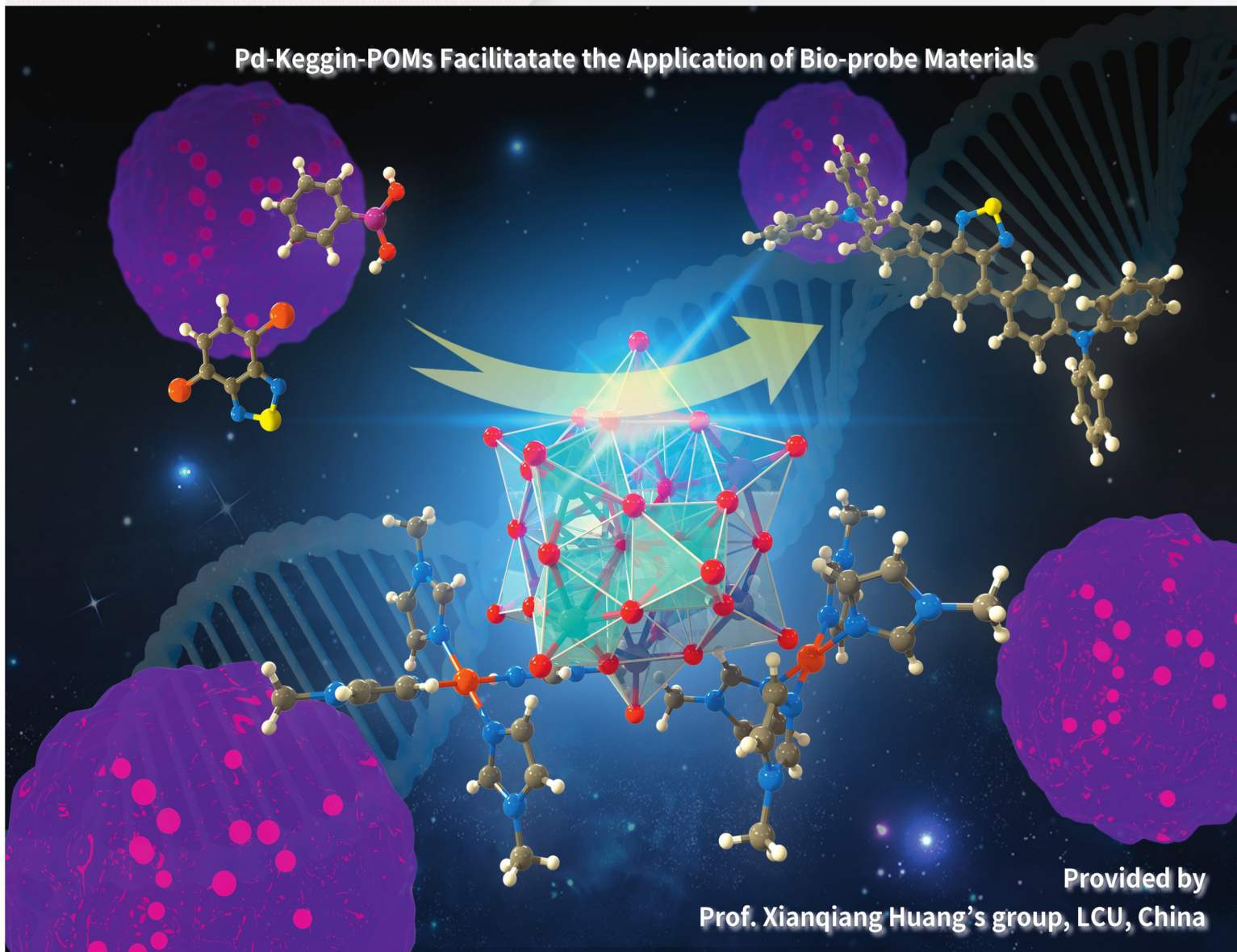
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## Pd-Keggin-POMs Facilitate the Application of Bio-probe Materials



Provided by  
Prof. Xianqiang Huang's group, LCU, China



## COMMUNICATION

Yulu Liu, Bo Lai, et al.  
Efficient reduction of hexavalent chromium  
with microscale Fe/Cu bimetal: Efficiency and  
the role of Cu

## COMMUNICATION

Zhenlu Shen, Meichao Li, et al.  
Electrochemical C-H/N-H cross-coupling  
of 2-phenylindolizines with phenothiazines  
to synthesize novel N-aryl phenothiazine  
derivatives

Chinese Chemical Society

Institute of Materia Medica, Chinese Academy of Medical Sciences

万方数据



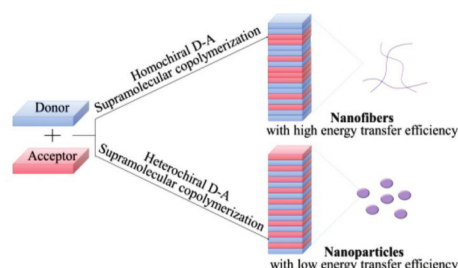
## Graphical Abstracts/Chin Chem Lett 34 (2023) 108499

## Editorials

**Supramolecular homo- and hetero-chiral donor-acceptor copolymers with distinct nanomorphology and energy transfer efficiency**Yong-Jun Lv<sup>a,b</sup>, Cheng Yang<sup>b</sup><sup>a</sup> College of Chemical Engineering, Sichuan University of Science and Engineering, Zigong 643000, China<sup>b</sup> College of Chemistry, Sichuan University, Chengdu 610065, China

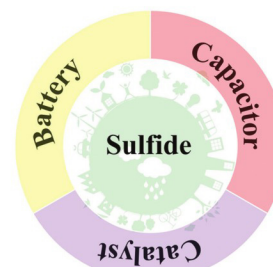
Two enantiopure donor-acceptor monomers are supramolecular copolymerized in homochiral and heterochiral organization modes, which accordingly form nanofibers and nanoparticles with distinct energy transfer efficiency.

Chinese Chemical Letters 34 (2023) 108089

**Application of metal sulfides in energy conversion and storage**Yunhe Li<sup>a</sup>, Yuanqing Li<sup>a</sup>, Jiangwei Shang<sup>a,b</sup>, Xiuwen Cheng<sup>a,b</sup><sup>a</sup> Key Laboratory for Environmental Pollution Prediction and Control, Gansu Province, College of Earth and Environmental Sciences, Lanzhou University, Lanzhou 730000, China<sup>b</sup> Key Laboratory of Pollutant Chemistry and Environmental Treatment, College of Chemistry and Environmental Science, Yili Normal University, Yining 835000, China

This editorial introduces the recent advances in the application of metal sulfides as battery, capacitor and catalyst in the environment reported in the past five years.

Chinese Chemical Letters 34 (2023) 107928

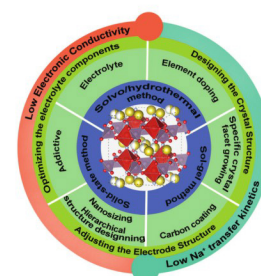


## Reviews

**Research progress on Na<sub>3</sub>V<sub>2</sub>(PO<sub>4</sub>)<sub>2</sub>F<sub>3</sub>-based cathode materials for sodium-ion batteries**Kang Liang<sup>a</sup>, Daxiong Wu<sup>b</sup>, Yurong Ren<sup>a</sup>, Xiaobing Huang<sup>c</sup>, Jianmin Ma<sup>d</sup><sup>a</sup> School of Materials Science and Engineering, Jiangsu Province Engineering Research Center of Intelligent Manufacturing Technology for the New Energy Vehicle Power Battery, Changzhou University, Changzhou 213164, China<sup>b</sup> School of Physics and Electronics, Hunan University, Changsha 410082, China<sup>c</sup> College of Chemistry and Materials Engineering, Hunan University of Arts and Science, Changde 415000, China<sup>d</sup> School of Chemistry, Tiangong University, Tianjin 300387, China

The synthetic strategies, modification, and the effect of the electrolyte components of the NVPF as the cathode materials for sodium-ion batteries are discussed and summarized in detail.

Chinese Chemical Letters 34 (2023) 107978





## Advances in catalytic elimination of atmospheric pollutants by two-dimensional transition metal oxides

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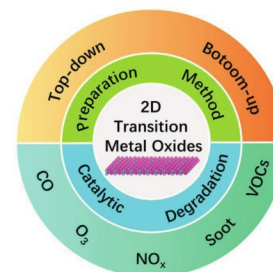
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<sup>c</sup>University of Chinese Academy of Sciences, Beijing 100049, China

<sup>d</sup>Department of Environmental Science and Engineering, Xi'an Jiaotong University, Xi'an 710049, China

This review systematically summarizes the preparation methods of two-dimensional transition metal oxides (2D TMOs) and focuses on their specific applications in the catalytic elimination of atmospheric pollutants.

Chinese Chemical Letters 34 (2023) 108000



## Electrochemical nitrate reduction to produce ammonia integrated into wastewater treatment: Investigations and challenges

Xinyi Zou<sup>a</sup>, Jiawei Xie<sup>a</sup>, Changhong Wang<sup>b</sup>, Guangming Jiang<sup>c</sup>, Kai Tang<sup>a</sup>, Chongjun Chen<sup>a,d,e</sup>

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<sup>b</sup>School of Materials Science and Engineering, Suzhou University of Science and Technology, Suzhou 215011, China

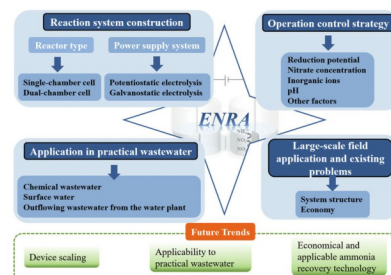
<sup>c</sup>Engineering Research Center for Waste Oil Recovery Technology and Equipment, Ministry of Education, Chongqing Technology and Business University, Chongqing 400067, China

<sup>d</sup>Jiangsu Collaborative Innovation Center of Technology and Material of Water Treatment, Suzhou 215009, China

<sup>e</sup>Tianping College of Suzhou University of Science and Technology, Suzhou 215009, China

The review focused on wastewater treatment, based on the mechanism of electrochemical nitrate reduction for ammonia production and reactor construction, then summarized the operation control strategies that should be noted for ENRA. The challenges and prospects of the field as it moves towards commercialization were discussed.

Chinese Chemical Letters 34 (2023) 107908



## Recent advances in photoelectrochemical sensors for detection of ions in water

Linyang Li<sup>a</sup>, Junlian Chen<sup>a</sup>, Chuanbao Xiao<sup>a</sup>, Yihao Luo<sup>b</sup>, Nianbing Zhong<sup>a,b</sup>, Quanhua Xie<sup>a</sup>, Haixing Chang<sup>c</sup>, Dengjie Zhong<sup>c</sup>, Yunlan Xu<sup>c</sup>, Mingfu Zhao<sup>a</sup>, Qiang Liao<sup>d</sup>

<sup>a</sup>Intelligent Fiber Sensing Technology of Chongqing Municipal Engineering Research Center of Institutions of Higher Education, Chongqing Key Laboratory of Modern Photoelectric Detection Technology and Instrument, Chongqing Key Laboratory of Fiber Optic Sensor and Photodetector, Chongqing University of Technology, Chongqing 400054, China

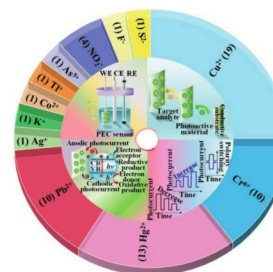
<sup>b</sup>Biodesign Swette Center for Environmental Biotechnology, Arizona State University, Tempe, AZ 85271-5701, United States

<sup>c</sup>College of Chemistry and Chemical Engineering, Chongqing University of Technology, Chongqing 400054, China

<sup>d</sup>Key Laboratory of Low-grade Energy Utilization Technologies and Systems (Chongqing University), Ministry of Education, Chongqing 400030, China

This review covers the various strategies that have been used to enhance the sensitivity, selectivity, and limit of detection for photoelectrochemical (PEC) ion sensors developed since January 2017. It provides a comprehensive and highly appealing account of the current status and important recent developments related to the detection of ions in water.

Chinese Chemical Letters 34 (2023) 107904



## Recent advances in the synthesis of benzo[b]thiophene fused polycyclic derivatives: Strategies and reactions

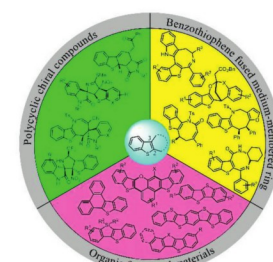
Jiali Huang<sup>a</sup>, Wenyang Wang<sup>a</sup>, Lei Zhang<sup>b</sup>, Xiangtai Meng<sup>a</sup>

<sup>a</sup>Tianjin Key Laboratory of Organic Solar Cells and Photochemical Conversion, School of Chemistry & Chemical Engineering, Tianjin University of Technology, Tianjin 300384, China

<sup>b</sup>Tianjin Engineering Technology Center of Chemical Wastewater Source Reduction and Recycling, School of Science, Tianjin Chengjian University, Tianjin 300384, China

This review summarizes the recent advances and achievements in the construction of benzo[b]thiophene-fused heterocycles from the reactions of thioaurone, thioisatin, substituted benzo[b]thiophene, and azadiene. A series of benzothiophene fused heterocycles and polycyclic chiral compounds have been efficiently synthesized by these reactions, demonstrating the generality and practicability of these strategies.

Chinese Chemical Letters 34 (2023) 108003



## Enantioselective recognition based on aggregation-induced emission

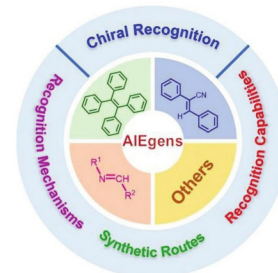
Pu Chen<sup>a</sup>, Panpan Lv<sup>a</sup>, Chang-Sheng Guo<sup>a</sup>, Rui-Peng Wang<sup>a</sup>, Xiaolong Su<sup>a</sup>, Hai-Tao Feng<sup>a</sup>, Ben Zhong Tang<sup>b</sup>

<sup>a</sup>AIE Research Center, Shaanxi Key Laboratory of Phytochemistry, College of Chemistry and Chemical Engineering, Baoji University of Arts and Sciences, Baoji 721013, China

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

In this review, we mainly summarized the recent development of chiral probes with AIE properties in chiral recognition, including chiral tetraphenylethylene (TPE) derivatives,  $\alpha$ -cyanostilbene derivatives, Schiff base derivatives and other AIEgens. Their synthetic routes, recognition capabilities and possible working mechanisms were well discussed. It is envisioned that the present review can give some significant guidance for design and synthesis of chiral AIEgens with good enantioselectivity and inspire more readers to join the research of chiral AIE.

Chinese Chemical Letters 34 (2023) 108041



## Therapeutic poly(amino acid)s as drug carriers for cancer therapy

Huihui Hu<sup>a</sup>, Zhen Zhang<sup>a</sup>, Yifen Fang<sup>b</sup>, Lei Chen<sup>a</sup>, Jun Wu<sup>c,d</sup>

<sup>a</sup>School of Biomedical Engineering, Sun Yat-sen University, Shenzhen 518107, China

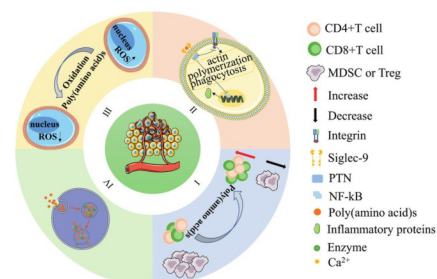
<sup>b</sup>Department of Cardiology, The Affiliated TCM Hospital of Guangzhou Medical University, Guangzhou 510120, China

<sup>c</sup>Bioscience and Biomedical Engineering Thrust, The Hong Kong University of Science and Technology (Guangzhou), Guangzhou 511400, China

<sup>d</sup>Division of Life Science, Hong Kong University of Science and Technology, Hong Kong 999077, China

Poly(amino acid)s with immunomodulatory, anti-inflammatory, antioxidant, apoptosis-promoting functions can be used as drug carriers to promote the effective treatment of cancer.

Chinese Chemical Letters 34 (2023) 107953



## Extensible and swellable hydrogel-forming microneedles for deep point-of-care sampling and drug deployment

Yuan Liu<sup>a,b</sup>, Ting Huang<sup>c</sup>, Zhiyong Qian<sup>c</sup>, Wei Chen<sup>a,b</sup>

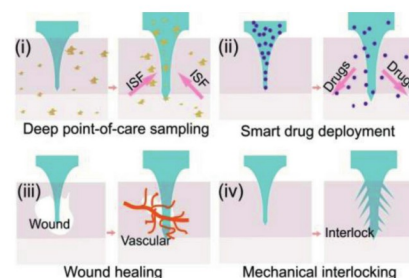
<sup>a</sup>Department of Pharmacology, School of Basic Medicine, Tongji Medical College, Huazhong University of Science and Technology, Wuhan 430030, China

<sup>b</sup>Hubei Key Laboratory for Drug Target Research and Pharmacodynamic Evaluation, Huazhong University of Science and Technology, Wuhan 430030, China

<sup>c</sup>State Key Laboratory of Biotherapy and Cancer Center, West China Hospital, Sichuan University, Collaborative Innovation Center for Biotherapy, Chengdu 610041, China

Recent innovations in functional biomaterials and chemical engineering technologies have been applied to develop extensible and swellable hydrogel-forming microneedles, achieving great deep point-of-care testing, drug deployment, wound healing and mucoadhesion improvement.

Chinese Chemical Letters 34 (2023) 108103



## Recent advancements in DNA nanotechnology-enabled extracellular vesicles detection and diagnosis: A mini review

Rongrong Huang<sup>a</sup>, Lei He<sup>b</sup>, Lian Jin<sup>c</sup>, Zhiyang Li<sup>b</sup>, Nongyue He<sup>c,d</sup>, Wenjun Miao<sup>a</sup>

<sup>a</sup>School of Pharmaceutical Sciences, Nanjing Tech University, Nanjing 211816, China

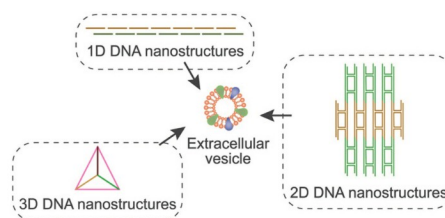
<sup>b</sup>Department of Clinical Laboratory, The Affiliated Drum Tower Hospital of Nanjing University Medical School, Nanjing 210008, China

<sup>c</sup>Economical Forest Cultivation and Utilization of 2011 Collaborative Innovation Center in Hunan Province, Hunan Key Laboratory of Biomedical Nanomaterials and Devices, Hunan University of Technology, Zhuzhou 412007, China

<sup>d</sup>State Key Laboratory of Bioelectronics, School of Biological Science and Medical Engineering, Southeast University, Nanjing 211189, China

Extracellular vesicles (EVs) contain a wealth of information that can be used in improving diagnosis and prognostic evaluation of various human disorders. DNA nanostructures exhibit unique properties and is believed to open up new possibilities in the area of EVs detection and diagnosis.

Chinese Chemical Letters 34 (2023) 107926





## Copper-based metal-organic frameworks for electrochemical reduction of CO<sub>2</sub>

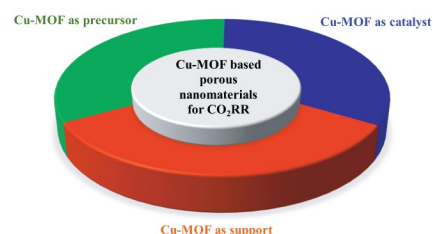
Xiaomin Kang<sup>a,b</sup>, Guodong Fu<sup>a</sup>, Xian-Zhu Fu<sup>a</sup>, Jing-Li Luo<sup>a</sup>

<sup>a</sup>Shenzhen Key Laboratory of Polymer Science and Technology, Guangdong Research Center for Interfacial Engineering of Functional Materials, College of Materials Science and Engineering, Shenzhen University, Shenzhen 518060, China

<sup>b</sup>School of Mechanical Engineering, University of South China, Hengyang 421001, China

The Cu-MOFs employed as electrocatalysts, catalyst support and precursors of electrocatalysts, exhibit excellent catalytic activities and great potential in application in electrochemical reduction of CO<sub>2</sub>.

Chinese Chemical Letters 34 (2023) 107757



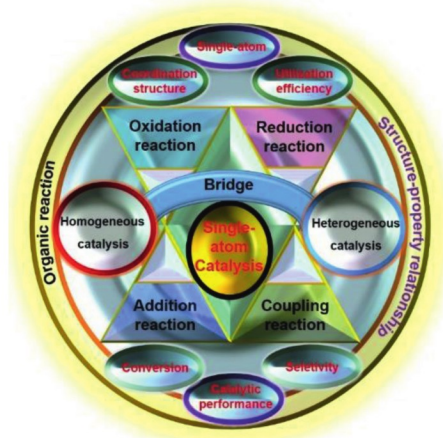
## Single-atom catalysis for organic reactions

Hanyu Hu, Jiangbo Xi

Key Laboratory of Novel Biomass-Based Environmental and Energy Materials in Petroleum and Chemical Industry, Key Laboratory of Green Chemical Engineering Process of Ministry of Education, Engineering Research Center of Phosphorus Resources Development and Utilization of Ministry of Education, Hubei Key Laboratory of Novel Reactor and Green Chemical Technology, School of Chemistry and Environmental Engineering, Wuhan Institute of Technology, Wuhan 430205, China

This review provides a brief overview of the recent development of single-atom catalysts and their practical applications in organic reactions as well as the structure-property relationships. Based on the progresses and limitations of single-atom catalysis, the development trends, future challenges and perspectives in this frontier field are also proposed.

Chinese Chemical Letters 34 (2023) 107959



## Current development of bicyclic peptides

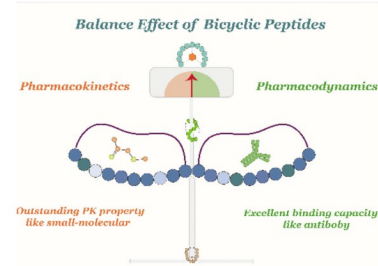
Dazhi Feng<sup>a</sup>, Lihua Liu<sup>a</sup>, Yuqi Shi<sup>a</sup>, Pian Du<sup>a</sup>, Shengtao Xu<sup>a</sup>, Zheyang Zhu<sup>b</sup>, Jinyi Xu<sup>a</sup>, Hong Yao<sup>a</sup>

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<sup>b</sup>School of Pharmacy, The University of Nottingham, University Park Campus, Nottingham NG7 2RD, United Kingdom

This review discusses the progresses and advantages of bicyclic peptides. Classification and synthesis of bicyclic peptides are also summarized.

Chinese Chemical Letters 34 (2023) 108026



## Current strategies for improving limitations of proteolysis targeting chimeras

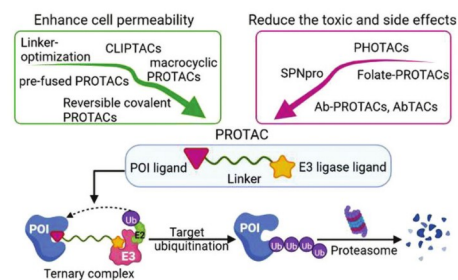
Chunlan Pu<sup>a</sup>, Shirui Wang<sup>b</sup>, Lei Liu<sup>a</sup>, Zhonghui Feng<sup>a</sup>, Hongjia Zhang<sup>b</sup>, Qianyan Gong<sup>a</sup>, Yueshan Sun<sup>a</sup>, Yuanbiao Guo<sup>a</sup>, Rui Li<sup>b</sup>

<sup>a</sup>Medical Research Center, The Third People's Hospital of Chengdu, The Affiliated Hospital of Southwest Jiaotong University, The Second Chengdu Hospital Affiliated to Chongqing Medical University, Chengdu 610031, China

<sup>b</sup>State Key Laboratory of Biotherapy, Collaborative Innovation Center of Biotherapy and Cancer Center, West China Hospital of Sichuan University, Chengdu 610041, China

This review summarized alternative strategies to improve cell permeability and toxic side effects of PROTACs through linker structural optimization or multifunctional modification, and discussing the pros and cons of current strategies and giving guidelines for PROTACs reasonable design.

Chinese Chemical Letters 34 (2023) 107927



## N-Aryl diketopyrrolopyrrole derivatives towards organic optical and electronic materials

Jinqiu Meng<sup>a</sup>, Nan Luo<sup>a</sup>, Guanxin Zhang<sup>b</sup>, Xiangfeng Shao<sup>a</sup>, Zitong Liu<sup>a,b</sup>, Deqing Zhang<sup>b,c</sup>

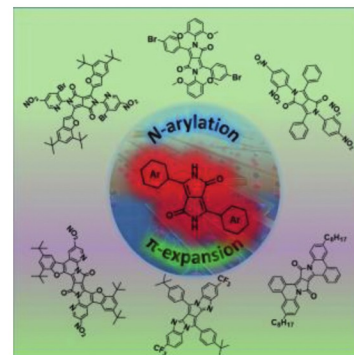
<sup>a</sup>State Key Laboratory of Applied Organic Chemistry (SKLAOC), Key Laboratory of Special Function Materials and Structure Design, College of Chemistry and Chemical Engineering, Lanzhou University, Lanzhou 730000, China

<sup>b</sup>Beijing National Laboratory for Molecular Sciences, CAS Key Laboratory of Organic Solids, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China

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

Recent developments in the synthesis of N-aryl diketopyrrolopyrroles (DPPs) and correlated  $\pi$ -expanded derivatives are summarized, and the future perspectives are discussed.

Chinese Chemical Letters 34 (2023) 107687



## Biomaterial-induced macrophage polarization for bone regeneration

Long Chen<sup>a,b</sup>, Zhicheng Yao<sup>c</sup>, Siqin Zhang<sup>d</sup>, Kuihan Tang<sup>a</sup>, Qiming Yang<sup>a</sup>, Yuanzheng Wang<sup>a</sup>, Bohan Li<sup>a</sup>, Yingjie Nie<sup>b,e</sup>, Xiaobin Tian<sup>f</sup>, Li Sun<sup>a,b</sup>

<sup>a</sup>Department of Orthopedics, Guizhou Provincial People's Hospital, Guiyang 550000, China

<sup>b</sup>Medical College, Guizhou University, Guiyang 550000, China

<sup>c</sup>Department of Materials Science and Engineering, Translational Tissue Engineering Center, Johns Hopkins University, Baltimore, MD 21218, United States

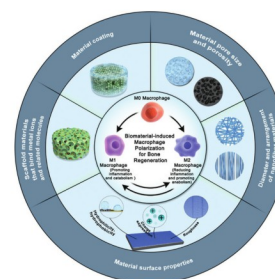
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<sup>f</sup>Department of Orthopedics, The Affiliated Hospital of Guizhou Medical University, Guiyang 550000, China

This review summarized that macrophages are important in tissue repair process after orthopedic implantation. An ideal orthopedic implant should have immunomodulatory effect on regulating macrophages behavior. However, challenges still exist in investigating the time, sequence, and intensity of the transition between different phenotypes of macrophages during the tissue repair process. Recent studies have developed construction of macrophage-regulated orthopedic implants by changing the material properties.

Chinese Chemical Letters 34 (2023) 107925



## Communications

### Linkages of volatile fatty acids and polyhexamethylene guanidine stress during sludge fermentation: Metagenomic insights of microbial metabolic traits and adaptation

Feng Wang<sup>a,b</sup>, Wei Du<sup>a,b</sup>, Wenxuan Huang<sup>a,b</sup>, Shiyu Fang<sup>a,b</sup>, Xiaoshi Cheng<sup>a,b</sup>, Leiyu Feng<sup>c</sup>, Jiashun Cao<sup>a,b</sup>, Jingyang Luo<sup>a,b</sup>, Yang Wu<sup>c</sup>

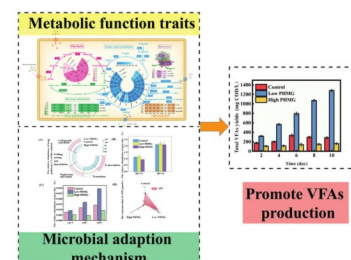
<sup>a</sup>Key Laboratory of Integrated Regulation and Resource Development on Shallow Lakes, Ministry of Education, Hohai University, Nanjing 210098, China

<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

This work enlightened the effects of emerging pollutants on WAS fermentation at the genetic levels, and provided guidance on the WAS treatment and resource recovery.

Chinese Chemical Letters 34 (2023) 107890



### Natural polymers-enhanced double-network hydrogel as wearable flexible sensor with high mechanical strength and strain sensitivity

Zhijie Zhao<sup>a</sup>, Xiao Fan<sup>a</sup>, Shuoxuan Wang<sup>a</sup>, Xiaoning Jin<sup>a</sup>, Junjie Li<sup>b,c</sup>, Yuping Wei<sup>a,c</sup>, Yong Wang<sup>a</sup>

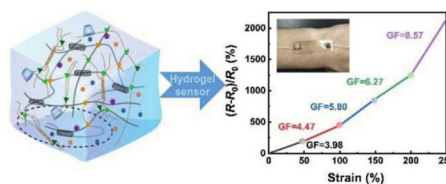
<sup>a</sup>Department of Chemistry, School of Science, Tianjin University, Tianjin 300350, China

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

<sup>c</sup>Frontiers Science Center for Synthetic Biology and Key Laboratory of Systems Bioengineering (Ministry of Education), Tianjin University, Tianjin 300350, China

The ion-conducting hydrogel was prepared by introducing natural gelatin-dialdehyde  $\beta$ -cyclodextrin into synthetic polyvinyl alcohol-borax hydrogel network to enhance its tensile strength. Surprisingly, it presented high strain sensitivity of GF = 8.57 even in 200%-250% strain extent.

Chinese Chemical Letters 34 (2023) 107892





## Design of copper oxide and oxygen codoped graphitic carbon nitride activator for efficient radical and nonradical activation of peroxymonosulfate

Lin Wei<sup>a</sup>, Jialing Li<sup>b</sup>, Chengyun Zhou<sup>a</sup>, Biao Song<sup>a</sup>, Fanzhi Qin<sup>a</sup>, Wenjun Wang<sup>c</sup>, Hanzhuo Luo<sup>a</sup>, Deyu Qin<sup>a</sup>, Cheng Huang<sup>a</sup>, Chen Zhang<sup>a</sup>, Yang Yang<sup>d</sup>

<sup>a</sup> College of Environmental Science and Engineering, Hunan University and Key Laboratory of Environmental Biology and Pollution Control, Ministry of Education (Hunan University), Changsha 410082, China

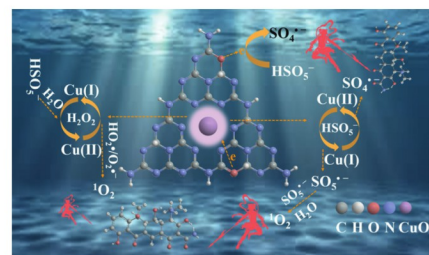
<sup>b</sup> School of Design, Hunan University, Changsha 410082, China

<sup>c</sup> School of Resources and Environment, Hunan University of Technology and Business, Changsha 410205, China

<sup>d</sup> Department of Chemical and Materials Engineering, University of Alberta, Edmonton, Alberta T6G 1H9, Canada

This work developed a high-efficiency PMS activator to degrade oxytetracycline in water and wastewater. The synergistic effect between the oxygen site of CN and CuO can modulate the electronic structure further facilitating the formation of non-radical  $^1\text{O}_2$  and various reactive radicals.

Chinese Chemical Letters 34 (2023) 107893



## Covalent coupling promoting charge transport of CdSeTe/UiO-66 for boosting photocatalytic CO<sub>2</sub> reduction

Lisha Chen<sup>a</sup>, Qianqian Tang<sup>b</sup>, Shihao Wu<sup>b</sup>, Longshuai Zhang<sup>b</sup>, Lifang Feng<sup>b</sup>, Yuan Wang<sup>c</sup>, Yiling Xie<sup>c</sup>, Yan Li<sup>c</sup>, Jian-Ping Zou<sup>a,b</sup>, Sheng-Lian Luo<sup>a,b</sup>

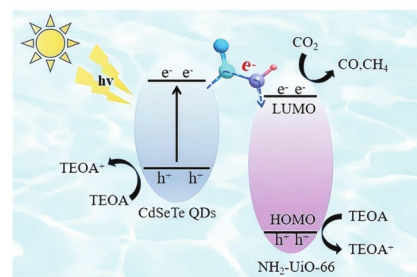
<sup>a</sup> Key Laboratory of Poyang Lake Environment and Resource Utilization of Ministry of Education, School of Resources & Environment, Nanchang University, Nanchang 330031, China

<sup>b</sup> Key Laboratory of Jiangxi Province for Persistent Pollutants Control and Resources Recycle, Nanchang Hangkong University, Nanchang 330063, China

<sup>c</sup> School of Chemistry & Molecular Engineering, East China University of Science and Technology, Shanghai 200237, China

The acylamino between CdSeTe QDs and NH<sub>2</sub>-UiO-66 can act as a bridge for electron transmission and the covalent bonding can significantly improve the stability of heterojunction photocatalysts.

Chinese Chemical Letters 34 (2023) 107903



## Atomically precise Au<sub>25</sub>(GSH)<sub>18</sub> nanoclusters versus plasmonic Au nanocrystals: Evaluating charge impetus in solar water oxidation

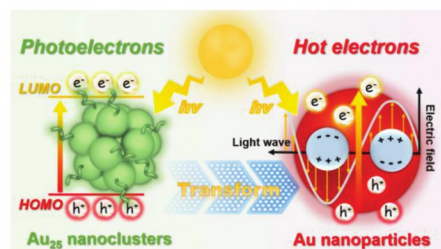
Qiao-Ling Mo<sup>a</sup>, Xiao-Cheng Dai<sup>a</sup>, Yang Xiao<sup>a</sup>, Fang-Xing Xiao<sup>a,b</sup>

<sup>a</sup> College of Materials Science and Engineering, Fuzhou University, New Campus, Minhou 350108, China

<sup>b</sup> Fujian Science & Technology Innovation Laboratory for Optoelectronic Information of China, Fuzhou 350108, China

Unveiling the roles of photosensitization effect of Au<sub>25</sub> NCs and plasmonic effect of Au NPs in boosting interfacial charge transfer for PEC water splitting reaction.

Chinese Chemical Letters 34 (2023) 107901



## A new insight into the promoting effects of transition metal phosphides in methanol electrooxidation

Junjie Ding<sup>a</sup>, Shaojie Jing<sup>a</sup>, Changqing Yin<sup>b</sup>, Chaogang Ban<sup>a</sup>, Kaiwen Wang<sup>c</sup>, Xue Liu<sup>a</sup>, Youyu Duan<sup>a</sup>, Yuxin Zhang<sup>b</sup>, Guang Han<sup>b</sup>, Liyong Gan<sup>a</sup>, Jinsong Rao<sup>b</sup>

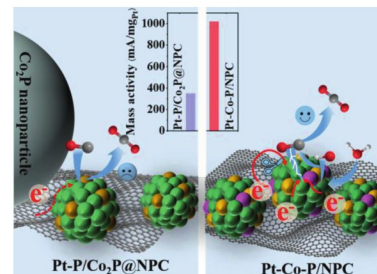
<sup>a</sup> College of Physics and Center of Quantum Materials and Devices, Chongqing University, Chongqing 401331, China

<sup>b</sup> College of Material Science and Engineering, Chongqing University, Chongqing 400044, China

<sup>c</sup> Beijing Key Laboratory of Microstructure and Property of Advanced Materials, Beijing University of Technology, Beijing 100024, China

The real promoting species is the resultant Pt-Co-P composite rather than Co<sub>2</sub>P itself when Co<sub>2</sub>P is applied as a co-catalyst for MOR. Our study provides a new insight into the promoting effects of transition metal phosphides in MOR.

Chinese Chemical Letters 34 (2023) 107899



## Oxygen promoted hydrogen production from formaldehyde reforming with oxide-derived Cu nanowires at room temperature

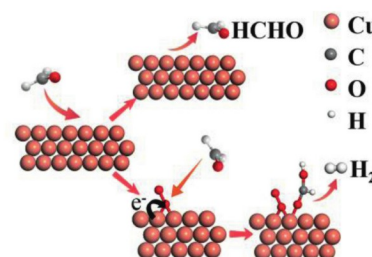
Yutong Wu<sup>a</sup>, Chuangwei Liu<sup>a</sup>, Yinglei Liu<sup>a</sup>, Gaowu Qin<sup>b</sup>, Song Li<sup>a,b</sup>

<sup>a</sup>Key Lab for Anisotropy and Texture of Materials (MoE), School of Materials Science and Engineering, Northeastern University, Shenyang 110819, China

<sup>b</sup>Institute for Frontier Technologies of Low-Carbon Steelmaking, Shenyang 110819, China

The inert sites on the Cu surface are activated by the adsorbed oxygen, making Cu nanowire catalyst have great catalytic performance for hydrogen production from formaldehyde reforming.

Chinese Chemical Letters 34 (2023) 107905



## Toehold-mediated strand displacement reaction-propelled cascade DNAzyme amplifier for microRNA let-7a detection

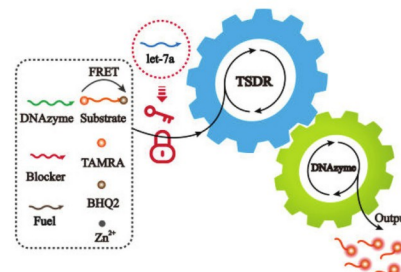
Na Wang<sup>a</sup>, Yongjian Jiang<sup>a</sup>, Kunhan Nie<sup>a</sup>, Di Li<sup>b</sup>, Hui Liu<sup>a</sup>, Jian Wang<sup>a</sup>, Chengzhi Huang<sup>a</sup>, Chunmei Li<sup>a</sup>

<sup>a</sup>Key Laboratory of Luminescence Analysis and Molecular Sensing (Southwest University), Ministry of Education, College of Pharmaceutical Sciences, Southwest University, Chongqing 400715, China

<sup>b</sup>The Second Affiliated Hospital of Chongqing Medical University, Chongqing 400010, China

A cascade DNAzyme amplifier with low cost and simple procedures was designed for sensitive and selective detection of microRNA let-7a by exploiting concurrent amplification cycle principles of toehold-mediated strand displacement reaction (TSDR) and Zn<sup>2+</sup>-assisted DNAzyme cycle.

Chinese Chemical Letters 34 (2023) 107906



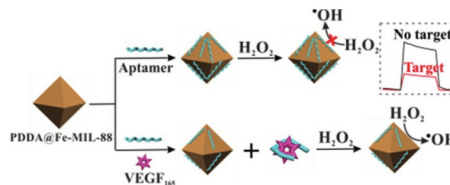
## Label-free homogeneous photoelectrochemical aptasensing of VEGF<sub>165</sub> based on DNA-regulated peroxidase-mimetic activity of metal-organic-frameworks

Ting Hou, Ningning Xu, Xin Song, Limin Yang, Feng Li

College of Chemistry and Pharmaceutical Sciences, Qingdao Agricultural University, Qingdao 266109, China

We propose here a label-free homogenous PEC aptasensing strategy for VEGF<sub>165</sub> detection based on the DNA-regulated peroxidase-like activity of Fe-MIL-88, with high sensitivity and good specificity. As far as we know, it is the first example to employ the peroxidase-like activity of MOFs in PEC biosensing.

Chinese Chemical Letters 34 (2023) 107907



## Antioxidant induced bulk passivation for efficient and stable hole transport layer-free carbon electrode perovskite solar cells

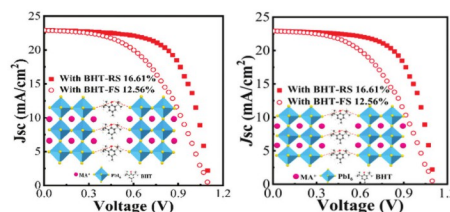
Yetai Cheng<sup>a</sup>, Qingbo Wei<sup>a</sup>, Nannan Wang<sup>a</sup>, Zhangwen Ye<sup>a</sup>, Yanbin Zhao<sup>a</sup>, Qiongyao Wang<sup>a</sup>, Depeng Chu<sup>b</sup>, Lingxing Zan<sup>a</sup>, Feng Fu<sup>a</sup>, Yucheng Liu<sup>b</sup>

<sup>a</sup>Key Laboratory of Chemical Reaction Engineering of Shaanxi Province, College of Chemistry & Chemical Engineering, Yan'an University, Yan'an 716000, China

<sup>b</sup>Shaanxi Key Laboratory for Advanced Energy Devices, Shaanxi Engineering Lab for Advanced Energy Technology, Institute for Advanced Energy Materials, School of Materials Science and Engineering, Shaanxi Normal University, Xi'an 710062, China

We added the 2,6-di-*tert*-butyl-4-methylphenol containing benzene rings and hydroxyl groups into the precursor solution to prepare high quality perovskite films. The champion cell performed a power conversion efficiency of 16.88%.

Chinese Chemical Letters 34 (2023) 107933





## Efficient reduction of hexavalent chromium with microscale Fe/Cu bimetals: Efficiency and the role of Cu

Yue Yuan<sup>a,b</sup>, Zhikui Zhou<sup>a,b</sup>, Xinyi Zhang<sup>a,b</sup>, Xin Li<sup>a,b</sup>, Yulu Liu<sup>c</sup>, Shengtao Yang<sup>a,b</sup>, Bo Lai<sup>d</sup>

<sup>a</sup>Key Laboratory of Pollution Control Chemistry and Environmental Functional Materials for Qinghai-Tibet Plateau of the National Ethnic Affairs Commission, School of Chemistry and Environment, Southwest Minzu University, Chengdu 610041, China

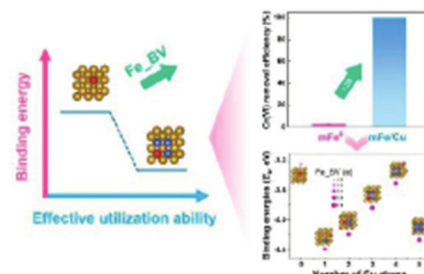
<sup>b</sup>Key Laboratory of General Chemistry of the National Ethnic Affairs Commission, School of Chemistry and Environment, Southwest Minzu University, Chengdu 610041, China

<sup>c</sup>College of Resource and Environment, Chengdu University of Information Technology, Chengdu 610041, China

<sup>d</sup>College of Architecture and Environment, Sichuan University, Chengdu 610041, China

Cu, on the surface of mFe<sup>0</sup>, can improve the removal efficiency of Cr(VI) by promoting the release of electrons from Fe, attracting Cr to the hollow position nearby itself of Fe surface, and reducing the adsorption energy of Fe to Cr.

Chinese Chemical Letters 34 (2023) 107932



## Photocatalytic thin film composite forward osmosis membrane for mitigating organic fouling in active layer facing draw solution mode

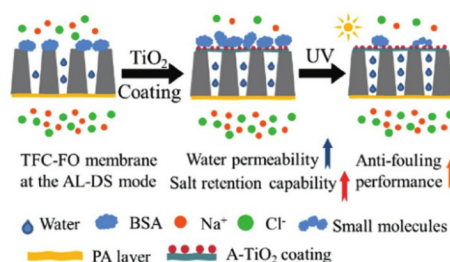
Yang Hu<sup>a</sup>, Pin Zhao<sup>a</sup>, Hao Liu<sup>a</sup>, Xiawen Yi<sup>a</sup>, Weilong Song<sup>a</sup>, Xinhua Wang<sup>a,b</sup>

<sup>a</sup>Jiangsu Key Laboratory of Anaerobic Biotechnology, School of Environmental and Civil Engineering, Jiangnan University, Wuxi 214122, China

<sup>b</sup>Jiangsu Collaborative Innovation Center of Technology and Material of Water Treatment, Suzhou University of Science and Technology, Suzhou 215009, China

The performance of the thin film composite membrane was greatly improved via loading TiO<sub>2</sub> in AL-DS mode, and the modified membrane showed an enhanced anti-fouling capacity under UV.

Chinese Chemical Letters 34 (2023) 107931



## Enhanced water-induced effects enabled by alkali-stabilized Pd-OH<sub>x</sub> species for oxidation of benzyl alcohol

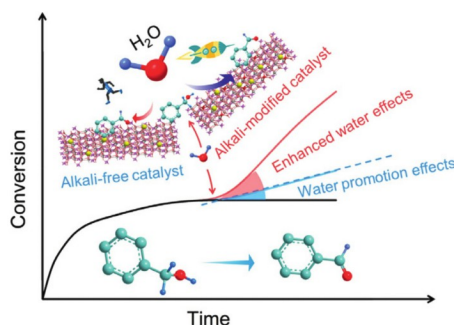
Qianbing Wei<sup>a</sup>, Chang Yu<sup>a</sup>, Yongwen Ren<sup>a</sup>, Lin Ni<sup>a</sup>, Dongming Liu<sup>a</sup>, Lin Chen<sup>a</sup>, Hongling Huang<sup>a</sup>, Yingnan Han<sup>a</sup>, Juntong Dong<sup>a</sup>, Jieshan Qiu<sup>a,b</sup>

<sup>a</sup>State Key Lab of Fine Chemicals, School of Chemical Engineering, Liaoning Key Lab for Energy Materials and Chemical Engineering, Dalian University of Technology, Dalian 116024, China

<sup>b</sup>College of Chemical Engineering, Beijing University of Chemical Technology, Beijing 100029, China

The amplified water-induced effects were discovered over the alkali cations-modified catalysts with high active Pd-OH<sub>x</sub> for oxidation of benzyl alcohol. This unprecedented finding can provide an avenue to promote and enhance the chemical reactions involved in water-promoted effects.

Chinese Chemical Letters 34 (2023) 107939



## Mass spectrometry profiling of single bacterial cells reveals metabolic regulation during antibiotics induced bacterial filamentation

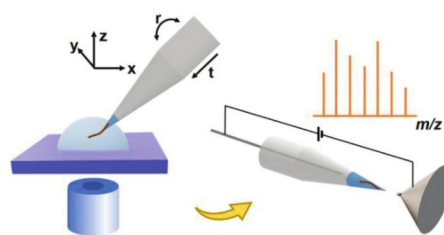
Dongxue Zhang<sup>a</sup>, Qin Qin<sup>b</sup>, Liang Qiao<sup>a</sup>

<sup>a</sup>Department of Chemistry, Institutes of Biomedical Sciences, and Shanghai Stomatological Hospital, Fudan University, Shanghai 200000, China

<sup>b</sup>Changhai Hospital, The Naval Military Medical University, Shanghai 200433, China

Single bacterial cell metabolic profiling by mass spectrometry was developed, and used to characterize the metabolic regulation during bacterial filamentation induced by antibiotics to study bacterial antimicrobial resistance mechanism at single-cell level.

Chinese Chemical Letters 34 (2023) 107938



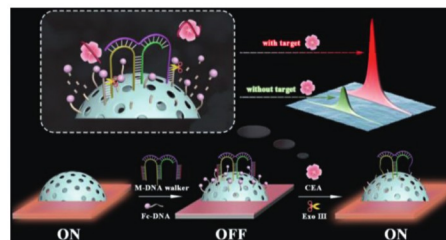
## Advanced Pt hollow nanospheres/rubrene nanoleaves coupled with M-shaped DNA walker for ultrasensitive electrochemiluminescence bioassay

Yumeng Song, Xiuli Tao, Wenbin Liang, Xia Zhong, Ruo Yuan, Ying Zhuo

Key Laboratory of Luminescence Analysis and Molecular Sensing, Ministry of Education, College of Chemistry and Chemical Engineering, Southwest University, Chongqing 400715, China

An ultrasensitive ECL aptasensor with Rub NLS/DO/Pt HNSs as ECL ternary system was successfully developed for the assay of CEA by coupling with M-DNA walker as signal switch.

Chinese Chemical Letters 34 (2023) 107957



## Synchronous activation of Ag nanoparticles and BiOBr for boosting solar-driven CO<sub>2</sub> reduction

Gaopeng Liu<sup>b</sup>, Lin Wang<sup>b</sup>, Bin Wang<sup>b</sup>, Xingwang Zhu<sup>b</sup>, Jinman Yang<sup>b</sup>, Pengjun Liu<sup>a</sup>, Wenshuai Zhu<sup>b</sup>, Ziran Chen<sup>c</sup>, Jiexiang Xia<sup>b</sup>

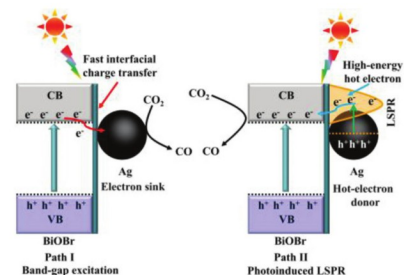
<sup>a</sup>Key Laboratory of Medicinal and Edible Plants Resources of Hainan Province, Hainan vocational university of Science and Technology, Haikou 571126, China

<sup>b</sup>School of Chemistry and Chemical Engineering, Institute for Energy Research, Jiangsu University, Zhenjiang 212013, China

<sup>c</sup>Department of Architecture and Environment Engineering, Sichuan Vocational and Technical College, Suining 629000, China

Ag/BiOBr heterostructure displays the excellent visible light absorption, ultra-fast charge transfer and enhanced inert C=O double bond activation, thus boosting CO<sub>2</sub> photoreduction to CO.

Chinese Chemical Letters 34 (2023) 107962



## Effects of trifluoromethanesulfonic acid ligand on the Zinc-based catalysts for the acetylene hydration

Zhen Chen<sup>a</sup>, Fei Zhao<sup>b,c</sup>, Houyu Zhang<sup>b</sup>, Qinqin Wang<sup>a</sup>, Bin Dai<sup>a</sup>

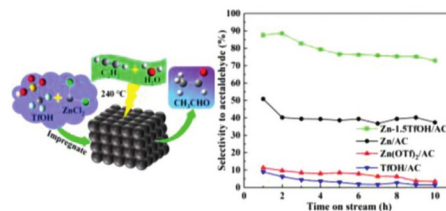
<sup>a</sup>School of Chemistry and Chemical Engineering, Shihezi University/State Key Laboratory Incubation Base for Green Processing of Chemical Engineering, Shihezi 832000, China

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

<sup>c</sup>School of Chemistry and Chemical Engineering, Taishan University, Tai'an 271000, China

The Zn-1.5TfOH/AC catalyst with a Zn-O4 coordination structure effectively inhibited carbon accumulation and zinc loss, improved acidic sites and the dispersion of active metal. DFT calculations showed that OH<sup>-</sup> in TfO-ZnOH participated in the reaction and regenerated by dissociation of H<sub>2</sub>O.

Chinese Chemical Letters 34 (2023) 107963



## Boosted photocatalytic efficiency of GQDs sensitized (BiO)<sub>2</sub>CO<sub>3</sub>/β-Bi<sub>2</sub>O<sub>3</sub> heterojunction via enhanced interfacial charge transfer

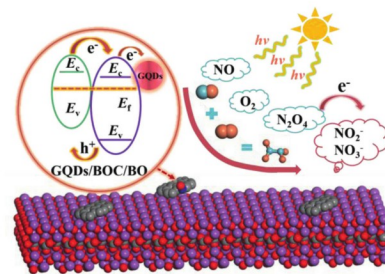
Yanxia Wang<sup>a</sup>, Jianping Sheng<sup>a</sup>, Xiaoli Zhao<sup>a</sup>, Ye He<sup>a</sup>, Fan Dong<sup>b</sup>, Yanjuan Sun<sup>a</sup>

<sup>a</sup>School of Resources and Environment, University of Electronic Science and Technology of China, Chengdu 611731, China

<sup>b</sup>Institute of Fundamental and Frontier Sciences, University of Electronic Science and Technology of China, Chengdu 611731, China

Heterojunction structures that can effectively degrade toxic by-products were fabricated, which were able to enhance interfacial charge transport under illumination.

Chinese Chemical Letters 34 (2023) 107967





## Dual-active-site Fe/Cu single-atom nanozymes with multifunctional specific peroxidase-like properties for S<sup>2-</sup>-detection and dye degradation

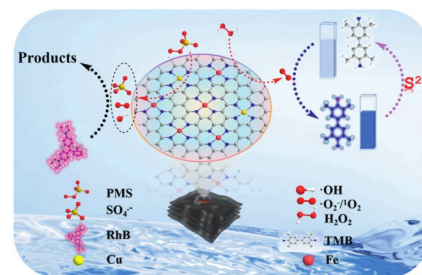
Xiaofang Chen<sup>a</sup>, Ya Wang<sup>a</sup>, Min Feng<sup>a</sup>, Die Deng<sup>a</sup>, Xiaoyi Xie<sup>a</sup>, Caixia Deng<sup>b</sup>, Kashif Nawaz Khattak<sup>a</sup>, Xiupei Yang<sup>a</sup>

<sup>a</sup> College of Chemistry and Chemical Engineering, Chemical Synthesis and Pollution Control Key Laboratory of Sichuan Province, China West Normal University, Nanchong 637000, China

<sup>b</sup> College of Environmental Science and Engineering, China West Normal University, Nanchong 637000, China

Fe/Cu-NC bimetallic active site SAzymes were successfully prepared with good selectivity and peroxidase activity, which can be well applied to S<sup>2-</sup>-detection and organic dye degradation.

Chinese Chemical Letters 34 (2023) 107969



## Metal-organic framework nanofilm enhances serum metabolic profiles for diagnosis and subtype of cardiovascular disease

Dan Ouyang<sup>a</sup>, Zhihua Fu<sup>b</sup>, Guorong Li<sup>a</sup>, Chao Zhong<sup>a</sup>, Jiahao Yuan<sup>a</sup>, Huan Huang<sup>a</sup>, Juan Lin<sup>c</sup>, Gang Xu<sup>b</sup>, Zian Lin<sup>a</sup>

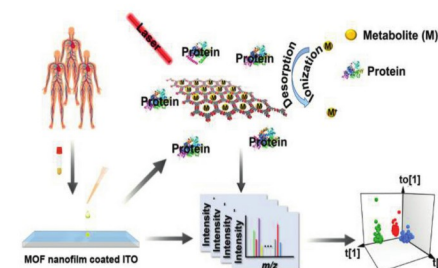
<sup>a</sup> Ministry of Education Key Laboratory of Analytical Science for Food Safety and Biology, Fujian Provincial Key Laboratory of Analysis and Detection Technology for Food Safety, College of Chemistry, Fuzhou University, Fuzhou 350108, China

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

<sup>c</sup> Department of Cardiology, Fujian Provincial Governmental Hospital, Fuzhou 350003, China

A highly oriented MOF nanofilm with uniform surface was served as a substrate for LDI-MS, which exhibits low background interference, enhanced sensitivity, excellent reproducibility and size-exclusion effect. Using the MOF nanofilm-based LDI-MS, a precise diagnostic platform for cardiovascular diseases was successfully constructed by combining with multivariate statistical analyses.

Chinese Chemical Letters 34 (2023) 107992



## Rare-earth ions coordination enhanced ratiometric fluorescent sensing platform for quantitative visual analysis of antibiotic residues in real samples

Shihao Xu<sup>a,b</sup>, Lingfei Li<sup>a,c</sup>, Dan Lin<sup>a,b</sup>, Liang Yang<sup>a,b</sup>, Zhenyang Wang<sup>a,b</sup>, Changlong Jiang<sup>a,b</sup>

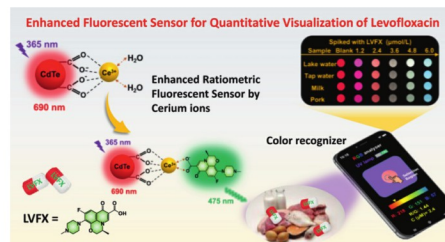
<sup>a</sup> Institute of Solid State Physics, Hefei Institutes of Physical Science, Chinese Academy of Sciences, Hefei 230031, China

<sup>b</sup> Key Laboratory of Photovoltaic and Energy Conservation Materials, Hefei Institutes of Physical Science, Chinese Academy of Sciences, Hefei 230031, China

<sup>c</sup> School of Chemistry and Chemical Engineering, Hefei University of Technology, Hefei 230009, China

Portable smartphone platform integrated with cerium-induced ratiometric fluorescent nanoprobe for quantitative visualization of levofloxacin is achieved.

Chinese Chemical Letters 34 (2023) 107997



## Green process of biomass waste derived fluorescent carbon quantum dots for biological imaging *in vitro* and *in vivo*

Haitao Ren<sup>a</sup>, Yue Yuan<sup>b</sup>, Abdelkader Labidi<sup>a</sup>, Qibing Dong<sup>a</sup>, Ke Zhang<sup>a</sup>, Eric Lichtfouse<sup>c</sup>, Ahmed A. Allam<sup>d</sup>, Jamaan S. Ajarem<sup>e</sup>, Chuanyi Wang<sup>a</sup>

<sup>a</sup> School of Environmental Science and Engineering, Shaanxi University of Science and Technology, Xi'an 710021, China

<sup>b</sup> School of Basic Medical Sciences, Center for Tissue Engineering and Stem Cell Research, Guizhou Province Key Laboratory of Regenerative Medicine, Guizhou Medical University, Guiyang 550004, China

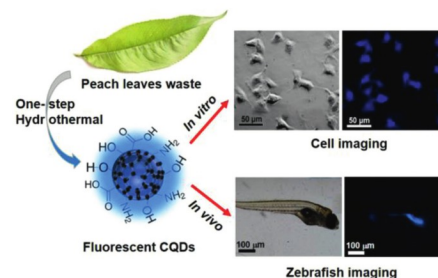
<sup>c</sup> Aix-Marseille Univ, CNRS, IRD, INRAE, CEREGE, Aix en Provence 13100, France

<sup>d</sup> Zoology Department, Faculty of Science, Beni-Suef University, Beni Suef 65211, Egypt

<sup>e</sup> Zoology Department, College of Science, King Saud University, Riyadh 11451, Saudi Arabia

Green extraction of value-added carbon quantum dots from peach leaves waste with ultra-low toxicity and excellent photoluminescence properties: A potential candidate for biological imaging *in vitro* and *in vivo*.

Chinese Chemical Letters 34 (2023) 107998



## Boosting charge separation of BiVO<sub>4</sub> photoanode modified with 2D metal-organic frameworks nanosheets for high-performance photoelectrochemical water splitting

Lina Wang<sup>a</sup>, Zejun Liu<sup>a</sup>, Jinming Zhang<sup>a</sup>, Yuefa Jia<sup>a</sup>, Jingwei Huang<sup>b</sup>, Qiong Mei<sup>a,c</sup>, Qizhao Wang<sup>a,b</sup>

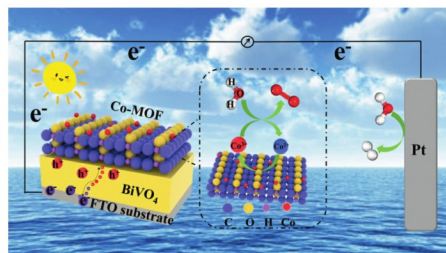
<sup>a</sup>School of Water and Environment, Key Laboratory of Subsurface Hydrology and Ecological Effects in Arid Region of Ministry of Education, Chang'an University, Xi'an 710054, China

<sup>b</sup>College of Chemistry and Chemical Engineering, Northwest Normal University, Lanzhou 730070, China

<sup>c</sup>School of Land Engineering, Chang'an University, Xi'an 710054, China

The synthesized Co-MOF/BiVO<sub>4</sub> electrode exhibited a 4-fold higher photocurrent than bare BiVO<sub>4</sub>, measuring 6.0 mA/cm<sup>2</sup> at 1.23 V vs. RHE. This work provides an idea for depositing inexpensive 2D Co-MOF nanosheets on the photoanode as an excellent passivation layer for solar fuel production.

Chinese Chemical Letters 34 (2023) 108007



## Surface-enhanced Raman scattering technology based on TiO<sub>2</sub>/Nb<sub>2</sub>C coated microfluidic chip for monitoring glioma cells invasion in real time

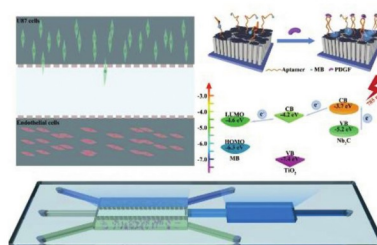
Jie Zhao<sup>a</sup>, Xiaoyan Liu<sup>a</sup>, Yan Zhou<sup>b</sup>, Tingting Zheng<sup>a</sup>, Yang Tian<sup>a,b</sup>

<sup>a</sup>Shanghai Key Laboratory of Green Chemistry and Chemical Processes, Department of Chemistry, School of Chemistry and Molecular Engineering, East China Normal University, Shanghai 200241, China

<sup>b</sup>State Key Laboratory of Precision Spectroscopy, East China Normal University, Shanghai 200241, China

In this paper, a microfluidic invasion model with a surface-enhanced Raman scattering sensor was fabricated for real-time monitoring of the glioma cell invasion process.

Chinese Chemical Letters 34 (2023) 107895



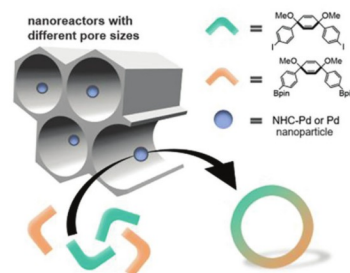
## Synthesis of cycloparaphenylene under spatial nanoconfinement

Jinjie Li, Huixian Jin, Zhikun Shang, Jie Wang, Donglai Tian, Yun Ding, Aiguo Hu

Shanghai Key Laboratory of Advanced Polymeric Materials, School of Materials Science and Engineering, East China University of Science and Technology, Shanghai 200237, China

Selective formation of [12]cycloparaphenylene precursor with separate yield up to 25% was achieved in one-pot reaction by Suzuki coupling reaction between symmetrical monomers under spatial nanoconfinement.

Chinese Chemical Letters 34 (2023) 107912



## Ni-catalyzed regiodivergent hydrophosphorylation of enynes

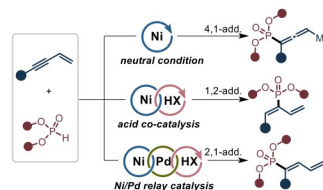
Sa-Na Yang<sup>a,b</sup>, Shao-Han Sun<sup>a,b</sup>, Chang-Hui Liu<sup>a,b</sup>, Xiang-Ting Min<sup>a</sup>, Boshun Wan<sup>a,b</sup>, Ding-Wei Ji<sup>a</sup>, Qing-An Chen<sup>a,b</sup>

<sup>a</sup>Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian 116023, China

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

The Ni-catalyzed regiodivergent hydrophosphorylation of 1,3-enynes with phosphites has been developed through the regulation of common elementary reaction steps.

Chinese Chemical Letters 34 (2023) 107914





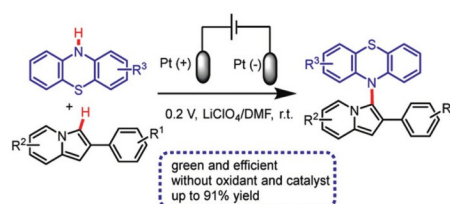
## Electrochemical C–H/N–H cross-coupling of 2-phenylindolizines with phenothiazines to synthesize novel N-aryl phenothiazine derivatives

Chenglong Feng, Xin Liu, Yuanbin She, Zhenlu Shen, Meichao Li

College of Chemical Engineering, Zhejiang University of Technology, Hangzhou 310032, China

A facile and efficient direct electrochemical oxidation method for C–H/N–H cross-coupling of 2-phenylindolizines with phenothiazines to synthesize novel N-aryl phenothiazine derivatives has been developed. Under the optimized conditions, a broad range of substrates were well tolerated, affording the desired products in moderate to excellent isolated yields (up to 91%) with high regioselectivity.

Chinese Chemical Letters 34 (2023) 107935



## High-efficiency circularly polarized emission from liquid-crystalline platinum complexes

Peng Fan<sup>a</sup>, Zhou Fang<sup>a</sup>, Shengyue Wang<sup>a</sup>, Qiwei Dong<sup>a</sup>, Chen Xiao<sup>a</sup>, Alice J. McEllin<sup>b</sup>, Duncan W. Bruce<sup>b</sup>, Weiguo Zhu<sup>a</sup>, Yafei Wang<sup>a,c</sup>

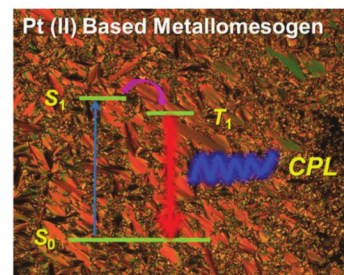
<sup>a</sup>Jiangsu Key Laboratory of Environmentally Friendly Polymeric Materials, Jiangsu Collaborative Innovation Center of Photovoltaic Science and Engineering, Jiangsu Engineering Laboratory of Light-Electricity-Heat Energy-Converting Materials and Applications, School of Materials Science & Engineering, Changzhou University, Changzhou 213164, China

<sup>b</sup>Department of Chemistry, University of York, York YO10 5DD, United Kingdom

<sup>c</sup>Anhui Sholon New Material Technology Co., Ltd., Chuzhou 239500, China

Two chiral phosphorescent liquid crystal based on cyclometalated platinum complexes are prepared, in which the chiral S-2-methyl-1-butyl group is introduced into the cyclometalating ligand and the mesogenic fragment is attached to the periphery of the ancillary ligand. High photoluminescent quantum efficiency of over 78% and clear CPL signal with  $g_{PL}$  of about  $10^{-2}$  are observed for the complexes. Remarkably, solution-processed CP-OLEDs show maximum external quantum efficiencies (EQE) of over 15% and strong CP-EL signals with a  $g_{EL} \approx 10^{-2}$ .

Chinese Chemical Letters 34 (2023) 107934



## Stereoselective electrochemical carboxylation of $\alpha,\beta$ -unsaturated sulfones

Zi-Xin Yang<sup>a</sup>, Liangchuan Lai<sup>a</sup>, Jingze Chen<sup>a</sup>, Hong Yan<sup>a</sup>, Ke-Yin Ye<sup>a</sup>, Fen-Er Chen<sup>a,b,c</sup>

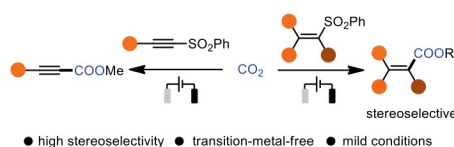
<sup>a</sup>Institute of Pharmaceutical Science and Technology, College of Chemistry, Fuzhou University, Fuzhou 350108, China

<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 Research Center of Industrial Asymmetric Catalysis of Chiral Drugs, Fudan University, Shanghai 200433, China

As an attractive C1 synthon, carbon dioxide ( $CO_2$ ) has been extensively used in organic synthesis to produce carboxylic acids. In this research, stereoselective electrochemical carboxylation of  $\alpha,\beta$ -unsaturated sulfones has been developed under transition-metal-free conditions. All the cinnamic acids and the derivatives are obtained selectively in the E-configuration. Besides, arylpropiolates also can be produced from alkynyl sulfones.

Chinese Chemical Letters 34 (2023) 107956



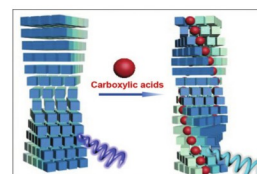
## Chiroptical coassemblies between organic carboxylic acids and amino acid derivatives with $C_3$ -symmetry

Yiran Xia, Aiyao Hao, Pengyao Xing

School of Chemistry and Chemical Engineering, Shandong University, Ji'nan 250100, China

Organic acids enhance the chiral assembly that shows tunable circularly polarized luminescence with high dissymmetry g-factors at  $10^{-2}$  grade.

Chinese Chemical Letters 34 (2023) 107955



## One-pot synthesis of $\text{Fe}_x\text{O}_y$ nanoparticles embedded within N-doped carbon layers as highly efficient and selective catalysts for the hydrogenation of nitroarenes

Xiuzheng Zhuang<sup>a</sup>, Ke Jin<sup>b</sup>, Qi Zhang<sup>a</sup>, Jianguo Liu<sup>a</sup>, Xinghua Zhang<sup>a</sup>, Hao Zhan<sup>c</sup>, Longlong Ma<sup>a</sup>

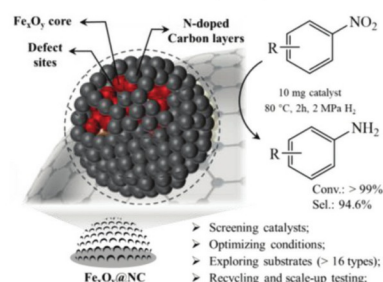
<sup>a</sup>Key Laboratory of Energy Thermal Conversion and Control of Ministry of Education, School of Energy and Environment, Southeast University, Nanjing 210096, China

<sup>b</sup>Key Laboratory of Renewable Energy, Guangzhou Institute of Energy Conversion, Chinese Academy of Sciences, Guangzhou 510640, China

<sup>c</sup>School of Energy Science and Engineering, Central South University, Changsha 410083, China

An effective catalyst of  $\text{Fe}_x\text{O}_y/\text{NC}$ -0.2g was obtained for the selective hydrogenation of nitroarenes, which can tolerate a wide scope of substrates under mild conditions.

Chinese Chemical Letters 34 (2023) 107954



## Pyrene-tethered bismoviologens for visible light-induced $\text{C}(\text{sp}^3)\text{-P}$ and $\text{C}(\text{sp}^2)\text{-P}$ bonds formation

Wenqiang Ma<sup>a</sup>, Sikun Zhang<sup>a</sup>, Liang Xu<sup>a</sup>, Bingjie Zhang<sup>a</sup>, Guoping Li<sup>a</sup>, Bin Rao<sup>b</sup>, Mingming Zhang<sup>c</sup>, Gang He<sup>a</sup>

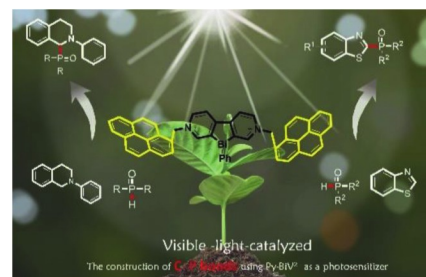
<sup>a</sup>Key Laboratory of Thermo-Fluid Science and Engineering of Ministry of Education, School of Energy and Power Engineering, Frontier Institute of Science and Technology, Xi'an Jiaotong University, Xi'an 710054, China

<sup>b</sup>School of Chemistry, Xi'an Key Laboratory of Sustainable Energy Materials Chemistry, Xi'an Jiaotong University, Xi'an 710049, China

<sup>c</sup>School of Materials Science and Engineering, Xi'an Jiaotong University, Xi'an 710049, China

Two pyrene-tethered bismoviologen derivatives ( $\text{Py-Biv}^{2+}$ ) were synthesized, which exhibited strong light absorption, resulting in improved light utilization efficiency and accelerated photoinduced electron transfer.  $\text{Py-Biv}^{2+}$  were used as photosensitizers and realized visible-light-induced the construction of  $\text{C}(\text{sp}^3)\text{-P}$  and  $\text{C}(\text{sp}^2)\text{-P}$  bonds with high catalytic performance and good substrate expansibility.

Chinese Chemical Letters 34 (2023) 107958



## Diffuorocarbene-derived rapid late-stage trifluoromethylation of 5-iodotriazoles for the synthesis of $^{18}\text{F}$ -labeled radiotracers

Fang Yuan<sup>a</sup>, Hongbao Sun<sup>a</sup>, Cheng Yang<sup>a</sup>, Haojie Yang<sup>a</sup>, Lili Pan<sup>b</sup>, Xiaoyang Zhang<sup>a</sup>, Rong Tian<sup>b</sup>, Lingjun Li<sup>c</sup>, Wei Chen<sup>b</sup>, Xiaoli Wu<sup>b</sup>, Haoxing Wu<sup>a</sup>

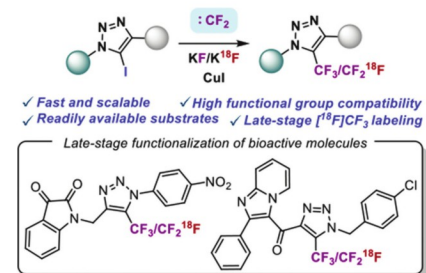
<sup>a</sup>Huaxi MR Research Center, Department of Radiology, Functional and Molecular Imaging Key Laboratory of Sichuan Province, Frontiers Science Center for Disease-Related Molecular Network, West China Hospital, Sichuan University, Chengdu 610041, China

<sup>b</sup>Department of Nuclear Medicine, Laboratory of Clinical Nuclear Medicine, West China Hospital, Sichuan University, Chengdu 610041, China

<sup>c</sup>School of Chemistry and Chemical Engineering, Collaborative Innovation Center of Henan Province for Green Manufacturing of Fine Chemicals, State Key Laboratory of Cell Differentiation Regulation and Target Drug, Henan Normal University, Xinxiang 453007, China

$\text{Cu}(\text{I})$ -promoted difluorocarbene-derived rapid late-stage trifluoromethylation and  $^{18}\text{F}$ trifluoromethylation of iodotriazoles was used to prepare a series of 5- $^{19}\text{F}/^{18}\text{F}$ -trifluoromethyl-1,2,3-triazoles in good yields with high functional group compatibility. The resulting  $^{18}\text{F}$ -trifluoromethylated derivatives of bioactive molecules may be useful as  $^{18}\text{F}$ -labeled radiotracers for PET imaging.

Chinese Chemical Letters 34 (2023) 107960



## Stereoselective synthesis of the 3,6-branched Fuzi $\alpha$ -glucans up to 15-mer via a one-pot and convergent glycosylation strategy

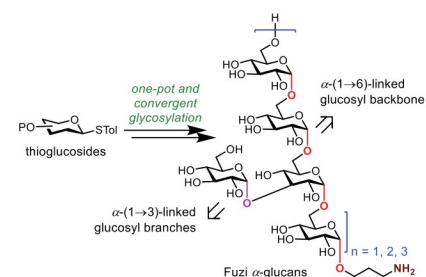
Qingpeng Zhao<sup>a</sup>, Shihao Zhou<sup>a</sup>, Yue Wang<sup>a</sup>, Xiaoyu Yang<sup>a</sup>, Youhui Meng<sup>a</sup>, Yanxin Zhang<sup>b</sup>, Jian Gao<sup>a</sup>

<sup>a</sup>National Glycoengineering Research Center, Shandong Key Laboratory of Carbohydrate Chemistry and Glycobiology, NMPA Key Laboratory for Quality Research and Evaluation of Carbohydrate-based Medicine, Shandong University, Qingdao 266237, China

<sup>b</sup>Department of Pharmaceutical Engineering, College of Chemical Engineering, Northwest University, Xi'an 710069, China

A family of the 3,6-branched Fuzi  $\alpha$ -glucans including the pentasaccharide repeating unit as well as its di- and trimers were efficiently achieved via a one-pot and convergent glycosylation strategy. All the protected  $\alpha$ -glucans up to 15-mer were assembled with high yields and excellent  $\alpha$ -stereoselectivity, which was secured by a generally applicable  $\alpha$ -glucosylation method based on synergistic  $\alpha$ -directing effects.

Chinese Chemical Letters 34 (2023) 107982





## Exploring the influence of crystal packing on the optical-physical property of quercetin-based binary and ternary solid forms

Zhonghua Li<sup>a</sup>, Jianmin Zhou<sup>a</sup>, Xin Zhang<sup>a</sup>, Songgu Wu<sup>a</sup>, Junbo Gong<sup>a,b,c</sup>

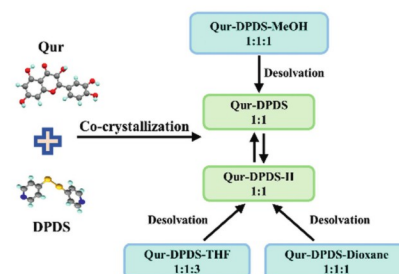
<sup>a</sup>State Key Laboratory of Chemical Engineering, School of Chemical Engineering and Technology, Tianjin University, Tianjin 300072, China

<sup>b</sup>Chemistry and Chemical Engineering Guangdong Laboratory, Shantou 515031, China

<sup>c</sup>Haihe Laboratory of Sustainable Chemical Transformations, Tianjin 300192, China

Three cocrystal solvate and two cocrystals involving quercetin and 4-(4-pyridinyldisulfanyl) pyridine were synthesized. The corresponding luminescent properties were finely regulated based on the change of crystal structures, rationalized with theoretical calculations.

Chinese Chemical Letters 34 (2023) 107983



## Generation of (E)- $\beta$ -trifluoromethyl vinylsulfonohydrazides under photocatalysis and their anti-bacteria activity

Xinhua Wang<sup>a</sup>, Wei Zhou<sup>b</sup>, Wenlin Xie<sup>c</sup>, Qi Chen<sup>a</sup>, Jie Wu<sup>a,c,d</sup>

<sup>a</sup>Taizhou Central Hospital (Taizhou University Hospital) & School of Pharmaceutical and Chemical Engineering, Taizhou University, Taizhou 318000, China

<sup>b</sup>Department of Chemistry, Fudan University, Shanghai 200438, China

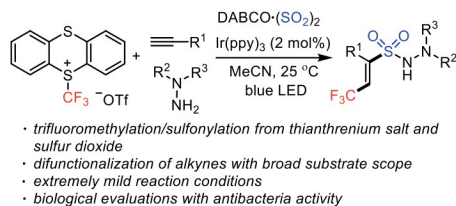
<sup>c</sup>State Key Laboratory of Organometallic Chemistry, Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, Shanghai 200032, China

<sup>d</sup>School of Chemistry and Chemical Engineering, Henan Normal University, Xinxiang 453007, China

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

Trifluoromethylation/sulfonylation of alkynes from trifluoromethyl thianthrenium triflate and sulfur dioxide under extremely mild reaction conditions provides a facile access to trifluoromethyl-substituted vinyl sulfonohydrazides in moderate to good yields. These trifluoromethyl-substituted vinyl sulfonohydrazides are further evaluated for anti-bacteria activity.

Chinese Chemical Letters 34 (2023) 107984



## Recyclable Cu/g-C<sub>3</sub>N<sub>4</sub> nanometric semiconductor catalyzed N-formylation of amines via photocatalytic aerobic oxidative C–C bond cleavage of aldehydes under visible-light irradiation

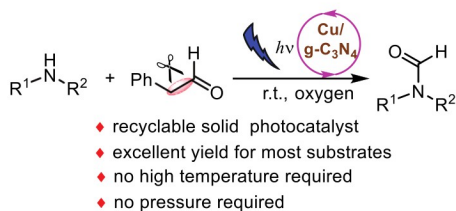
Zeyao Liang<sup>a</sup>, Jiabao Guo<sup>a</sup>, Peng Wang<sup>a</sup>, Li Zhu<sup>b</sup>, Xiaoquan Yao<sup>a</sup>

<sup>a</sup>Department of Applied Chemistry, School of Material Science and Technology, Nanjing University of Aeronautics and Astronautics, Nanjing 210016, China

<sup>b</sup>Department of Chemistry, School of Pharmacy, Nanjing Medical University, Nanjing 211166, China

With Cu/g-C<sub>3</sub>N<sub>4</sub> nanometric semiconductor as a recyclable photocatalyst, an aerobic oxidative C–C bond cleavage of aldehydes under visible light irradiation was developed with the promotion of amines. By using phenylacetaldehyde as a highly efficient formylation reagent, the methodology provides a practical, neutral, and mild alternative to the synthesis of formamides.

Chinese Chemical Letters 34 (2023) 108001



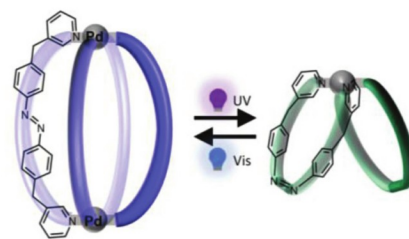
## Light-driven interconversion of Pd<sub>2</sub>L<sub>4</sub> cage and mononuclear PdL<sub>2</sub> mediated by the isomerization of azobenzene ligand

Jinkang Zhu, Xujin Chen, Xin Jin, Qiaochun Wang

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

Light-driven interconversion of Pd<sub>2</sub>L<sub>4</sub> cage and tweezer-like PdL<sub>2</sub> was achieved via the *trans/cis* isomerization of azobenzene-containing ligand.

Chinese Chemical Letters 34 (2023) 108002



## Semi-synthesis of biotin-bearing activity-based ubiquitin probes through sequential enzymatic ligation, N-S acyl transfer and aminolysis reaction

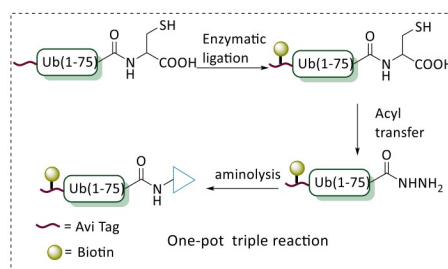
Yu Wang<sup>a</sup>, Qiong Xia<sup>b</sup>, Xiao Hua<sup>a</sup>, Yanyan Guo<sup>a</sup>, Jing Shi<sup>a</sup>, Yi-Ming Li<sup>b</sup>

<sup>a</sup>Department of Chemistry, University of Science and Technology of China, Hefei 230026, China

<sup>b</sup>School of Food and Biological Engineering, Key Laboratory of Metabolism and Regulation for Major Diseases of Anhui Higher Education Institutes, Hefei University of Technology, Hefei 230009, China

We report a practical strategy for the semi-synthesis of biotin-bearing activity-based Ub probes through sequential bioorthogonal reactions.

Chinese Chemical Letters 34 (2023) 108010



## Development of sterically hindered SPOs and enantioselective Ni–Al bimetallic catalyzed C–H cyclization of 4-oxoquinazolines with tethered alkenes

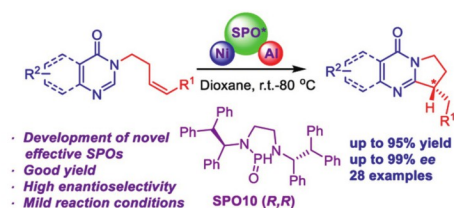
Yaqi Zhang<sup>a</sup>, Qiang Ni<sup>a</sup>, Bendu Pan<sup>a</sup>, Long Jiang<sup>b</sup>, Liqin Qiu<sup>a</sup>

<sup>a</sup>School of Chemistry, Guangdong Key Lab of Chiral Molecules and Drug Discovery, Sun Yat-sen University, Guangzhou 510006, China

<sup>b</sup>Instrumental Analysis and Research Centre, Sun Yat-sen University, Guangzhou 510275, China

A highly efficient Ni–Al bimetallic catalytic system for the preparation of a series of functionalized chiral tricyclic pyrroloquinazolinones has been successfully developed. Some new SPOs with large steric hindrance were successfully synthesized and 4-oxoquinazolines with tethered alkenes can be efficiently converted into products at room temperature with up to 95% yield, 99% ee.

Chinese Chemical Letters 34 (2023) 108017



## Rh(III)-Catalyzed annulative aldehydic C–H functionalization for accessing ring-fluorinated benzo[b]azepin-5-ones

Qiuyun Li<sup>a</sup>, Kelu Yan<sup>b</sup>, Yannan Zhu<sup>a</sup>, Gang Qi<sup>a</sup>, Yining Wang<sup>a</sup>, Wen-Juan Hao<sup>c</sup>, Bo Jiang<sup>c</sup>

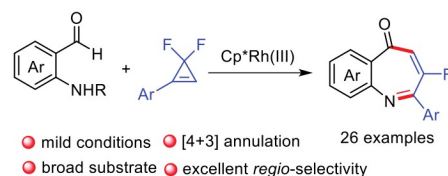
<sup>a</sup>School of Chemistry and Chemical Engineering, Yancheng Institute of Technology, Yancheng 224051, China

<sup>b</sup>Key Laboratory of Life-Organic Analysis of Shandong Province, School of Chemistry and Chemical Engineering, Qufu Normal University, Qufu 273165, China

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

A new Rh(III)-catalyzed aldehydic C–H activation/[4 + 3] annulation cascade of *N*-sulfonyl 2-aminobenzaldehydes with *gem*-difluorocyclopropenes is reported for the first time, and used to produce a range of hitherto unreported precedent  $\beta$  monofluorinated benzo[b]azepin-5-ones with good yields and complete regioselectivity.

Chinese Chemical Letters 34 (2023) 108014



## Cell membrane-coated mesoporous silica nanorods overcome sequential drug delivery barriers against colorectal cancer

Jie Wang<sup>a,b,c</sup>, Hao Pan<sup>d</sup>, Jingyi Li<sup>a</sup>, Di Nie<sup>a,e</sup>, Yan Zhuo<sup>a</sup>, Yishan Lv<sup>a,b</sup>, Ning Wang<sup>a,e</sup>, Hao Chen<sup>e,f</sup>, Shiyan Guo<sup>a,e</sup>, Yong Gan<sup>a,e</sup>, Xinggong Yang<sup>b</sup>, Miaorong Yu<sup>a,e</sup>

<sup>a</sup>State Key Laboratory of Drug Research, Shanghai Institute of Materia Medica, Chinese Academy of Sciences, Shanghai 201203, China

<sup>b</sup>School of Pharmacy, Shenyang Pharmaceutical University, Shenyang 110016, China

<sup>c</sup>School of Pharmacy, Shanghai University of Traditional Chinese Medicine, Shanghai 201203, China

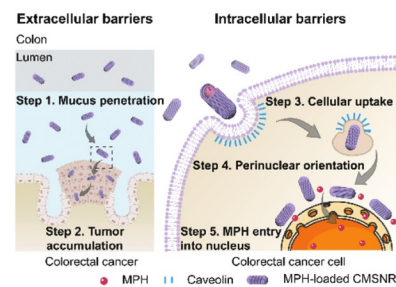
<sup>d</sup>College of Pharmacy, Liaoning University, Shenyang 110036, China

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

<sup>f</sup>Molecular Imaging Center, Shanghai Institute of Materia Medica, Chinese Academy of Sciences, Shanghai 201203, China

The locally delivered cell membrane-coated mesoporous silica nanorods (CMSNR) address the sequential biological barriers by accomplishing facilitated mucus diffusion, tumor accumulation, cellular uptake, intracellular trafficking, and drug release into the nucleus, leading to improved nuclear localization of loaded mefuparib hydrochloride (MPH) correlated with enhanced chemotherapy against colorectal cancer.

Chinese Chemical Letters 34 (2023) 107828





## Construction of AIEgen functionalized nanomicelles and their stability study through 'seesaw-like' fluorescence changes

Xiaotong Wang<sup>a</sup>, Shizhu Chen<sup>a</sup>, Yaru Jia<sup>b</sup>, Kaihan Zhang<sup>c</sup>, Lili Ma<sup>a</sup>, Luwei Li<sup>a</sup>, Xingjie Liang<sup>b</sup>, Jinchao Zhang<sup>a</sup>

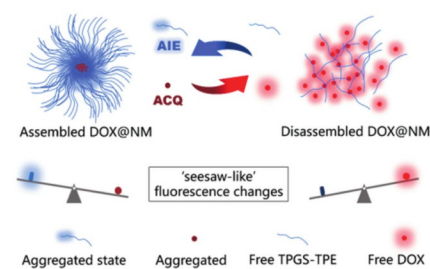
<sup>a</sup> College of Chemistry and Environmental Science, Chemical Biology Key Laboratory of Hebei Province, Key Laboratory of Medicinal Chemistry and Molecular Diagnosis of the Ministry of Education, Hebei University, Baoding 071002, China

<sup>b</sup> CAS Key Laboratory for Biomedical Effects of Nanomaterials and Nanosafety, CAS Center for Excellence in Nanoscience, National Center for Nanoscience and Technology of China, Beijing 100190, China

<sup>c</sup> Department of Chemistry, The University of Manchester, Manchester M13 9PL, United Kingdom

To explore the nanomicelles stability, we design and synthesize self-indicating drug loaded nanomicelles DOX@NM. DOX and nanomicelles components TPGS-TPE show 'seesaw-like' changes in fluorescence intensity. The stability of DOX@NM can be judged from the structure self-indication of DOX@NM.

Chinese Chemical Letters 34 (2023) 107866



## Highly efficient and non-doped red conjugated polymer dot for photostable cell imaging

Mengqi Wu<sup>a</sup>, Qidong Wei<sup>a</sup>, Caihong Xian<sup>a</sup>, Chunlei Dai<sup>a</sup>, Xuehan He<sup>b</sup>, Changfeng Wu<sup>c</sup>, Guoming Sun<sup>d</sup>, Lei Chen<sup>a</sup>

<sup>a</sup> School of Biomedical Engineering, Sun Yat-sen University, Shenzhen 518107, China

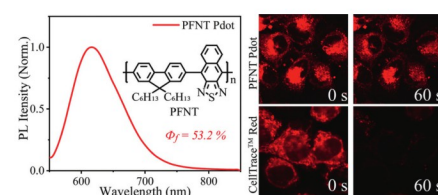
<sup>b</sup> Teaching and Experiment Centre, Sun Yat-sen University, Shenzhen 518107, China

<sup>c</sup> Department of Biomedical Engineering, Southern University of Science and Technology, Shenzhen 518055, China

<sup>d</sup> College of Chemistry and Environmental Science, Hebei University, Affiliated Hospital of Hebei University, Baoding 071002, China

A non-doped and red emissive conjugated polymer dot (PFNT Pdot) was readily obtained with a fluorescence quantum yield up to 53.2%. Highly photostable living cell fluorescent imaging was successfully demonstrated using this red Pdot.

Chinese Chemical Letters 34 (2023) 107867



## Synthesis, insecticidal activity and stability study of novel nitromethylene neonicotinoids with five-membered aromatic heterocycles

Li Han<sup>a</sup>, Zihao Yuan<sup>a</sup>, Xusheng Shao<sup>a</sup>, Xiaoyong Xu<sup>a</sup>, Zhong Li<sup>a,b</sup>

<sup>a</sup> Shanghai Key Laboratory of Chemical Biology, School of Pharmacy, East China University of Science and Technology, Shanghai 200237, China

<sup>b</sup> Shanghai Collaborative Innovation Center for Biomufacturing Technology, Shanghai 200237, China

Using sodium borohydride as reducing agent by selective 1,4-reduction, 24 novel neonicotinoid analogues with good bioactivity and enhanced stability were designed and synthesized.

Chinese Chemical Letters 34 (2023) 107868



## All-in-one phototheranostics based on BTP-4F-DMO nanoparticles for NIR-II fluorescence/photoacoustic dual-mode imaging and combinational therapy

Ke Yang<sup>a</sup>, Bowen Yu<sup>b</sup>, Wei Liu<sup>a</sup>, Zequn Zhang<sup>b</sup>, Li Huang<sup>a</sup>, Shaojing Zhao<sup>a</sup>, Benhua Wang<sup>a</sup>, Jianing Yi<sup>c</sup>, Jun Yuan<sup>a</sup>, Yingping Zou<sup>a</sup>, Changwei Lin<sup>b</sup>, Xiangzhi Song<sup>a</sup>, Minhuan Lan<sup>a</sup>

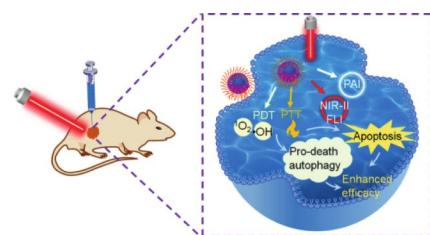
<sup>a</sup> Key Laboratory of Hunan Province for Water Environment and Agriculture Product Safety, College of Chemistry and Chemical Engineering, Central South University, Changsha 410083, China

<sup>b</sup> Department of Gastrointestinal Surgery, The Third Xiangya Hospital of Central South University, Changsha 410013, China

<sup>c</sup> Surgical Department of Breast and Thyroid Gland, Hunan Provincial People's Hospital, The First Affiliated Hospital of Hunan Normal University, Changsha 410083, China

BTP-4F-DMO NPs possess super high photothermal conversion efficacy ( $90.5\% \pm 5\%$ ) and the ability to produce  $\cdot\text{OH}$  and  $\cdot\text{O}_2$ , which greatly enhanced the therapeutic effect and thus induced the pro-death autophagy, both of which make it a promising candidate for its further applications.

Chinese Chemical Letters 34 (2023) 107889



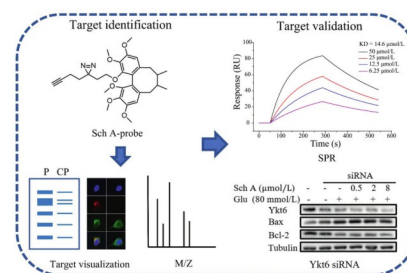
## Chemoproteomics identifies Ykt6 as the direct target of schisandrin A for neuroprotection

Tiantian Wang, Yu Zhou, Hao Zheng, Tao Shen, Dongmei Wang, Jinlan Zhang

State Key Laboratory of Bioactive Substances and Functions of Natural Medicines, Institute of Materia Medica, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing 100050, China

An activity-based protein profiling (ABPP) strategy was employed to identify Ykt6 as the direct target of schisandrin A for neuroprotection in SH-SY5Y cells and schisandrin A played a neuroprotective role by regulating autophagy through interacting with Ykt6. This provides a novel therapeutic option for various neuronal cell damage-mediated diseases.

Chinese Chemical Letters 34 (2023) 107887



## Carbon dots modified nanoflower petals with super enhanced nitrogen electro-reduction efficiency

Yang Zhou<sup>a</sup>, Xuanzhao Lu<sup>b</sup>, Yu-chung Chang<sup>c</sup>, Yanwen Ma<sup>a</sup>, Linlin Wang<sup>b</sup>, Jianrong Zhang<sup>b</sup>, Junjie Zhu<sup>b</sup>

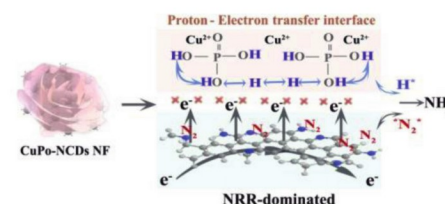
<sup>a</sup>State Key Laboratory for Organic Electronics and Information Displays & Institute of Advanced Materials IAM, Nanjing University of Posts & Telecommunications, Nanjing 210023, China

<sup>b</sup>State Key Laboratory of Analytical Chemistry for Life Science, School of Chemistry and Chemical Engineering, Nanjing University, Nanjing 210023, China

<sup>c</sup>School of Mechanical and Materials Engineering, Washington State University, Pullman, WA 99164, United States

A nitrogen-doped carbon dots modified nano-flower with enhanced interfacial proton-electron transfer was fabricated via an *in situ* assembly method. It could simultaneously boost the Faraday efficiency and reduce the reaction over-potential of NERR, improving the energy efficiency of NERR to a recording-breaking value of 56.5%.

Chinese Chemical Letters 34 (2023) 107888



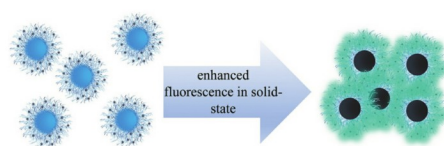
## Highly efficient solid-state luminescence of carbonized polymer dots without matrix

Rui Li, Junjun Liu, Chunlei Xia, Tanglue Feng, Zhicheng Zhu, Bai Yang

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

Strong blue-green fluorescent CPDs with solid photoluminescence quantum yield (PLQY) of 76% were synthesized. The PL mechanism and the enhanced emission in solid-state were investigated and was confirmed as fixation of PL centers.

Chinese Chemical Letters 34 (2023) 107900



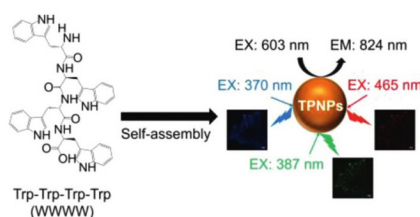
## Tetrapeptide self-assembled multicolor fluorescent nanoparticles for bioimaging applications

Yuerong Wang, Yang Lei, Jiaye Wang, Hui Yang, Leming Sun

School of Life Sciences, Key Laboratory of Space Bioscience & Biotechnology, Northwestern Polytechnical University, Xi'an 710072, China

The Trp-Trp-Trp-Trp (WWWW) self-assembled tetrapeptide nanoparticles (TPNPs) exhibit multicolor imaging capability, excellent biocompatibility and photostability, which make them highly suitable for bioimaging and have potential applications in multiplex bioanalysis and diagnostics.

Chinese Chemical Letters 34 (2023) 107915





## Tunable aggregation-induced fluorescent and pressure-responsive luminescence supramolecular cages achieved by subcomponent self-assembly

Lingling Miao<sup>a</sup>, Xinju Zhu<sup>a</sup>, Guoxing Liu<sup>c</sup>, Xin Han<sup>a</sup>, Wenping Xie<sup>a</sup>, Shuai Lu<sup>d</sup>, Long Zhang<sup>b</sup>, Kai Wang<sup>b</sup>, Linlin Shi<sup>a</sup>, Siyu Lu<sup>a</sup>, Xinqi Hao<sup>a</sup>, Maoping Song<sup>a</sup>

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

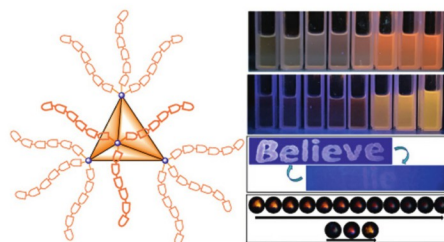
<sup>b</sup> State Key Laboratory of Superhard Materials, College of Physics, Jilin University, Changchun 130012, China

<sup>c</sup> College of Science, Henan Agricultural University, Zhengzhou 450002, China

<sup>d</sup> College of Chemistry and Environmental Engineering, Shenzhen University, Shenzhen 518060, China

Three discrete tetrahedral metallo-supramolecular cages were designed and constructed using truxene-pended base ligands. Two of them were confirmed to exhibit significant aggregation-induced emission (AIE) accompanied by an interesting solvatochromic fluorescent behavior, and the emission behaviors of the cages in the solid state under external hydrostatic pressure were investigated.

Chinese Chemical Letters 34 (2023) 107921



## Identification of highly efficacious PROTACs targeting BRD4 against acute myeloid leukemia: Design, synthesis, and biological evaluations

Aiping Chen<sup>a</sup>, Yue Zhong<sup>b</sup>, Yunxiao Liu<sup>b</sup>, Zhancheng Xie<sup>b</sup>, Hanyu Wu<sup>b</sup>, Wei Shi<sup>b</sup>, Wenlong Huang<sup>b</sup>, Renxiang Tan<sup>a</sup>, Hai Qian<sup>b,c</sup>

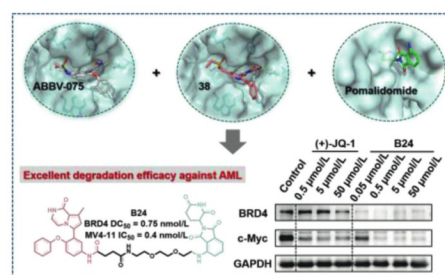
<sup>a</sup> College of Pharmacy, Nanjing University of Chinese Medicine, Nanjing 210023, China

<sup>b</sup> Center of Drug Discovery, State Key Laboratory of Natural Medicines, China Pharmaceutical University, Nanjing 210009, China

<sup>c</sup> Jiangsu Key Laboratory of Drug Discovery for Metabolic Disease, China Pharmaceutical University, Nanjing 210009, China

Emerging protein degraders offered great opportunities to fulfill unmet medical needs of AML from drug discovery point of view, novel PROTACs with diverse linkers were rationally designed to degrade BRD4 by the ubiquitin-proteasome pathway. Detailed SAR analysis resulted in compound **B24** as a superior BRD4 PROTAC that exhibited remarkable BRD4 degradation efficacy and excellent anti-proliferative activities in MV4-11 cells, which was expected to enrich chemical tools in the field of AML therapy.

Chinese Chemical Letters 34 (2023) 107923



## The water-soluble bicyclic 2-pyridone-based fluorescent probe for fast and selective detection of hypochlorite

Qian Zhou<sup>a</sup>, Shanqiang Wang<sup>b</sup>, Xiaoyun Ran<sup>a</sup>, Linzhi Shen<sup>a</sup>, Xiaolin Luo<sup>a</sup>, Gui Wang<sup>b</sup>, Hui Yang<sup>a</sup>, Zhouyu Wang<sup>a</sup>, Xiaoqi Yu<sup>a,b,c</sup>

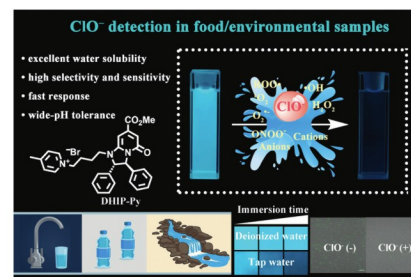
<sup>a</sup> Asymmetric Synthesis and Chiral Technology Key Laboratory of Sichuan Province, Research and Application of Small Organic Chiral Molecules Key Laboratory of Yibin City, Department of Chemistry, Xihua University, Chengdu 610039, China

<sup>b</sup> School of Food and Bioengineering, Xihua University, Chengdu 610039, China

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

A novel bicyclic 2-pyridone-based fluorescent probe was structurally optimized for fast and selective detection of hypochlorite in water samples and *Escherichia coli*.

Chinese Chemical Letters 34 (2023) 107922



## Developing potent BTK<sup>C481S</sup> PROTACs for ibrutinib-resistant malignant lymphoma

Yonghui Sun<sup>a</sup>, Xin Luo<sup>b</sup>, Zimo Yang<sup>a</sup>, Wenxing Lv<sup>a</sup>, Lixia Chen<sup>b</sup>, Hua Li<sup>b,c</sup>, Yu Rao<sup>a</sup>

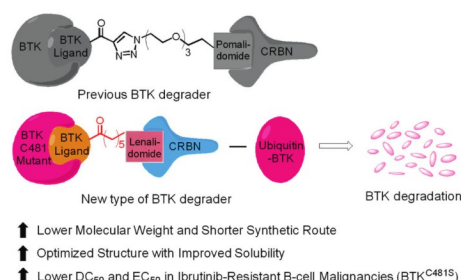
<sup>a</sup> MOE Key Laboratory of Protein Sciences, School of Pharmaceutical Sciences, MOE Key Laboratory of Bioorganic Phosphorus Chemistry & Chemical Biology, Tsinghua University, Beijing, 100084, China

<sup>b</sup> Wuya College of Innovation, Key Laboratory of Structure-Based Drug Design & Discovery, Ministry of Education, Shenyang Pharmaceutical University, Shenyang, 110016, China

<sup>c</sup> Institute of Structural Pharmacology & TCM Chemical Biology, College of Pharmacy, Fujian University of Traditional Chinese Medicine, Fuzhou 350122, China

A new potent BTK<sup>C481S</sup> PROTAC with a much smaller molecular weight, improved solubility and shorter synthetic route was developed for ibrutinib-resistant malignant lymphoma. Notably, the newly developed degrader demonstrates better BTK degrading activity and lower IC<sub>50</sub> value in ibrutinib-resistant cell line.

Chinese Chemical Letters 34 (2023) 107924



## Facile synthesis of ultrabright luminogens with specific lipid droplets targeting feature for *in vivo* two-photon fluorescence retina imaging

Huifang Su<sup>a</sup>, Tao Xie<sup>d</sup>, Yong U. Liu<sup>d</sup>, Yuhua Cui<sup>e</sup>, Wei Wen<sup>a</sup>, Ben Zhong Tang<sup>c</sup>, Wei Qin<sup>b</sup>

<sup>a</sup> Department of Orthopaedic Surgery, The First Affiliated Hospital of Zhengzhou University, Zhengzhou 450052, China

<sup>b</sup> Medical Research Center, Guangdong Provincial People's Hospital, Guangdong Academy of Medical Sciences, Guangzhou 510080, China

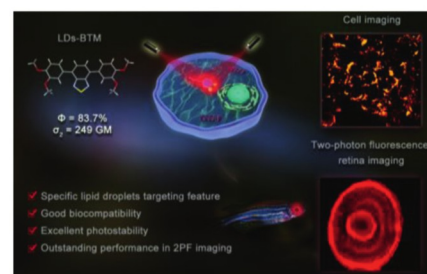
<sup>c</sup> School of Science and Engineering, Shenzhen Institute of Aggregate Science and Technology, The Chinese University of Hong Kong, Shenzhen 518172, China

<sup>d</sup> Laboratory for Neuroscience in Health and Disease, Guangzhou First People's Hospital, School of Medicine, South China University of Technology, Guangzhou 510180, China

<sup>e</sup> School of Materials Science and Engineering, Sun Yat-sen University, Guangzhou 510275, China

The ultrabright organic luminogen (namely LDs-BTM) with specific lipid droplets targeting feature, good biocompatibility, and excellent photostability shows outstanding performance in two-photon fluorescence imaging of the retina *in vivo*.

Chinese Chemical Letters 34 (2023) 107949



## A novel route for the synthesis of androgen receptor antagonist enzalutamide

Xiangguo Meng<sup>a</sup>, Siju Bi<sup>a,c</sup>, Shixin Jin<sup>c</sup>, Kai Wu<sup>a</sup>, Shanchao Wu<sup>b</sup>, Lei Shao<sup>a</sup>, Pierre-Antoine Bonnet<sup>d</sup>, Chunquan Sheng<sup>b</sup>

<sup>a</sup> College of Pharmacy, Shanghai University of Medicine and Health Sciences, Shanghai 201318, China

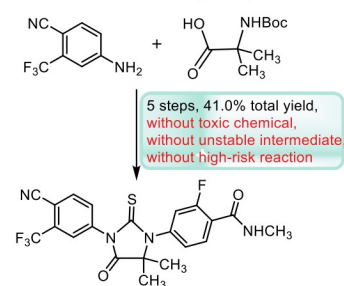
<sup>b</sup> Department of Medicinal Chemistry, School of Pharmacy, Second Military Medical University, Shanghai 200433, China

<sup>c</sup> State Key Lab of Anti-Infectives, Shanghai Institute of Pharmaceutical Industry, China State Institute of Pharmaceutical Industry, Shanghai 201203, China

<sup>d</sup> IBMM, Faculty of Pharmacy, Montpellier University, CNRS, ENSCM, 34093 Montpellier Cedex 5, France

A novel route for synthesis enzalutamide was reported in 41.0% total yield without toxic chemical, unstable intermediate and high-risk reaction. It is a potential efficient and economical procedure for industrialization.

Chinese Chemical Letters 34 (2023) 108096



## Two monofluoride-bridged Dy<sup>III</sup> dimers with different magnetization dynamics

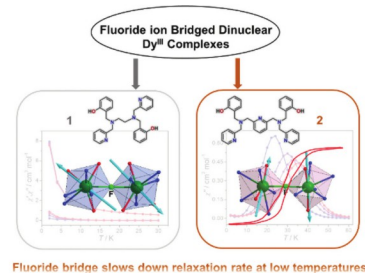
Mengmeng Wang<sup>a</sup>, Xixi Meng<sup>a</sup>, Ning Liu<sup>a</sup>, Yi-Quan Zhang<sup>b</sup>, Na Xu<sup>a</sup>, Wei Shi<sup>a</sup>, Peng Cheng<sup>a</sup>

<sup>a</sup> Department of Chemistry, Key Laboratory of Advanced Energy Materials Chemistry (MOE) and Renewable Energy Conversion and Storage Center (RECAST), College of Chemistry, Nankai University, Tianjin 300071, China

<sup>b</sup> Jiangsu Key Lab for NSLSCS, School of Physical Science and Technology, Nanjing Normal University, Nanjing 210023, China

Two monofluoride-bridged dinuclear Dy<sup>III</sup> complexes were synthesized and show different magnetization dynamics. The fluoride bridge can slow down relaxation rate at low temperatures in **2**.

Chinese Chemical Letters 34 (2023) 107995



## A cobalt redox switch driving alcohol dehydrogenation by redox coupled molecular swing

Guoling Li<sup>a,b</sup>, Yang Liu<sup>a,b</sup>, Wei Wang<sup>a,b</sup>, Zhu Zhuo<sup>a,b</sup>, Yougui Huang<sup>a,b,c</sup>

<sup>a</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, Xiamen 361021, China

<sup>b</sup> Xiamen Institute of Rare Earth Materials, Haixi Institute, Chinese Academy of Sciences, Xiamen 361021, China

<sup>c</sup> Fujian Science & Technology Innovation Laboratory for Optoelectronic Information of China, Fuzhou 350108, China

A redox pair of cobalt species (Co<sup>III</sup>/Co<sup>II</sup>) switches through photo-dehydrogenation of alcohol and hydrogenation of azo-ligand.

Chinese Chemical Letters 34 (2023) 107630





## A Cu-based metal-organic framework with two types of connecting nodes as catalyst for oxygen activation

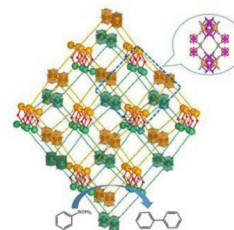
Zhen Wang<sup>a,b</sup>, Jun-Yu Li<sup>a,b</sup>, Tao Huang<sup>a</sup>, Huai-Ming Li<sup>a</sup>, Teng Zhang<sup>a,b</sup>

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

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

FCN-6, a metal-organic framework containing both  $\text{Cu}_2(\text{O}_2\text{CR})_4$  and  $\text{Cu}_3(\text{OH})(\text{pyz})_3(\text{O}_2\text{CR})$  secondary building units, showed good catalytic activity for oxygen activation and aerobic oxidative coupling of organic boronic acids.

Chinese Chemical Letters 34 (2023) 107635



## Acceptor modulation for improving thermally activated delayed fluorescence emitter in through-space charge transfer on spiro skeletons

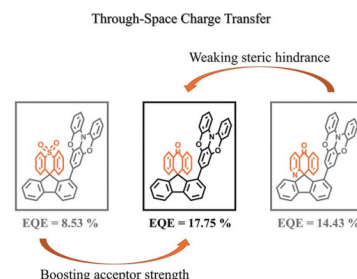
Jingfeng Liu<sup>a</sup>, Ziqi Feng<sup>a</sup>, Chenchen Peng<sup>a</sup>, Youjun Yu<sup>a</sup>, Shengyi Yang<sup>a</sup>, Zuoquan Jiang<sup>a</sup>, Liangsheng Liao<sup>a,b</sup>

<sup>a</sup>Institute of Functional Nano & Soft Materials (FUNSOM), Jiangsu Key Laboratory for Carbon-Based Functional Materials & Devices, Soochow University, Suzhou 215123, China

<sup>b</sup>Macao Institute of Materials Science and Engineering, Macau University of Science and Technology, Taipa 999078, Macau SAR, China

Acceptor modulation strategy at the C9 position of fluorene unit indicates that balancing the electron-withdrawing strength and steric hindrance of the acceptor is pivotal for adjusting the thermally activated delayed fluorescence properties and electroluminescence efficiency of spirobased scaffold through-space charge transfer emitters.

Chinese Chemical Letters 34 (2023) 107634



## Three-in-one Fe-porphyrin based hybrid nanosheets for enhanced $\text{CO}_2$ reduction and evolution kinetics in Li- $\text{CO}_2$ battery

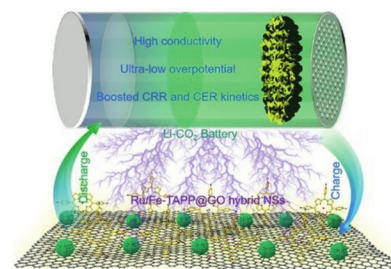
Shan Li<sup>a</sup>, Jian-Hui Wang<sup>a</sup>, Long-Zhang Dong<sup>a</sup>, Yu Zhang<sup>a</sup>, Xiao-Man Yao<sup>b</sup>, Yifa Chen<sup>a,b</sup>, Shun-Li Li<sup>a,b</sup>, Ya-Qian Lan<sup>a,b</sup>

<sup>a</sup>Jiangsu Collaborative Innovation Centre of Biomedical Functional Materials, Jiangsu Key Laboratory of New Power Batteries, School of Chemistry and Materials Science, Nanjing Normal University, Nanjing 210023, China

<sup>b</sup>National and Local Joint Engineering Research Center of MPES 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

A kind of Ru/Fe-TAPP@GO hybrid nanosheets has been prepared through a one-pot reflux method and successfully applied as efficient cathode catalyst for high-performance Li- $\text{CO}_2$  battery.

Chinese Chemical Letters 34 (2023) 107633



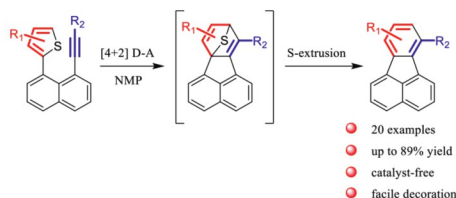
## Facile synthesis and functionalization of fluoranthenes via intramolecular [4 + 2] annulations between thiophenes and alkynes

Shoudong Xie, Weinan Chen, Si Liu, Hao Zong, Binbin Ming, Gang Zhou

Lab of Advanced Materials, State Key Laboratory of Molecular Engineering of Polymers, Fudan University, Shanghai 200438, China

A catalyst-free intramolecular [4 + 2] annulation between thiophenes and alkynes is developed towards the synthesis of fluoranthenes derivatives.

Chinese Chemical Letters 34 (2023) 107642



## Performance enhancement in organic solar cells and photodetectors enabled by donor phase optimization at the surface of hole transport layer

Xiaoyang Du<sup>a</sup>, Qian Zhang<sup>a</sup>, Zeyu He<sup>a</sup>, Hui Lin<sup>a</sup>, Gang Yang<sup>a</sup>, Zhenhua Chen<sup>b</sup>, Caijun Zheng<sup>a</sup>, Silu Tao<sup>a</sup>

<sup>a</sup>School of Optoelectronic Science and Engineering, University of Electronic Science and Technology of China, Chengdu 610054, China

<sup>b</sup>Shanghai Synchrotron Facility (SSRF), Shanghai Advanced Research Institute, Chinese Academy of Sciences, Shanghai 201204, China

A novel strategy that combining a ternary strategy with the sequential deposition method are developed for achieving high performance OSCs and OPDs. In the strategy, the formation of double-donor D18-Cl:PTO2 eutectic not only improves the crystallinity and stacking properties of the constituent materials, but also regulates a good vertical distribution, which is conducive to improving the charge transport and extraction efficiency, reducing the leakage current and enhancing the stability of the device.

Chinese Chemical Letters 34 (2023) 107641



## Enhancing hydrogen evolution reaction performance of transition metal doped two-dimensional electride Ca<sub>2</sub>N

Baoyu Liu<sup>a</sup>, Ziqiang Chen<sup>a</sup>, Rui Xiong<sup>a</sup>, Xuhui Yang<sup>b</sup>, Yinggan Zhang<sup>c</sup>, Teng Xie<sup>a</sup>, Cuilian Wen<sup>a</sup>, Baisheng Sa<sup>a</sup>

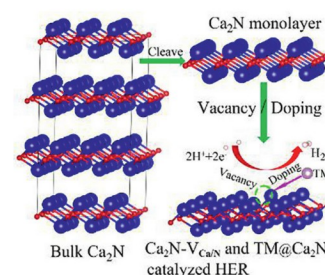
<sup>a</sup>Multiscale Computational Materials Facility, and Key Laboratory of Eco-materials Advanced Technology, College of Materials Science and Engineering, Fuzhou University, Fuzhou 350100, China

<sup>b</sup>College of Environmental Science and Engineering, Fujian Key Laboratory of Pollution Control & Resource Reuse, Fujian Normal University, Fuzhou 350007, China

<sup>c</sup>College of Materials, Fujian Provincial Key Laboratory of Theoretical and Computational Chemistry, Xiamen University, Xiamen 361005, China

The HER catalytic activity of 2D electride Ca<sub>2</sub>N monolayer has been enhanced by introducing Ca or N vacancies and transition metal atoms (TM, refers to Ti, V, Cr, Mn, Fe, Zr, Nb, Mo, Ru, Hf, Ta and W) dopants, which expands its application prospect in the field of HER catalysts.

Chinese Chemical Letters 34 (2023) 107643



## Bis-naphthalimide-based supramolecular self-assembly system for selective and colorimetric detection of oxalyl chloride and phosgene in solution and gas phase

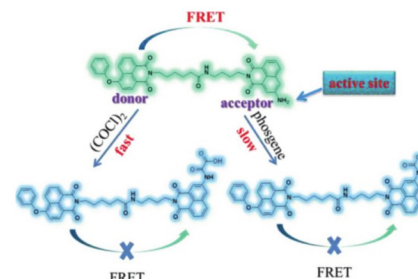
Qingqing Wang<sup>a</sup>, Huijuan Wu<sup>a</sup>, Aiping Gao<sup>a</sup>, Xuefei Ge<sup>a</sup>, Xueping Chang<sup>a</sup>, Xinhua Cao<sup>a,b</sup>

<sup>a</sup>College of Chemistry and Chemical Engineering & Green Catalysis and Synthesis Key Laboratory of Xinyang city, Xinyang Normal University, Xinyang 464000, China

<sup>b</sup>Department of Chemistry, Fudan University, Shanghai 200438, China

Bis-naphthalimide-based gelator with intramolecular energy transfer was designed and synthesized. This supramolecular self-assembly system had the selective and colorimetric detection performance to oxalyl chloride and phosgene in solution and gas phase.

Chinese Chemical Letters 34 (2023) 107644



## Transition metal decorated bismuthene for ammonia synthesis: A density functional theory study

Jing Wu<sup>a</sup>, Lei Yang<sup>b</sup>, Xin Liu<sup>a</sup>, Beibei Xiao<sup>a,c</sup>, Zhimin Ao<sup>d</sup>

<sup>a</sup>School of Energy and Power Engineering, Jiangsu University of Science and Technology, Zhenjiang 212003, China

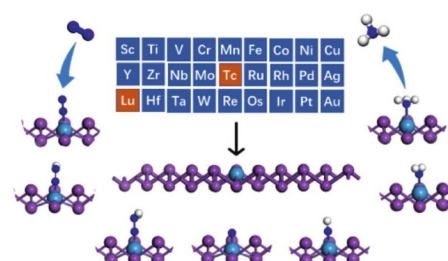
<sup>b</sup>School of Chemistry and Chemical Engineering, Institute for Computation in Molecular and Materials Science, Nanjing University of Science and Technology, Nanjing 210094, China

<sup>c</sup>Institut Charles Gerhardt Montpellier, UMR-5253, Université de Montpellier, CNRS, ENSCM, Place E. Bataillon, Cedex 05, Montpellier 34095, France

<sup>d</sup>Advanced Interdisciplinary Institute of Environment and Ecology, Beijing Normal University, Zhuhai 519087, China

The transition metal W embedded bismuthene efficiently catalyzes nitrogen electroreduction to ammonia with the small limiting potential of 0.26 V. The good activity stems from the partial-filling *d* band of W which enables the electron donation-acceptance mechanism.

Chinese Chemical Letters 34 (2023) 107659





## Investigation into the structures and physicochemical properties of multi-component crystals of voriconazole

Hong-Mei Yu<sup>a</sup>, Bao-Xi Zhang<sup>a</sup>, Wen-Hui Xing<sup>a</sup>, Mei-Ju Liu<sup>a</sup>, Feng-Feng Wang<sup>b</sup>, Ning-Bo Gong<sup>a</sup>, Li Zhang<sup>a</sup>, Yang Lu<sup>a</sup>, Guan-Hua Du<sup>c</sup>

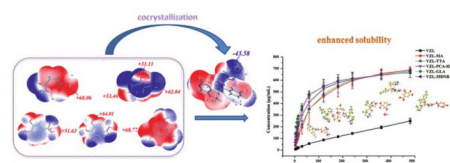
<sup>a</sup>Beijing Key Laboratory of Polymorphic Drugs, Institute of Materia Medica, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing 100050, China

<sup>b</sup>National Institutes for Food and Drug Control, Beijing 102629, China

<sup>c</sup>Beijing City Key Laboratory of Drug Target Identification and Drug Screening, Institute of Materia Medica, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing 100050, China

Novel voriconazole multi-component crystals were prepared via liquid-assisted grinding and solvent evaporation method. Cocrystallization technique shows impressive advantages in improving the solubility and dissolution rate of voriconazole.

Chinese Chemical Letters 34 (2023) 107668



## Electrokinetic transport of nanoparticles in functional group modified nanopores

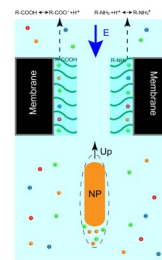
Teng Zhou<sup>a</sup>, Xiaohan He<sup>a</sup>, Juncheng Zhao<sup>a</sup>, Liuyong Shi<sup>a</sup>, Liping Wen<sup>a,b</sup>

<sup>a</sup>Mechanical and Electrical Engineering College, Hainan University, Haikou 570228, China

<sup>b</sup>CAS Key Laboratory of Bio-inspired Materials and Interfacial Science, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing 100190, China

The protonation and deprotonation reactions in the brush layer will change the charge properties of the brush layer, and then affect the transport of particles in the nanopores.

Chinese Chemical Letters 34 (2023) 107667



## Amorphous nickel borate nanosheets as cathode material with high capacity and better cycling performance for zinc ion battery

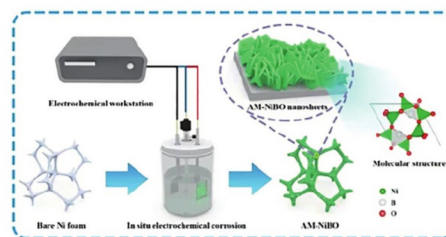
Na Li<sup>a</sup>, Xixi Zhang<sup>a</sup>, Shunshun Zhao<sup>b</sup>, Chuanlin Li<sup>a</sup>, Xiaojuan Li<sup>a</sup>, Tongkai Wang<sup>a</sup>, Yupeng Xing<sup>a</sup>, Gangmeng Qu<sup>a</sup>, Xijin Xu<sup>a</sup>

<sup>a</sup>School of Physics and Technology, University of Jinan, Ji'nan 250022, China

<sup>b</sup>School of Electronic and Information Engineering (Department of Physics), Qilu University of Technology (Shandong Academy of Sciences), Ji'nan 250353, China

The AM-NiBO of amorphous nanosheets structure and stable coordination characteristics of boron and oxygen was synthesized by *in-situ* electrochemical corrosion method. We assembled zinc ion batteries using synthetic AM-NiBO as a cathode material, showing excellent electrochemical properties and mechanical stability.

Chinese Chemical Letters 34 (2023) 107669



## Employing halogen-halogen interaction to construct high-temperature hybrid perovskite phase transition materials

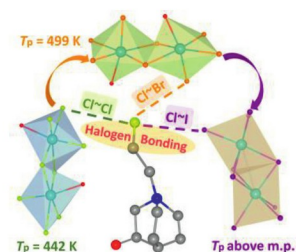
Dongying Fu<sup>a,b</sup>, Zuoming Hou<sup>a</sup>, Zhuo Chen<sup>a</sup>, Yueyue He<sup>a</sup>, Xian-Ming Zhang<sup>a</sup>

<sup>a</sup>Institute of Crystalline Materials, Shanxi University, Taiyuan 030006, China

<sup>b</sup>State Key Laboratory of Quantum Optics and Quantum Optics Devices, Shanxi University, Taiyuan 030006, China

The phase transition temperature ( $T_p$ ) of hybrid perovskite is accurate regulated through halogen-halogen interaction.

Chinese Chemical Letters 34 (2023) 107676



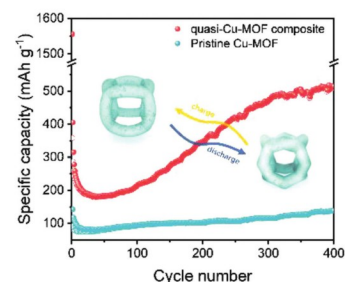
## Rational design of self-sacrificial template derived quasi-Cu-MOF composite as anodes for high-performance lithium-ion batteries

Jiajing Wang, Xiaotian Guo, Qingling Jing, Wenting Li, Tingting Chen, Rongmei Zhu, Huan Pang

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

Quasi-MOF can represent an intermediate state between highly crystalline MOF materials and metal compounds, which can be fabricated by low-temperature calcination. This strategy could maintain the morphologic characteristics of MOF and improve the structural stability and conductivity.

Chinese Chemical Letters 34 (2023) 107675



## A comparison study on single metal atoms (Fe, Co, Ni) within nitrogen-doped graphene for oxygen electrocatalysis and rechargeable Zn-air batteries

Shuai Xie<sup>a</sup>, Hongchang Jin<sup>a</sup>, Chao Wang<sup>b</sup>, Huanyu Xie<sup>a</sup>, Ying-Rui Lu<sup>c</sup>, Ting-Shan Chan<sup>c</sup>, Wensheng Yan<sup>b</sup>, Song Jin<sup>a</sup>, Hengxing Ji<sup>a</sup>

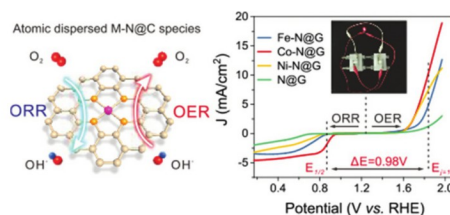
<sup>a</sup>School of Chemistry and Material Sciences, CAS Key Laboratory of Materials for Energy Conversion, University of Science and Technology of China, Hefei 230026, China

<sup>b</sup>National Synchrotron Radiation Laboratory, University of Science and Technology of China, Hefei 230026, China

<sup>c</sup>National Synchrotron Radiation Research Center, 300 Hsinchu, Taiwan, China

Single atom catalysts with atomically dispersed transition metals on nitrogen-doped graphene sheets (M-N@G, M=Co, Fe and Ni), featured with similar physicochemical properties and M-N@C configurations, are obtained. The favorable charge transfer between Co-N@C active sites and the oxygen-containing intermediates leads to its superior ORR/OER bifunctional electrocatalytic activity and its remarkable Zn-air battery performance.

Chinese Chemical Letters 34 (2023) 107681



## Gadolinium-based contrast agents built of DO3A-pyridine scaffold: Precisely tuning carboxylate group for enhanced magnetic resonance imaging

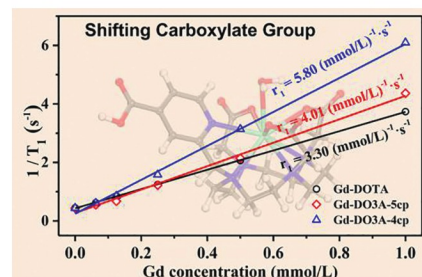
Yongyin Geng<sup>a</sup>, Tianze Wu<sup>a</sup>, Qiuyue Han<sup>b</sup>, Yongtai Yang<sup>a</sup>, Zhenxia Chen<sup>a</sup>, Xuanxuan Li<sup>b</sup>, Bo Yin<sup>b</sup>, Yaming Zhou<sup>a</sup>, Yun Ling<sup>a</sup>

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

<sup>b</sup>Department of Radiology, Huashan Hospital North, Fudan University, Shanghai 201907, China

Precisely tuning carboxylate group on the pyridine pendent arm of DO3A scaffold resulted into the isolation of novel gadolinium-based contrast agent with high relaxivity, showing the capability for *in-vivo* MRI performance on mice.

Chinese Chemical Letters 34 (2023) 107685



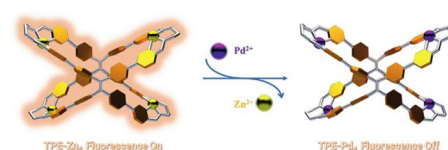
## Self-assembly of a quadrangular prismatic covalent cage templated by zinc ions: A selective fluorescent sensor for palladium ions

Ya-Liang Lai, Hao-Jie Zhang, Juan Su, Xue-Zhi Wang, Dong Luo, Jia-Xing Liu, Xiao-Ping Zhou, Dan Li

College of Chemistry and Materials Science, Guangdong Provincial Key Laboratory of Functional Supramolecular Coordination Materials and Applications, Jinan University, Guangzhou 510632, China

A quadrangular prismatic covalent cage templated by zinc ions was synthesized, which can be used as a selective fluorescence sensor for palladium ions with a detection limit as low as 62.3 nmol/L.

Chinese Chemical Letters 34 (2023) 107686





## One-step assembly of Pd-Keggin-polyoxometalates for catalytic benzothiadiazole generation and derived cell-imaging probe application

Xianqiang Huang<sup>a</sup>, Weilong Cui<sup>b</sup>, Sen Liu<sup>a</sup>, Gang Liu<sup>a</sup>, Yalin Zhang<sup>a</sup>, Zhihao Zhang<sup>b</sup>, Guodong Shen<sup>a</sup>, Zhen Li<sup>a</sup>, Jianyong Wang<sup>b</sup>, Yifa Chen<sup>c,d</sup>

<sup>a</sup>Shandong Provincial Key Laboratory of Chemical Energy Storage and Novel Cell Technology, School of Chemistry & Chemical Engineering, Liaocheng University, Liaocheng 252059, China

<sup>b</sup>Key Laboratory of Biobased Material and Green Papermaking, Key Laboratory of Pulp & Paper Science and Technology of Shandong Province/Ministry of Education, Qilu University of Technology (Shandong Academy of Sciences), Ji'nan 250353, China

<sup>c</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), South China Normal University, Guangzhou 510006, China

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Three Pd-Keggin-POMs have been successfully synthesized via a one-step synthetic strategy and exhibited efficient catalytic activities in the synthesis of benzothiadiazole-based cell imaging bio-probes.

Chinese Chemical Letters 34 (2023) 107692



## Effect of poly(4-*tert*-butylstyrene) block length on the microphase structure of poly(ethylene oxide)-*b*-poly(4-vinylbenzyl chloride)-*b*-poly(4-*tert*-butylstyrene) triblock terpolymers

Kun An<sup>a</sup>, Jia Gao<sup>a</sup>, Yihang Chen<sup>b</sup>, Jingjing Nie<sup>c</sup>, Yongjin Li<sup>b</sup>, Junting Xu<sup>a</sup>, Binyang Du<sup>a</sup>

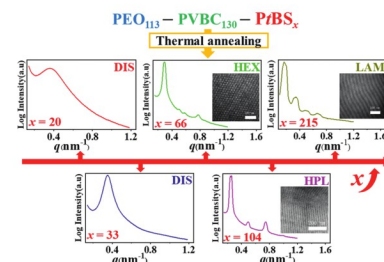
<sup>a</sup>State Key Laboratory of Motor Vehicle Biofuel Technology, Department of Polymer Science & Engineering, Zhejiang University, Hangzhou 310027, China

<sup>b</sup>College of Material, Chemistry and Chemical Engineering, Hangzhou Normal University, Hangzhou 310036, China

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With increasing  $x$  from 20 to 215, the phase structure of PEO<sub>113</sub>-*b*-PVBC<sub>130</sub>-*b*-PrBS <sub>$x$</sub>  triblock terpolymers changed from disordered structure, hexagonally-packed cylinder (HEX), hexagonally perforated layer (HPL), to lamellar (LAM) phase structures.

Chinese Chemical Letters 34 (2023) 107690



## Direct reuse of LiFePO<sub>4</sub> cathode materials from spent lithium-ion batteries: Extracting Li from brine

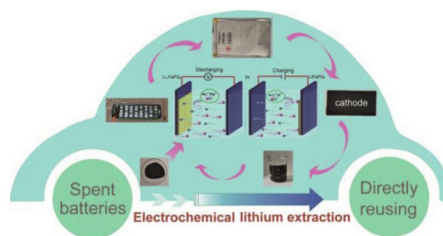
Miao Du<sup>a</sup>, Jin-Zhi Guo<sup>b</sup>, Shuo-Hang Zheng<sup>b</sup>, Yan Liu<sup>a</sup>, Jia-Lin Yang<sup>b</sup>, Kai-Yang Zhang<sup>b</sup>, Zhen-Yi Gu<sup>b</sup>, Xiao-Tong Wang<sup>b</sup>, Xing-Long Wu<sup>a,b</sup>

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<sup>b</sup>MOE Key Laboratory for UV Light-Emitting Materials and Technology, Northeast Normal University, Changchun 130024, China

The direct reuse of spent LiFePO<sub>4</sub> powder for electrochemical lithium extraction from brine is proposed firstly, which exhibits appropriate capacity, excellent separation performance, low energy consumption, and provides a new avenue for electrochemical lithium extraction.

Chinese Chemical Letters 34 (2023) 107706



## High ionic conductive protection layer on Zn metal anode for enhanced aqueous zinc-ion batteries

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<sup>a</sup>School of Chemical Engineering, Lanzhou City University, Lanzhou 730070, China

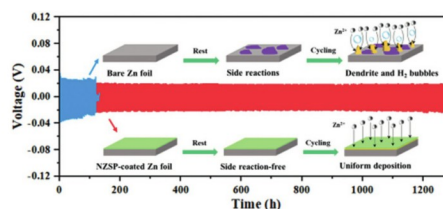
<sup>b</sup>Leibniz Institute for Solid State and Materials Research (IFW) Dresden e.V., Helmholtzstraße 20, 01069 Dresden, Germany

<sup>c</sup>Materials Synthesis and Processing (IEK-1), Institute of Energy and Climate Research, Forschungszentrum Jülich GmbH, 52425, Jülich, Germany

<sup>d</sup>Hefei National Laboratory for Physical Science at the Microscale, Department of Applied Chemistry, University of Science and Technology of China, Hefei 230026, China

Na<sub>3</sub>Zr<sub>2</sub>Si<sub>2</sub>PO<sub>12</sub> (NZSP) protection layer with high ionic conductivity on Zn metal prevents side reactions, hydrogen evolution as well as dendrite formation, which endows improved electrochemical performance of symmetric cells and full cells.

Chinese Chemical Letters 34 (2023) 107703



## Photoelectron imaging spectroscopic signatures of CO activation by the heterotrimeric titanium-nickel clusters

Jianpeng Yang<sup>a</sup>, Jumei Zhang<sup>b,c</sup>, Shihu Du<sup>b</sup>, Gang Li<sup>b</sup>, Jinghan Zou<sup>b</sup>, Qiangshan Jing<sup>a</sup>, Hua Xie<sup>b</sup>, Ling Jiang<sup>b</sup>

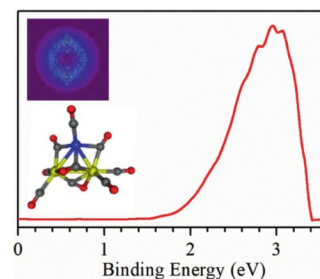
<sup>a</sup> College of Chemistry and Chemical Engineering, Xinyang Normal University, Xinyang 464000, China

<sup>b</sup> State Key Laboratory of Molecular Reaction Dynamics, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian 116023, China

<sup>c</sup> School of Life Science, Ludong University, Yantai 264025, China

The CO activation by metal clusters plays an essential role in various areas, such as catalysis and organometallic synthesis. Photoelectron velocity-map imaging spectroscopy of heterotrimeric  $\text{Ti}_2\text{Ni}(\text{CO})_n^-$  carbonyls reveals the capability of simultaneously accommodating the terminal, bridging, and side-on bonding modes, pointing to the weak, moderate, high C–O bond activation.

Chinese Chemical Letters 34 (2023) 107702



## Synergistic effect of fluorinated solvent and $\text{Mg}^{2+}$ enabling 4.6 V $\text{LiCoO}_2$ performances

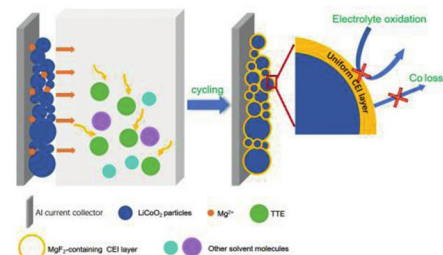
Yijia Huang<sup>a</sup>, Yidan Zhu<sup>a</sup>, Hongyu Cheng<sup>a</sup>, Meng Liu<sup>a</sup>, Yingying Song<sup>a</sup>, Xiaoliang Ding<sup>a</sup>, Kaiyun Xu<sup>a</sup>, Yinping Qin<sup>a</sup>, Yang Liu<sup>a</sup>, Bingkun Guo<sup>a,b</sup>

<sup>a</sup> Materials Genome Institute, Shanghai University, Shanghai 200444, China

<sup>b</sup> Tianmu Lake Institute of Advanced Energy Storage Technology, Liyang 213300, China

The  $\text{Mg}^{2+}$  added to the cathode is gradually released into the electrolyte during the battery cycle, and combines with TTE to form  $\text{MgF}_2$  protective layer covering the surface of the  $\text{LiCoO}_2$  cathode. The  $\text{MgF}_2$ -containing CEI layer can suppress electrolyte oxidation and Co loss.

Chinese Chemical Letters 34 (2023) 107711



## Complementary dual-doping of $\text{LiNi}_{0.8}\text{Co}_{0.1}\text{Mn}_{0.1}\text{O}_2$ cathode enhances ion-diffusion and stability for Li-ion batteries

Zhihong Wang<sup>a,c</sup>, Huawei Zhu<sup>a</sup>, Haifeng Yu<sup>a</sup>, Tao Zhang<sup>c</sup>, Yanjie Hu<sup>a,b</sup>, Hao Jiang<sup>a,b</sup>, Chunzhong Li<sup>a,b</sup>

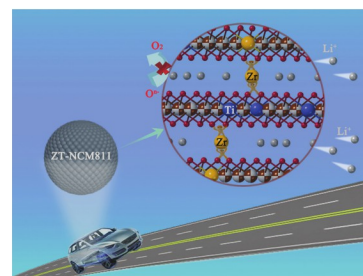
<sup>a</sup> Shanghai Engineering Research Center of Hierarchical Nanomaterials, School of Materials Science and Engineering, East China University of Science and Technology, Shanghai 200237, China

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

<sup>c</sup> State Key Lab of High Performance Ceramics and Superfine Microstructure, Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai 200050, China

The dual-doped strategy can enhance the structure stability and ion-diffusion of NCM811. Therefore, the capacity retention of NCM811 at 1 C have been improved from 89.0% to 98.8%.

Chinese Chemical Letters 34 (2023) 107718



## Hierarchically structured flower-like Ru nanoparticles-cucurbit[6]uril/multiwalled carbon nanotubes as efficient pH-universal hydrogen evolution electrocatalyst

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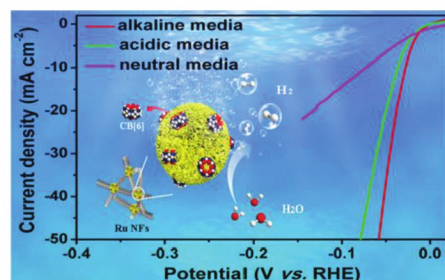
<sup>b</sup> College of Chemistry Engineering, Fuzhou University, Fuzhou 350108, China

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

<sup>d</sup> Fujian Science & Technology Innovation Laboratory for Optoelectronic Information of China, Fuzhou 350108, China

A hierarchically structured nanocomposite consisting of flower-like Ru NPs, cucurbit[6]uril, and multiwalled carbon nanotubes is synthesized, showing excellent pH-universal HER performance.

Chinese Chemical Letters 34 (2023) 107717





## Surface engineering for high stable lithium-rich manganese-based cathode materials

Miaomiao Zhou<sup>a</sup>, Jianjun Zhao<sup>b</sup>, Xiaodong Wang<sup>a</sup>, Ji Shen<sup>c</sup>, Wenhao Tang<sup>a</sup>, Yirui Deng<sup>a</sup>, Ruiping Liu<sup>a,c</sup>

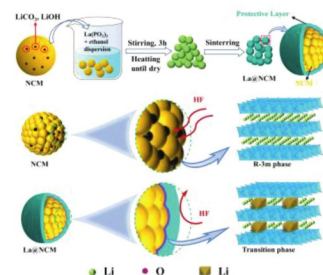
<sup>a</sup>School of Chemical & Environmental Engineering, China University of Mining and Technology (Beijing), Beijing 100083, China

<sup>b</sup>State Key Laboratory of Chemical Resources Engineering, Beijing Advanced Innovation Center for Soft Matter Science and Engineering, College of Chemistry, Beijing University of Chemical Technology, Beijing 100029, China

<sup>c</sup>Department of Materials Science and Engineering, China University of Mining & Technology (Beijing), Beijing 100083, China

The metal complex phosphate layer formed during calcination on the surface of cathode materials can effectively resist the side reaction between the electrode material and HF. Spinel  $\text{LiMn}_2\text{O}_4$  formed in the contact area between the particles is more stable than the lamellar structure, which hinders the  $\text{O}^{2-}$  transportation and reduces the oxygen loss in the material, thus stabilizing the crystal structure of cathode during cycling.

Chinese Chemical Letters 34 (2023) 107793



## Leather waste as precursor to prepare bifunctional catalyst for alkaline and neutral zinc-air batteries

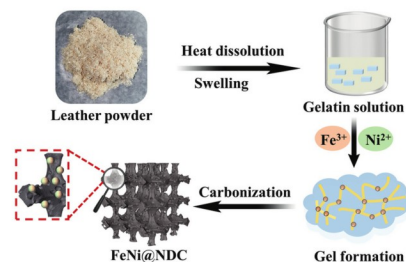
Zeyu Zhu<sup>a</sup>, Jing Zhu<sup>a</sup>, Yangshen Chen<sup>a</sup>, Xinxin Liu<sup>a</sup>, Mengchun Zhang<sup>b</sup>, Mengxiao Yang<sup>a</sup>, Mengyu Liu<sup>b</sup>, Jiansheng Wu<sup>a</sup>, Sheng Li<sup>a</sup>, Fengwei Huo<sup>a</sup>

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

<sup>b</sup>School of Chemistry and Molecular Engineering, Nanjing Tech University, Nanjing 211816, China

Carbon materials derived from biomass waste are considered as potential electrocatalysts for applications in zinc-air batteries (ZABs) due to their low cost and good catalytic activity. Here, we reported the preparation of gel-based catalysts through utilizing hydrolyzed waste leather powder cross-linked with metallic salt solutions. After calcination, iron-nickel alloy anchored in nitrogen-doped porous carbon catalysts ( $\text{FeNi@NDC}$ ) was achieved.

Chinese Chemical Letters 34 (2023) 107756



## Defect electrons accelerate iron cycle of novel Fe-based Fenton: Long-term effective quinoline degradation

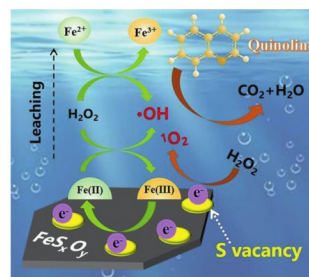
Weikang Hu<sup>a</sup>, Ming Yang<sup>a</sup>, Qingyun Yan<sup>a</sup>, Jiahui Ji<sup>a</sup>, Yan Bao<sup>a</sup>, Jinlong Zhang<sup>a,b</sup>, Mingyang Xing<sup>a,b</sup>

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A defect chemistry strategy to solve the rapid deactivation of Fenton catalyst provides a new choice for the long-term treatment for refractory organic pollutant.

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