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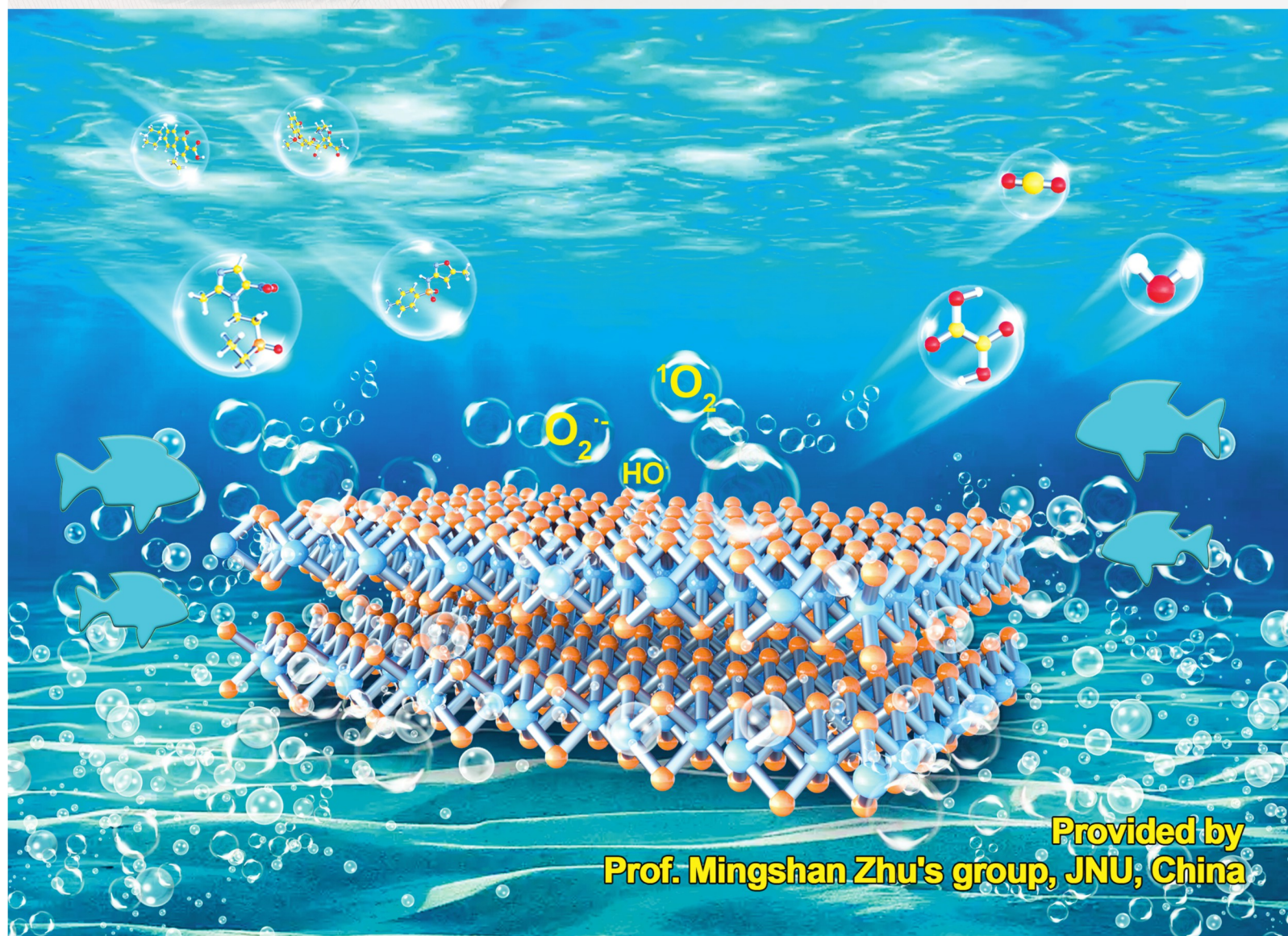
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## Chinese Chemical Letters (中国化学快报)

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Prof. Mingshan Zhu's group, JNU, China



## REVIEW

Chaoyue Chen, Zhichang Liu, et al.  
Recent advances in the synthesis and  
applications of furocoumarin derivatives

## COMMUNICATION

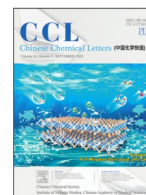
Zuguang Li, Hongdeng Qiu, et al.  
Synthesis and modification of spherical/  
hollow metal-organic frameworks for efficient  
extraction of sulfonamides in aqueous  
environments

Chinese Chemical Society

Institute of Materia Medica, Chinese Academy of Medical Sciences

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## Graphical Abstracts/Chin Chem Lett 34 (2023) 108771

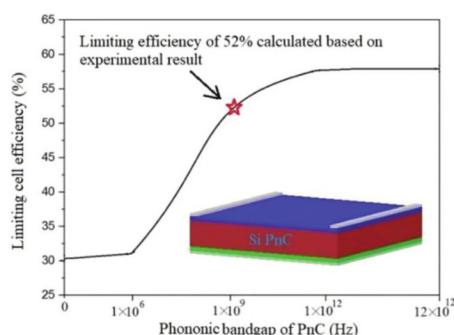
## Editorials

### Manipulating hot carrier cooling in silicon phononic crystals opens new application opportunities

Peng Zhou<sup>a,b</sup>, Shaojuan Lu<sup>c</sup>, Wangnan Li<sup>b,d</sup>, Shulai Lei<sup>b,d</sup><sup>a</sup>State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, Wuhan 430070, China<sup>b</sup>Hubei Key Laboratory of Low Dimensional Optoelectronic Materials and Devices, Hubei University of Arts and Science, Xiangyang 441053, China<sup>c</sup>Hubei Institute of Aerospace Chemotechnology, Xiangyang 441003, China<sup>d</sup>Hubei Longzhong Laboratory, Xiangyang 441000, China

Significantly slowed hot carrier cooling is observed by manipulating hot carrier behavior in low dimensional silicon phononic crystals. It opens new opportunities for promising applications. As an example, its potential for photovoltaic application is analyzed and discussed.

Chinese Chemical Letters 34 (2023) 108327

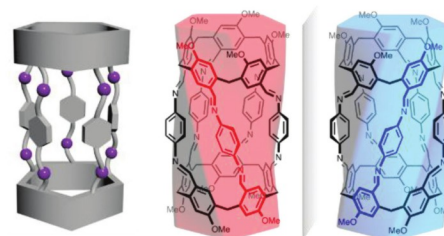


### Construction of molecular nanotubes with precise length, diameter and chirality

Qiaona Zhang<sup>a</sup>, Hongwei Qian<sup>a</sup>, Tangxin Xiao<sup>a</sup>, Robert B.P. Elmes<sup>b</sup>, Leyong Wang<sup>c</sup><sup>a</sup>School of Petrochemical Engineering, Changzhou University, Changzhou 213164, China<sup>b</sup>Department of Chemistry, Maynooth University, National University of Ireland, Maynooth, Co. Kildare, Ireland<sup>c</sup>State Key Laboratory of Analytical Chemistry for Life Science, Jiangsu Key Laboratory of Advanced Organic Materials, School of Chemistry and Chemical Engineering, Nanjing University, Nanjing 210023, China

The construction of nanotubes with precise parametric structures is a challenge that has stimulated an ever increasing amount of research interest. Recently, Andrew C.-H. Sue and co-workers from Xiamen University have reported a type of discrete chiral nanotube derived from rim-desymmetrized macrocycles. These macrocycles exhibit strong inclusion affinities for linear alkane derivatives with complementary parameters.

Chinese Chemical Letters 34 (2023) 108365



## Highlight

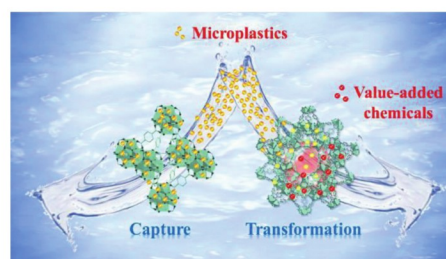
### MOFs-based functional materials for aqueous micro/nanoplastics elimination

Chong-Chen Wang, Zi-Chen Zhang, Xiao-Hong Yi

Beijing Key Laboratory of Functional Materials for Building Structure and Environment Remediation, School of Environment and Energy Engineering, Beijing University of Civil Engineering and Architecture, Beijing 100044, China

Microplastics elimination can be accomplished via capture or transformation over MOFs.

Chinese Chemical Letters 34 (2023) 108182



## Reviews

### A mini-review of the electro-peroxone technology for wastewaters: Characteristics, mechanism and prospect

Lu Chen<sup>a</sup>, Lanlan Wei<sup>a</sup>, Yifan Ru<sup>a</sup>, Mili Weng<sup>b</sup>, Lin Wang<sup>c</sup>, Qizhou Dai<sup>a</sup>

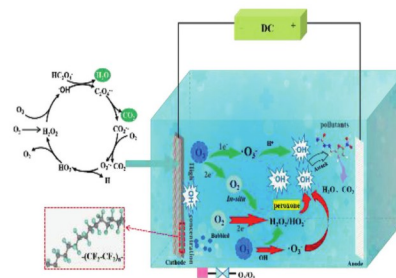
<sup>a</sup> College of Environment, Zhejiang University of Technology, Hangzhou 310032, China

<sup>b</sup> College of Environmental and Resources Sciences, Zhejiang A&F University, Hangzhou 311300, China

<sup>c</sup> School of Biological and Chemical Engineering, NingboTech University, Ningbo 315100, China

As a novel advanced oxidation process, the electro-peroxone technology sprays the mixture of O<sub>2</sub> and O<sub>3</sub> gas from the ozone generator on the cathode electrode to generate H<sub>2</sub>O<sub>2</sub>. The electro-peroxone technology can generate more ·OH and shows an obvious synergistic effect of electrochemical oxidation and ozonation for wastewater treatment.

Chinese Chemical Letters 34 (2023) 108162



### Emerging advances in plasmonic nanoassemblies for biosensing and cell imaging

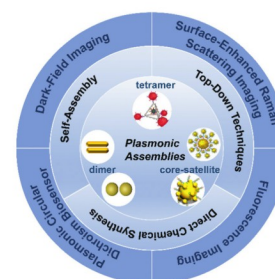
Jin Wang<sup>a,b</sup>, Chen Wang<sup>a,b</sup>, Jing-Juan Xu<sup>b</sup>, Xing-Hua Xia<sup>b</sup>, Hong-Yuan Chen<sup>b</sup>

<sup>a</sup> College of Chemistry and Materials Science, Nanjing Normal University, 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

Plasmonic nanoassemblies such as dimer, tetramer and core-satellite structures have been widely used in biosensing and cell imaging based on dark-field imaging, surface-enhanced Raman scattering, plasmonic circular dichroism and fluorescence imaging, and their fabrication strategies mainly include top-down techniques, self-assembly and direct chemical synthesis methods.

Chinese Chemical Letters 34 (2023) 108165



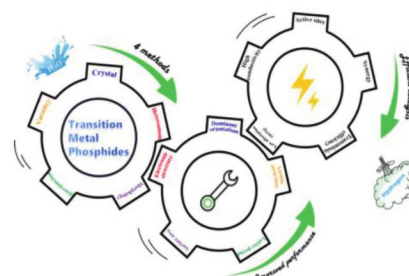
### Transition metal phosphides: A wonder catalyst for electrocatalytic hydrogen production

Mingxuan Du, Deng Li, Shengzhong (Frank) Liu, Junqing Yan

Key Laboratory of Applied Surface and Colloid Chemistry, Ministry of Education, Shaanxi Engineering Lab for Advanced Energy Technology, School of Materials Science and Engineering, Shaanxi Normal University, Xi'an 710119, China

This review focuses on TMPs catalysts for HER application. The unique "Stimulatory factors" of these strategies can change the morphology, composition, or microstructure of the material from different aspects, thereby improving the catalytic efficiency of HER.

Chinese Chemical Letters 34 (2023) 108156



### Engineering sulfur vacancies for boosting electrocatalytic reactions

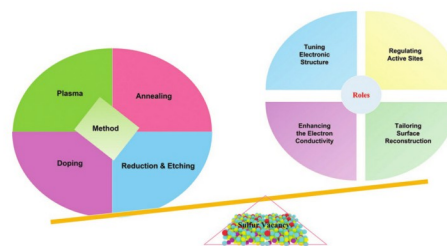
Xianxu Chu<sup>a</sup>, Yueyu Liao<sup>b</sup>, Lu Wang<sup>a</sup>, Junru Li<sup>a</sup>, Hui Xu<sup>b</sup>

<sup>a</sup> Henan Key Laboratory of Biomolecular Recognition and Sensing, College of Chemistry and Chemical Engineering, Shangqiu Normal University, Shangqiu 476000, China

<sup>b</sup> Key Laboratory of Advanced Catalytic Materials and Technology, Advanced Catalysis and Green Manufacturing Collaborative Innovation Center, Changzhou University, Changzhou 213164, China

A comprehensive review about the sulfur vacancy engineering for boosting electrocatalytic reactions with the specific focus on the engineering strategies and roles of sulfur vacancies is organized.

Chinese Chemical Letters 34 (2023) 108285



### Recent progress in theranostic microbubbles

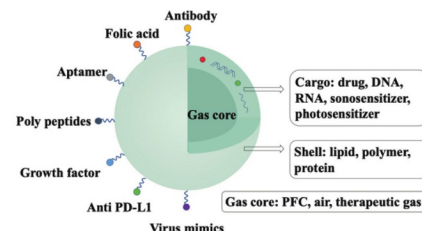
Ziyao Wang<sup>a</sup>, Ziyang Feng<sup>a</sup>, Fangxue Du<sup>a</sup>, Xi Xiang<sup>a</sup>, Xinyi Tang<sup>a</sup>, Li Qiu<sup>a</sup>, Zhiyong Qian<sup>b</sup>

<sup>a</sup> Department of Medical Ultrasound, West China Hospital of Sichuan University, Chengdu 610041, China

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

Ultrasound microbubbles are also gradually considered as the basic material for the preparation of drug delivery agents in addition to clinical diagnosis. In this review, we discussed the basic structure and function of microbubbles, and further analyzed the fabrication research progress of theranostic microbubbles.

Chinese Chemical Letters 34 (2023) 108137





## CAR-T cells for cancer immunotherapy

Yangyang Xie<sup>a</sup>, Xiaotong Li<sup>a</sup>, Jingyi Wu<sup>a</sup>, Huiling Zeng<sup>a</sup>, Hamza Boucetta<sup>a</sup>, Binru Wang<sup>a</sup>, Pei Yang<sup>b</sup>, Wei He<sup>c,a</sup>

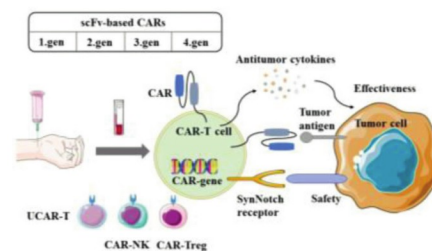
<sup>a</sup>School of Pharmacy, China Pharmaceutical University, Nanjing 210000, China

<sup>b</sup>School of Science, China Pharmaceutical University, Nanjing 210000, China

<sup>c</sup>Shanghai Skin Disease Hospital, Tongji University School of Medicine, Shanghai 200443, China

Adoptive immunotherapy expressing synthetic chimeric antigen receptors (CAR) on T cells through *in vitro* modifications represents a new and innovative strategy in cancer treatment. This new approach enables T cells to recognize tumor antigens independently and directly bind with specific antigens on the surface of tumor cells.

Chinese Chemical Letters 34 (2023) 108202



## Hydrogel-mediated drug delivery for treating stroke

Wenyan Yu<sup>a,b,c</sup>, Enpeng Gong<sup>a</sup>, Bingbing Liu<sup>a</sup>, Lei Zhou<sup>a</sup>, Chengyuan Che<sup>a</sup>, Shu Hu<sup>a</sup>, Zhenzhong Zhang<sup>a,b,c</sup>, Junjie Liu<sup>a,b,c</sup>, Jinjin Shi<sup>a,b,c</sup>

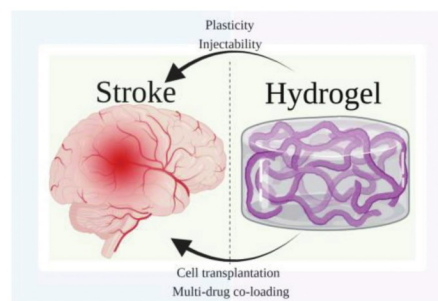
<sup>a</sup>School of Pharmaceutical Sciences, Zhengzhou University, Zhengzhou 450001, China

<sup>b</sup>Key Laboratory of Targeting Therapy and Diagnosis for Critical Diseases, Zhengzhou 450001, China

<sup>c</sup>Collaborative Innovation Center of New Drug Research and Safety Evaluation, Zhengzhou 450001, China

The main pathological mechanisms of stroke were comprehensively described. The benefits of hydrogel for stroke treatment are also summarized.

Chinese Chemical Letters 34 (2023) 108205



## Biomaterial-assisted photoimmunotherapy for synergistic suppression of cancer progression

Yanan Li<sup>a</sup>, Jing Cui<sup>b</sup>, Chenlong Li<sup>a</sup>, Caiting Deng<sup>c,d</sup>, Guowei Deng<sup>e</sup>, Hui Zhang<sup>a</sup>, Feifei An<sup>d</sup>

<sup>a</sup>College of Medical Imaging, Shanxi Medical University, Taiyuan 030001, China

<sup>b</sup>College of Public Health, Shanxi Medical University, Taiyuan 030001, China

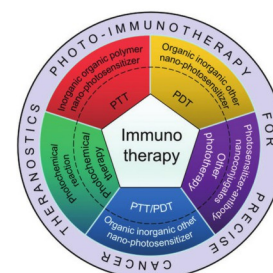
<sup>c</sup>School of Basic Medical Science, Health Science Center, Xi'an Jiaotong University, Xi'an 710061, China

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

<sup>e</sup>College of Chemistry and Life Science, Sichuan Provincial Key Laboratory for Structural Optimization and Application of Functional Molecules, Chengdu Normal University, Chengdu 611130, China

Focal photo-ablation-induced immunoenhancement encourages sufficient feasibility of phototherapy-synergized immunotherapy in battling cancer. The explosion of nanoarchitecture technology strengthens the significance of photoimmunotherapy in the precise diagnosis, targeted therapy and synergistic theranostic of malignancies. If the issues associated with system construction and mechanism analysis can be overcome, photo-triggered immunosynergy has immense potential for personalized cancer management.

Chinese Chemical Letters 34 (2023) 108180



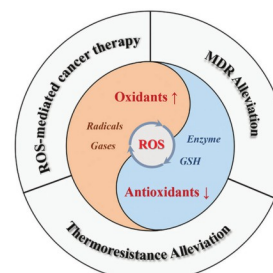
## Nanoplatform-based cellular reactive oxygen species regulation for enhanced oncotherapy and tumor resistance alleviation

Meifang Wang, Ping'an Ma, Jun Lin

State Key Laboratory of Rare Earth Resource Utilization, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, Changchun 130022, China

The cancer cells are sensitive to external interference with their redox state due to their special redox adaptation. The recent reported ROS-regulating nanoagents have shown the powerful effects in cancer therapy and tumor resistance alleviation.

Chinese Chemical Letters 34 (2023) 108300







## Visible light induced four component reaction of styrene for the access of thiodifluoroesters

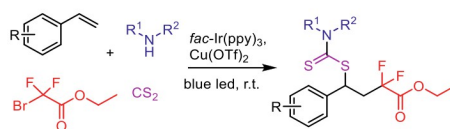
Shao-Hui Yang<sup>a</sup>, Jing-Cheng Song<sup>a</sup>, Hao Yang<sup>a</sup>, Meng-Yu Zhou<sup>a</sup>, Ze-Hui Wei<sup>a</sup>, Jia-Hui Gao<sup>a</sup>, Dao-Qing Dong<sup>a</sup>, Zu-Li Wang<sup>a,b</sup>

<sup>a</sup> College of Chemistry and Pharmaceutical Sciences, Qingdao Agricultural University, Qingdao 266109, China

<sup>b</sup> National Engineering Research Center of Low-Carbon Processing and Utilization of Forest Biomass, Nanjing Forestry University, Nanjing 210037, China

The visible light induced multicomponent reaction of styrene, carbon disulfide, amine and ethyl difluorobromoacetate for the synthesis of thiodifluoroesters is disclosed. This developed protocol offers a facile and general route to access various of valuable thiodifluoroesters in moderate to good yields. Preliminary mechanistic studies revealed that a radical process might be involved in this transformation.

Chinese Chemical Letters 34 (2023) 108131



## A Lewis acid-catalyzed tandem reaction enabling 2-arylglycerol derivative as a versatile 1,3-biselectrophile for the synthesis of 4H-chromenes and 2-pyridinones

Shaomin Chen<sup>a</sup>, Tianjian Zhang<sup>a</sup>, Zhenhua Xu<sup>a</sup>, Bo You<sup>a</sup>, Minghao Li<sup>a</sup>, Yanlong Gu<sup>a,b,c</sup>

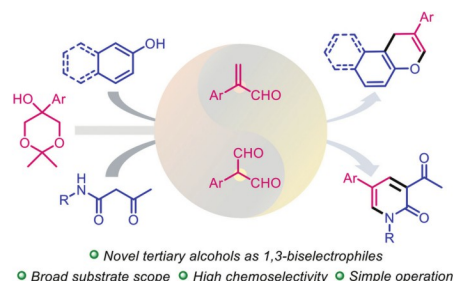
<sup>a</sup> Key Laboratory for Large-Format Battery Materials and System, Ministry of Education, Hubei Key Laboratory of Material Chemistry and Service Failure, School of Chemistry and Chemical Engineering, Huazhong University of Science and Technology, Wuhan 430074, China

<sup>b</sup> School of Chemistry and Chemical Engineering, The Key Laboratory for Green Processing of Chemical Engineering of Xinjiang Bingtuan, Shihezi University, Shihezi 832004, China

<sup>c</sup> State Key Laboratory for Oxo Synthesis and Selective Oxidation, Lanzhou Institute of Chemical Physics, Lanzhou 730000, China

Acid-catalyzed tandem reactions were established by employing a novel class of 2-arylglycerol derivative, 5-aryl-1,3-dioxan-5-ols, as the versatile 1,3-biselectrophiles, to react with 2-naphthols and  $\beta$ -keto amides, which allowed the synthesis of diverse heterocyclic molecules, 4H-chromenes and 5-aryl-2-pyridinones, with moderate to excellent yields and high chemoselectivity.

Chinese Chemical Letters 34 (2023) 108130



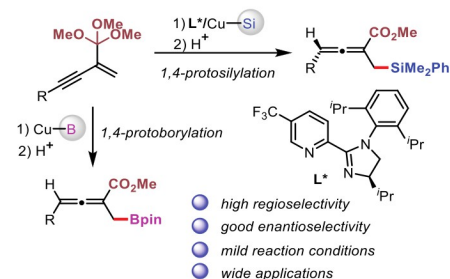
## Copper-catalyzed 1,4-protosilylation and 1,4-protoborylation of enynic orthoesters for synthesis of functionalized 2,3-allenoates

Qi Li, Zi-Lu Wang, Yun-He Xu

Department of Chemistry, University of Science and Technology of China, Hefei 230026, China

A copper-catalyzed 1,4-protosilylation and 1,4-protoborylation of enynic orthoesters have been developed. The enynic orthoesters as precursors of unstable enynic esters were applied to produce the functionalized 2,3-allenoate products. Meanwhile, the asymmetric 1,4-protosilylation of enynic orthoesters with  $\text{PhMe}_2\text{Si-Bpin}$  was also studied. The chiral monopyridine imidazoline ligand was efficient to provide the asymmetric 1,4-protosilylation products with high enantioselectivity.

Chinese Chemical Letters 34 (2023) 108150



## Asymmetric synthesis of *syn*-aryl-(2*S*,3*R*)-2-chloro-3-hydroxy esters via an engineered ketoreductase-catalyzed dynamic reductive kinetic resolution

Xiaoping Yue<sup>a</sup>, Yitong Li<sup>a</sup>, Di Sang<sup>b,c</sup>, Yuan Tao<sup>b,c</sup>, Zedu Huang<sup>b,c</sup>, Fener Chen<sup>a,b,c</sup>

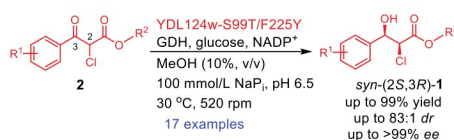
<sup>a</sup> Sichuan Research Center for Drug Precision Industrial Technology, West China School of Pharmacy, Sichuan University, Chengdu 610041, China

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

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

Seventeen valuable *syn*-aryl-(2*S*,3*R*)-2-chloro-3-hydroxy esters were synthesized through an engineered ketoreductase-catalyzed dynamic reductive kinetic resolution in a highly stereoselective manner.

Chinese Chemical Letters 34 (2023) 108178





## Flavidanolides A and B from *Isodon flavidus*

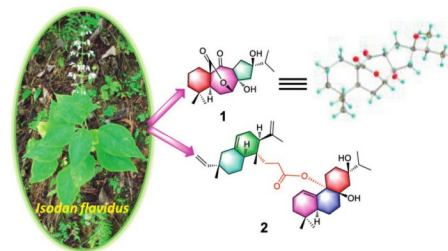
Jiang-Hai Ye<sup>a</sup>, Guo-Yong Luo<sup>a</sup>, Chen-Liang Zhao<sup>a,b</sup>, Zheng-Ming Liang<sup>b</sup>, Jin-Huai Wei<sup>a</sup>, Ya-Hua Liu<sup>a</sup>, Kang He<sup>a</sup>, Lu-Tai Pan<sup>a</sup>, Jing-Jie Zhang<sup>a</sup>, Juan Zou<sup>a</sup>, Hong-Jie Zhang<sup>b</sup>

<sup>a</sup>School of Pharmacy, Guizhou University of Traditional Chinese Medicine, Guiyang 550025, China

<sup>b</sup>School of Chinese Medicine, Hong Kong Baptist University, Hong Kong SAR 999077, China

A phytochemical investigation of *Isodon flavidus* led to the isolation of flavidanolide A (**1**), a novel diterpenoid possessing a unique 6/7/5 tricyclic skeleton, and flavidanolide B (**2**), an unusual heterodimeric diterpenoid comprising nor-abietane and 3,4-*seco*-isopimarane constituent units. Flavidanolide B was found to significantly inhibit lipopolysaccharide (LPS)-induced nitric oxide (NO) production in RAW264.7 cells.

Chinese Chemical Letters 34 (2023) 108621



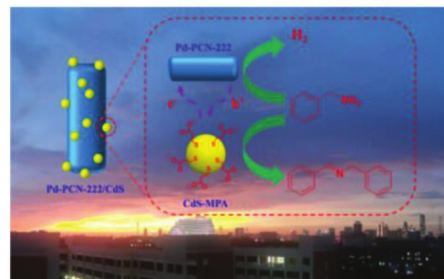
## Dual-functional photocatalysis boosted by electrostatic assembly of porphyrinic metal-organic framework heterojunction composites with CdS quantum dots

Zhiyao Chen, Sihong Li, Qijie Mo, Li Zhang, Cheng-Yong Su

MOE Laboratory of Bioinorganic and Synthetic Chemistry, Lehn Institute of Functional Materials, School of Chemistry, Sun Yat-sen University, Guangzhou 510006, China

Porphyrinic metal-organic framework heterojunction composites with CdS QDs (Pd-PCN-222/CdS) were prepared by the electrostatic self-assembly at room temperature, which displayed superb activity in dual-functional photocatalysis under visible light irradiation.

Chinese Chemical Letters 34 (2023) 108196



## Carbon dots with two-photon fluorescence imaging for efficient synergistic trimodal therapy

Yahui Zhang<sup>a,b</sup>, Haoyu Xia<sup>a,b</sup>, Mengdie Yang<sup>a,b</sup>, Hairong Li<sup>a,b</sup>, Feishi Shan<sup>a,b</sup>, Yilong Chen<sup>a,b</sup>, Xue Yue<sup>a,b</sup>, Zhouyu Wang<sup>a,b</sup>, Xiaoqi Yu<sup>a,b,c</sup>

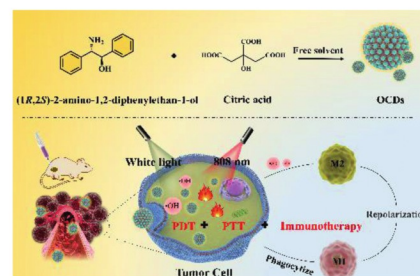
<sup>a</sup>Department of Chemistry, School of Science, Xihua University, Chengdu 610039, China

<sup>b</sup>Asymmetric Synthesis and Chiral technology Key Laboratory of Sichuan Province, Chengdu 610039, China

<sup>c</sup>Key Laboratory of Green Chemistry and Technology of Ministry of Education, College of Chemistry, Sichuan University, Chengdu 61064, China

OCDs are synthesized by citric acid and (1*R*,2*S*)-2-amino-1,2-diphenylethan-1-ol, which show aggregation-induced emission property and two-photon fluorescence imaging. Meanwhile, OCDs are ideal photosensitizers for photothermal therapy under 808 nm and Type I photodynamic therapy with white light, which exhibited synergistic trimodal therapy.

Chinese Chemical Letters 34 (2023) 108197



## Spectral and biodistributional engineering of deep near-infrared chromophore

Yan Dong<sup>a</sup>, Xicun Lu<sup>a</sup>, Yi Li<sup>a</sup>, Weichao Chen<sup>a</sup>, Lei Yin<sup>a</sup>, Jie Zhao<sup>a</sup>, Xinru Hu<sup>a</sup>, Xinran Li<sup>a</sup>, Zuhai Lei<sup>a</sup>, Yuyang Wu<sup>c</sup>, Hao Chen<sup>c</sup>, Xiao Luo<sup>a,b</sup>, Xuhong Qian<sup>a,b</sup>, Youjun Yang<sup>a</sup>

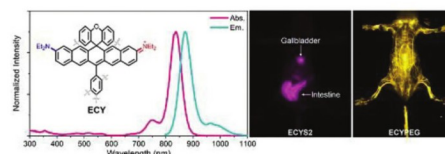
<sup>a</sup>State Key Laboratory of Bioreactor Engineering, Shanghai Key Laboratory of Chemical Biology, School of Pharmacy, East China University of Science and Technology, Shanghai 200237, China

<sup>b</sup>Shanghai Engineering Research Center of Molecular Therapeutics and New Drug Development, School of Chemistry and Molecular Engineering, East China Normal University, Shanghai 200241, China

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

ECY is a bright fluorophore absorbing at 836 nm with a quantum yield of 16% and super-photostable. Its biodistribution specificity toward liver, gallbladder, biliary duct, or intestine, have been achieved via judicious molecular engineering.

Chinese Chemical Letters 34 (2023) 108154



## Membrane-targeting amphiphilic AIE photosensitizer for broad-spectrum bacteria imaging and photodynamic killing of bacteria

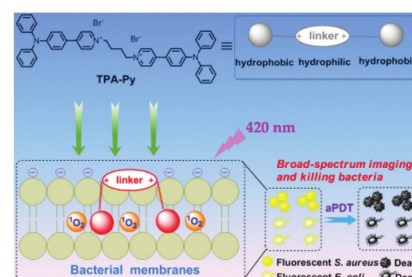
Haining Zhang<sup>a</sup>, Chaojun He<sup>a</sup>, Limin Shen<sup>a</sup>, Wenjun Tao<sup>b</sup>, Jianhui Zhu<sup>a</sup>, Jinzhao Song<sup>a</sup>, Ziyong Li<sup>a</sup>, Jun Yin<sup>b</sup>

<sup>a</sup> Luoyang Key Laboratory of Organic Functional Molecules, College of Food and Drug, Luoyang Normal University, Luoyang 471934, China

<sup>b</sup> Key Laboratory of Pesticide and Chemical Biology, Ministry of Education, Hubei International Scientific and Technological Cooperation Base of Pesticide and Green Synthesis, International Joint Research Center for Intelligent Biosensing Technology and Health, College of Chemistry, Central China Normal University, Wuhan 430079, China

The amphiphilic AIE photosensitizer with membrane-targeting capability demonstrates broad-spectrum bacterial staining and photodynamic antibacterial activity toward *S. aureus* and *E. coli*.

Chinese Chemical Letters 34 (2023) 108160



## Engineering J-aggregates for NIR-induced meso-CF<sub>3</sub>-BODIPY nanoparticles by activated apoptosis mechanism in photothermal therapy

Chujing Ye<sup>a</sup>, Shan Zhang<sup>b</sup>, Dongxiang Zhang<sup>a</sup>, Yue Shen<sup>a</sup>, Zhan Wang<sup>b</sup>, Huan Wang<sup>b</sup>, Junyi Ren<sup>b</sup>, Xin-Dong Jiang<sup>a</sup>, Jianjun Du<sup>c</sup>, Rong Shang<sup>d</sup>, Guiling Wang<sup>b</sup>

<sup>a</sup> Liaoning & Shenyang Key Laboratory of Functional Dye and Pigment, Shenyang University of Chemical Technology, Shenyang 110142, China

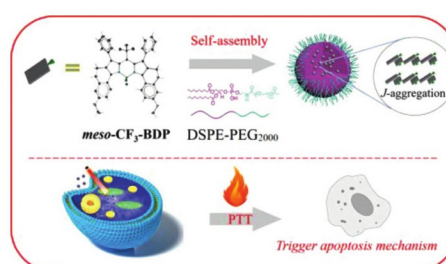
<sup>b</sup> Department of Cell Biology, China Medical University, Shenyang 110122, China

<sup>c</sup> State Key Laboratory of Fine Chemicals, Dalian University of Technology, Dalian 110624, China

<sup>d</sup> Department of Chemistry, Graduate School of Science, Hiroshima University, Higashi-Hiroshima 7398526, Japan

meso-CF<sub>3</sub>-BODIPY nanoparticles by J-aggregates enhanced photothermal conversion efficiency through the insertion of rotating segment and triggered the cancer cells apoptosis in photothermal therapy at low power laser density.

Chinese Chemical Letters 34 (2023) 108223



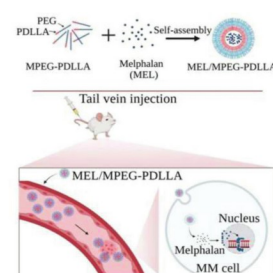
## Melphalan-loaded methoxy poly(ethylene glycol)-poly(D,L-lactide) copolymer nanomicelles in the treatment of multiple myeloma

Yingying Chen, Qiang Zeng, Bingyang Chu, Zhigang Liu, Xue Wei, Mengran Chen, Peipei Yang, Minghai Tang, Ting Niu, Yongqian Jia, Ying Qu, Zhiyong Qian

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We have successfully constructed melphalan-loaded MPEG-PDLLA nanomicelles, and demonstrated that its efficacy and safety is superior to free melphalan.

Chinese Chemical Letters 34 (2023) 108133



## High-throughput quantitative detection of triple-negative breast cancer-associated expressed miRNAs by rolling circle amplification on fluorescence-encoded microspheres

Jieyu Liu<sup>a</sup>, Liming Zhang<sup>a</sup>, Wentao Zeng<sup>a</sup>, Lihua Zhang<sup>b</sup>, Nongyue He<sup>c,d</sup>, Zhuoxuan Lu<sup>a</sup>

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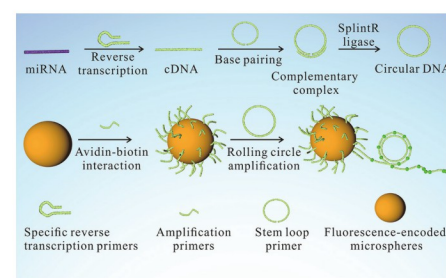
<sup>b</sup> Beadstar Biotechnology Hainan Province Co., Ltd., Haikou 570110, China

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<sup>d</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

A method for high-throughput and quantitative detection of miRNAs was established by isothermal amplification technology based on fluorescence-encoded microspheres, providing an accurate detection tool for triple-negative breast cancer associated-miRNAs detection.

Chinese Chemical Letters 34 (2023) 108141





## Copper carbonate nanoparticles as an effective biomineralized carrier to load macromolecular drugs for multimodal therapy

Liping Dong<sup>a</sup>, Jinsong Ding<sup>b</sup>, Lemei Zhu<sup>a</sup>, Yujun Liu<sup>c</sup>, Xiang Gao<sup>c</sup>, Wenhui Zhou<sup>a,b,d</sup>

<sup>a</sup> Changsha Medical University, Academician Workstation, Changsha 410219, China

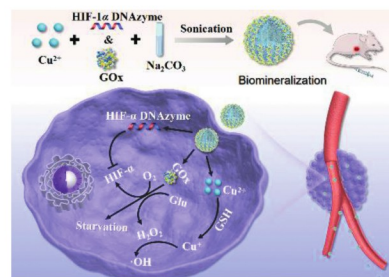
<sup>b</sup> Xiangya School of Pharmaceutical Sciences, Central South University, Changsha 410013, China

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

<sup>d</sup> Key Laboratory of Biological Nanotechnology of National Health Commission, Changsha 410000, China

Through rational metal screening, Cu<sup>2+</sup> was found to be the best candidate to biomineralize with carbonate for macromolecules loading, based on which copper carbonate nanoparticles were prepared to co-load GOx and DZ for multimodal tumor therapy.

Chinese Chemical Letters 34 (2023) 108192



## 4T1 cell membrane-derived biodegradable nanosystem for comprehensive interruption of cancer cell metabolism

Yingzi Ren<sup>a</sup>, Huaqing Jing<sup>a</sup>, Yue Zhou<sup>a</sup>, Chuchu Ren<sup>a</sup>, Guangxu Xiao<sup>c</sup>, Siyu Wang<sup>a</sup>, Xiaoyang Liang<sup>a</sup>, Yunsheng Dou<sup>a</sup>, Ziqiao Ding<sup>a</sup>, Yan Zhu<sup>c</sup>, Xinxing Wang<sup>b</sup>, Nan Li<sup>a</sup>

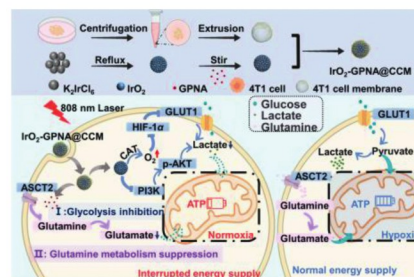
<sup>a</sup> Tianjin Key Laboratory of Drug Delivery & High-Efficiency, School of Pharmaceutical Science and Technology, Tianjin University, Tianjin 300072, China

<sup>b</sup> Tianjin Institute of Environmental and Operational Medicine, Tianjin 300050, China

<sup>c</sup> State Key Laboratory of Component-based Chinese Medicine, Tianjin University of Traditional Chinese Medicine, Tianjin 301617, China

A mimic nanosystem with antagonist L-γ-glutamyl-p-nitroanilide (GPNA) loaded and 4T1 cancer cell membrane coated iridium oxide nanoparticles (IrO<sub>2</sub>-GPNA@CCM NPs) was designed to mediate glycolysis and glutamine cycle synergistically to trigger potentiate energy blockade for anti-tumors.

Chinese Chemical Letters 34 (2023) 108161



## Size engineering of 2D MOF nanosheets for enhanced photodynamic antimicrobial therapy

Baoli Xue<sup>a,b,c</sup>, Xiwen Geng<sup>a,h</sup>, Hao hao Cui<sup>a</sup>, Huiying Chen<sup>a</sup>, Zhikang Wu<sup>d</sup>, Hong Chen<sup>c</sup>, Hai Li<sup>d</sup>, Zhan Zhou<sup>a,b</sup>, Meiting Zhao<sup>e</sup>, Chaoliang Tan<sup>f,g</sup>, Jingguo Li<sup>a</sup>

<sup>a</sup> Henan Provincial People's Hospital, People's Hospital of Zhengzhou University, Zhengzhou 450003, China

<sup>b</sup> College of Chemistry and Chemical Engineering, Henan Key Laboratory of Function-Oriented Porous Materials, Luoyang Normal University, Luoyang 471934, China

<sup>c</sup> Luoyang Key Laboratory of Organic Functional Molecules, College of Food and Drug, Luoyang Normal University, Luoyang 471934, China

<sup>d</sup> Institute of Advanced Materials (IAM) and Key Laboratory of Flexible Electronics (KLoFE), Nanjing Tech University (NanjingTech), Nanjing 211816, China

<sup>e</sup> Department of Chemistry, Institute of Molecular Aggregation Science, Tianjin Key Laboratory of Molecular Optoelectronic Sciences, Tianjin University, Tianjin 300072, China

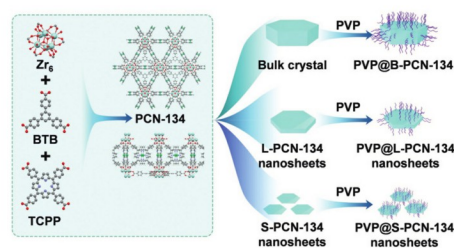
<sup>f</sup> Department of Chemistry and Center of Super-Diamond and Advanced Films (COSDAF), City University of Hong Kong, Hong Kong 999077, China

<sup>g</sup> Shenzhen Research Institute, City University of Hong Kong, Shenzhen 518057, China

<sup>h</sup> Pharmaceutical Sciences Laboratory, Åbo Akademi University, Turku 20520, Finland

We report the controlled synthesis of porphyrin-based 2D PCN-134 MOF nanosheets by a two-step solvothermal method for enhanced photodynamic antimicrobial therapy.

Chinese Chemical Letters 34 (2023) 108140



## PDLLA length on anti-breast cancer efficacy of acid-responsive self-assembling mPEG-PDLLA-docetaxel conjugates

Tao Liu<sup>a</sup>, Hui Zou<sup>a</sup>, Jingqing Mu<sup>a</sup>, Xi Zhang<sup>a</sup>, Guohua Liu<sup>a</sup>, Na Yu<sup>a</sup>, Bo Yuan<sup>b</sup>, Xiaoyong Yuan<sup>b,c,d</sup>, Xingjie Liang<sup>e</sup>, Shutao Guo<sup>a</sup>

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<sup>b</sup> School of Medicine, Nankai University, Tianjin 300071, China

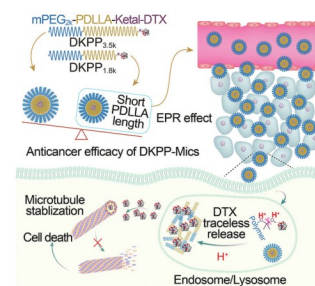
<sup>c</sup> Clinical College of Ophthalmology, Tianjin Medical University, Tianjin 300020, China

<sup>d</sup> Tianjin Key Laboratory of Ophthalmology and Visual Science, Tianjin Eye Institute, Tianjin Eye Hospital, Tianjin 300020, China

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

We constructed two self-assembling acid-responsive ketal-linked mPEG-PDLLA-docetaxel conjugates to investigate the effect of PDLLA length on the anticancer performance of self-assembled nanomedicines. The nanomedicine comprising a conjugate with a shorter PDLLA stood out and outperformed a generic clinically approved docetaxel formulation in anticancer efficacy and safety profile.

Chinese Chemical Letters 34 (2023) 108135



## NHC-gold(I)-alkyne complexes induced hepatocellular carcinoma cell death through bioorthogonal activation by palladium complex in living system

Yunlong Lu<sup>a,d</sup>, Yuanhao Liu<sup>a</sup>, Zhenlin Liang<sup>a</sup>, Xiaoyan Ma<sup>a</sup>, Lijuan Liu<sup>a</sup>, Zhenfan Wen<sup>a</sup>, Iogann Tolbatov<sup>b</sup>, Alessandro Marrone<sup>c</sup>, Wukun Liu<sup>a,d</sup>

<sup>a</sup> Jiangsu Collaborative Innovation Center of Chinese Medicinal Resources Industrialization, School of Medicine & Holistic Integrative Medicine, Nanjing University of Chinese Medicine, Nanjing 210023, China

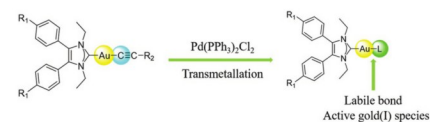
<sup>b</sup> Institute of Chemical Research of Catalonia (ICIQ), The Barcelona Institute of Science and Technology, Tarragona 43007, Spain

<sup>c</sup> Dipartimento di Farmacia, Università degli Studi "G. D'Annunzio" Chieti-Pescara, Via dei Vestini, Chieti 66100, Italy

<sup>d</sup> State key Laboratory of Coordination Chemistry, Nanjing University, Nanjing 210023, China

The Pd(PPh<sub>3</sub>)<sub>2</sub>Cl<sub>2</sub> catalyst was used as a bioorthogonal activation reagent that can transform stable organogold(I) complexes into active gold(I) species for the treatment of hepatocellular carcinoma.

Chinese Chemical Letters 34 (2023) 108413



- Low reactivity
- No catalytic activity
- Weak TrxR inhibition

- High reactivity
- Catalytically active
- Potent TrxR inhibition
- HepG2 inhibition

## HDAC6 inhibitor loaded bimetallic nanosheets with antagonizing thermoresistance for augmented mild photothermal therapy

Lingyu Qiu<sup>a,b</sup>, Shan Lei<sup>c</sup>, Jing Zhang<sup>c</sup>, Ruhan Yan<sup>c</sup>, Wansi Chen<sup>a,b</sup>, Jing Lin<sup>c</sup>, Wei-Guo Zhu<sup>a,b</sup>, Peng Huang<sup>c</sup>

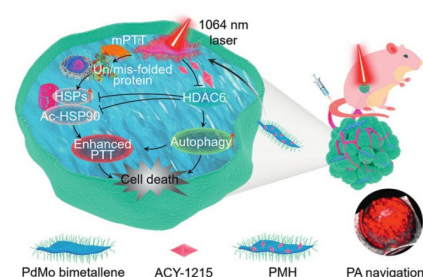
<sup>a</sup> Guangdong Key Laboratory of Genome Instability and Human Disease Prevention, Department of Biochemistry and Molecular Biology, Shenzhen University Medical School, Shenzhen 518055, China

<sup>b</sup> Base for International Science and Technology Cooperation: Carson Cancer Stem Cell Vaccines R&D Center, International Cancer Center, Shenzhen University Medical School, Shenzhen 518055, China

<sup>c</sup> Marshall Laboratory of Biomedical Engineering, International Cancer Center, Laboratory of Evolutionary Therapeutics (LET), School of Biomedical Engineering, Shenzhen University Medical School, Shenzhen 518060, China

In this work, an integrated nanoplatfrom (denoted as PMH) was developed, which contains a PdMo bimetallic nanosheet with favorable photothermal effect and photoacoustic imaging capability, and a specific histone deacetylase 6 (HDAC6) inhibitor (ACY-1215). PMH antagonizes mild photothermal therapy (mPTT)-induced thermoresistance and shows synergistic antitumor effect of mPTT both *in vitro* and *in vivo*. Mechanistically, PMH decreases the mPTT-induced un/mis-folded proteins degradation through proteasomal system. In addition, mPTT leads to autophagy system collapse by amplifying the ACY-1215-triggered autophagy process. This study develops a promising combination strategy based on mPTT for future cancer treatment.

Chinese Chemical Letters 34 (2023) 108344





## Dissolved oxygen in aeration-driven piezo-catalytic for antibiotics pollutants removal in water

Minxian Zhang<sup>b</sup>, Wanqian Guo<sup>a</sup>, Yingyin Chen<sup>b</sup>, Dechun He<sup>c</sup>, Abdulgalim B. Isaev<sup>d</sup>, Mingshan Zhu<sup>a,b</sup>

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

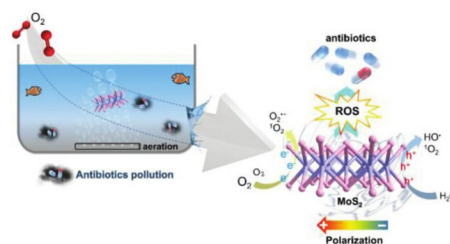
<sup>b</sup> School of Environment, Jinan University, Guangzhou 510632, China

<sup>c</sup> Research Team of Soil and Rural Eco-environment, South China Institute of Environmental Sciences, MEE, Guangzhou 510655, China

<sup>d</sup> Department of Inorganic Chemistry and Chemical Ecology, Dagestan State University, M. Gadjieva 43a, Makhachkala 367001, Russian Federation

Aeration-driven piezo-catalysis by MoS<sub>2</sub> is acted as an efficient and green technology for the degradation of antibiotics, which offers the possibility to develop novel way to achieve pollutant abatement by using turbulence driven by aeration and sufficient dissolved oxygen in the environmental remediation.

Chinese Chemical Letters 34 (2023) 108229



## Laser-ablated violet phosphorus/graphene heterojunction as ultrasensitive ppb-level room-temperature NO sensor

Xiaohui Ye<sup>a</sup>, Ming Qi<sup>a</sup>, Hao Qiang<sup>a</sup>, Mengzhen Chen<sup>a</sup>, Xi Zheng<sup>a</sup>, Mengyue Gu<sup>b</sup>, Xuewen Zhao<sup>b</sup>, Yanling Yang<sup>a</sup>, Chaozheng He<sup>c</sup>, Jinying Zhang<sup>b</sup>

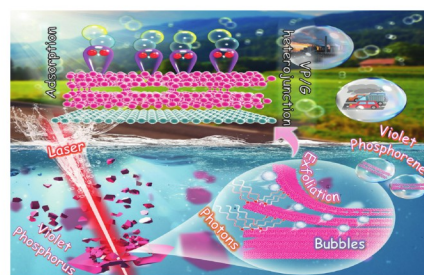
<sup>a</sup> School of Material Science and Engineering, Shaanxi University of Science and Technology, Xi'an 710021, China

<sup>b</sup> Center of Nanomaterials for Renewable Energy (CNRE), School of Electrical Engineering, Xi'an Jiaotong University, Xi'an 710049, China

<sup>c</sup> Institute of Environmental and Energy Catalysis, School of Materials Science and Chemical Engineering, Xi'an Technological University, Xi'an 710021, China

A novel 2D materials, violet phosphorus (VP) nanoflakes have been exfoliated by laser ablation. The few-layered VP nanoflakes are combined with graphene to form heterostructures, showing excellent room-temperature gas sensing performance in ppb/ppm-level.

Chinese Chemical Letters 34 (2023) 108199



## New insight into the synergy of nitrogen-related sites on biochar surface for sulfamethoxazole adsorption from water

Chuanbin Wang<sup>a</sup>, Lingchao Kong<sup>b</sup>, Yanshan Wang<sup>a</sup>, Xiaoqiang Cui<sup>a</sup>, Ning Li<sup>a,c</sup>, Beibei Yan<sup>a</sup>, Guanyi Chen<sup>a,d,e</sup>

<sup>a</sup> School of Environmental Science and Engineering/Tianjin Engineering Research Center of Bio Gas/Oil Technology, Tianjin University, Tianjin 300072, China

<sup>b</sup> School of Environmental Science & Engineering, Southern University of Science and Technology, Shenzhen 518055, China

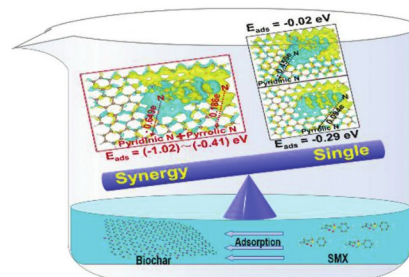
<sup>c</sup> Georgia Tech Shenzhen Institute, Tianjin University, Shenzhen 518071, China

<sup>d</sup> School of Mechanical Engineering, Tianjin University of Commerce, Tianjin 300134, China

<sup>e</sup> School of Science, Tibet University, Lhasa 850012, China

A strong synergistic effect between pyridinic N and pyrrolic N sites on surface was found for sulfamethoxazole adsorption from water.

Chinese Chemical Letters 34 (2023) 108159



## Cooperative coupling of photocatalytic production of H<sub>2</sub>O<sub>2</sub> and oxidation of organic pollutants over gadolinium ion doped WO<sub>3</sub> nanocomposite

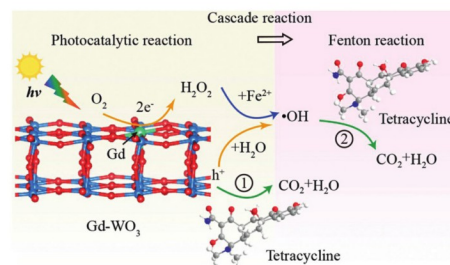
Jiaying Wang<sup>a</sup>, Jiejie Wang<sup>b</sup>, Sijin Zuo<sup>a</sup>, Jianchuan Pei<sup>b</sup>, Weiping Liu<sup>a</sup>, Juan Wang<sup>a</sup>

<sup>a</sup> Institute of Environmental Health, MOE Key Laboratory of Environmental Remediation and Ecosystem Health, College of Environment and Resources Science, Zhejiang University, Hangzhou 310058, China

<sup>b</sup> College of Environment and Resources, Zhejiang A&F University, Hangzhou 311300, China

A simultaneous photocatalytic oxidation and *in-situ* H<sub>2</sub>O<sub>2</sub> generation was reported on a lanthanide ion (Gd<sup>3+</sup>) doped WO<sub>3</sub> catalyst. Benefit from the spontaneous production of H<sub>2</sub>O<sub>2</sub>, a cascade photocatalytic oxidation-Fenton reaction which can fully utilize the photogenerated electrons and holes for efficient organic pollutants removal has been demonstrated.

Chinese Chemical Letters 34 (2023) 108157



## In-situ construction of Co(OH)<sub>2</sub> nanoparticles decorated biochar for highly efficient degradation of tetracycline hydrochloride via peracetic acid activation

Fengbin Sun<sup>a,b</sup>, Xudong Yang<sup>c</sup>, Feng Shao<sup>d</sup>, Fan Li<sup>c</sup>, Zhicheng Pan<sup>e</sup>, Lin Qiao<sup>a</sup>, Ziniu Xiao<sup>b</sup>, Wen Liu<sup>c</sup>

<sup>a</sup>Institute of Urban Meteorology, China Meteorological Administration, Beijing 100089, China

<sup>b</sup>State Key Laboratory of Numerical Modeling for Atmospheric Sciences and Geophysical Fluid Dynamics, Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing 100029, China

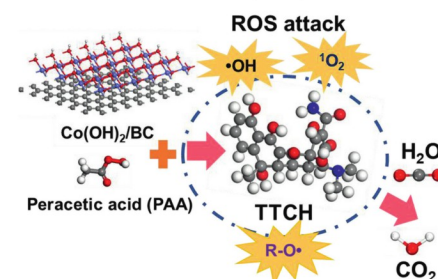
<sup>c</sup>The Key Laboratory of Water and Sediment Sciences, Ministry of Education, College of Environmental Sciences and Engineering, Peking University, Beijing 100871, China

<sup>d</sup>College of Landscape Architecture, Zhejiang Agriculture and Forestry University, Hangzhou 311300, China

<sup>e</sup>Water Safety and Water Pollution Control Engineering Technology Research Center in Sichuan Province, Haitian Water Group, Chengdu 610299, China

In-situ construction of Co(OH)<sub>2</sub> nanoparticles decorated biochar exhibits high activation efficiency of peracetic acid (CH<sub>3</sub>C(O)OOH, PAA) for efficient tetracycline hydrochloride (TTCH) degradation.

Chinese Chemical Letters 34 (2023) 108563



## Synthesis and modification of spherical/hollow metal-organic frameworks for efficient extraction of sulfonamides in aqueous environments

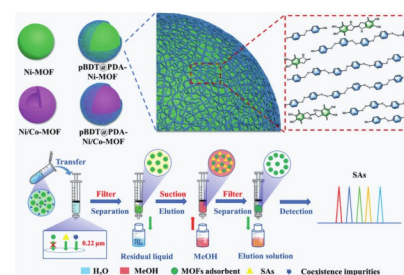
Yongxing Sun<sup>a,b</sup>, Kaijun Quan<sup>b</sup>, Jia Chen<sup>b</sup>, Hui Li<sup>b</sup>, Xin Li<sup>b</sup>, Zuguang Li<sup>a</sup>, Hongdeng Qiu<sup>b</sup>

<sup>a</sup>College of Chemical Engineering, Zhejiang University of Technology, Hangzhou 310014, China

<sup>b</sup>CAS Key Laboratory of Chemistry of Northwestern Plant Resources and Key Laboratory for Natural Medicine of Gansu Province, Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, Lanzhou 730000, China

The spherical/hollow spherical metal-organic framework materials were modulated and synthesized, and were functionally modified by polymer modification strategy. Owing to the regular morphology & size and desirable sorption properties, they can be employed as solid-phase sorbents for the sorptive extraction of SAs.

Chinese Chemical Letters 34 (2023) 108166



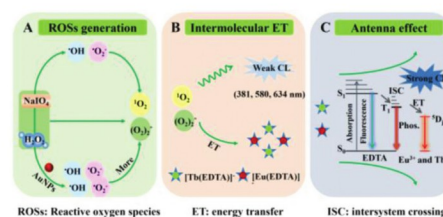
## Rare earth complexes chemiluminescence catalyzed by gold nanoparticles for fast sensing of Tb<sup>3+</sup> and Eu<sup>3+</sup>

Jiajia Yuan, Xiaoya Fan, Jiacheng Yang, Xinfeng Zhang

State Key Lab of Geohazard Prevention & Geoenvironment Protection, College of Materials and Chemistry & Chemical Engineering, Chengdu University of Technology, Chengdu 610059, China

The <sup>1</sup>O<sub>2</sub> generated from AuNPs-catalyzed NaIO<sub>4</sub>-H<sub>2</sub>O<sub>2</sub> CL system can transfer its energy to the complex of Tb<sup>3+</sup>/Eu<sup>3+</sup>-EDTA with the characteristic emissions of Tb<sup>3+</sup> and Eu<sup>3+</sup>.

Chinese Chemical Letters 34 (2023) 108155



## Novel computer-assisted approach to quick prediction and optimization of gradient separation for online enrichment-reversed phase liquid chromatography tandem system

Shuying Han<sup>a,c</sup>, Yilin Song<sup>a</sup>, Xinyi Jiang<sup>a</sup>, Junqin Qiao<sup>b</sup>, An Kang<sup>a</sup>, Haishan Deng<sup>a</sup>, Dong Zhu<sup>a</sup>, Rui Liu<sup>a,c</sup>, Hongzhen Lian<sup>b</sup>

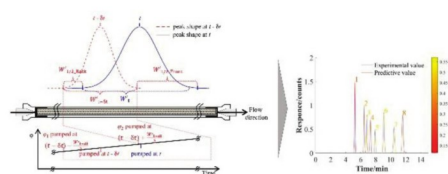
<sup>a</sup>College of Pharmacy, Nanjing University of Chinese Medicine, Nanjing 210023, China

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

<sup>c</sup>Jiangsu Collaborative Innovation Center of Chinese Medicinal Resources Industrialization, National and Local Collaborative Engineering Center of Chinese Medicinal Resources Industrialization and Formulae Innovative Medicine, Nanjing 210023, China

An algorithm as well as a homemade user-friendly software capable of predicting and optimizing the gradient separation of LC × LC system was developed in this work, which may supply great opportunities for the convenient method development in analysis of trace structural analogues in environmental, food and biological samples.

Chinese Chemical Letters 34 (2023) 108139





## Folic acid-based supramolecules for enhanced stability in potassium ion batteries

Yanan Wang<sup>a,b</sup>, Dandan Ouyang<sup>a</sup>, Liuqian Yang<sup>a,b</sup>, Chunyan Wang<sup>a,b</sup>, Jian Sun<sup>c</sup>, Hui Zhu<sup>a</sup>, Jiao Yin<sup>a</sup>

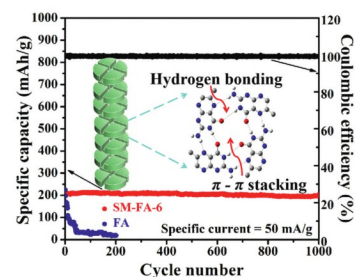
<sup>a</sup>Laboratory of Environmental Sciences and Technology, Xinjiang Technical Institute of Physics & Chemistry, and Key Laboratory of Functional Materials and Devices for Special Environments, Chinese Academy of Sciences, Urumqi 830000, China

<sup>b</sup>Center of Materials Science and Optoelectronics Engineering, University of Chinese Academy of Sciences, Beijing 100049, China

<sup>c</sup>Changchun Institute of Applied Chemistry, Chinese Academy of Science, Changchun 130022, China

Integrating the multi-sites hydrogen bonds and the circular  $\pi$ - $\pi$  stacking interaction, folic acid (FA) based supramolecules have been successfully assembled by the precise control of the solvent ratio of the reaction system, thus enhanced stability for potassium-ion storage.

Chinese Chemical Letters 34 (2023) 108095



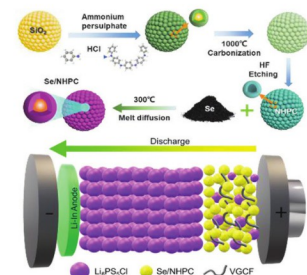
## Advanced all-solid-state lithium-selenium batteries enabled by selenium-nitrogen doped hierarchic meso-microporous carbon nanospheres composite cathode

Chongxing Li, Renbo Liu, Shuxian Zhang, Qingyu Li, Cong Wang, Zhiwei Zhang, Chengxiang Wang, Longwei Yin, Rutao Wang

Key Laboratory for Liquid-Solid Structural Evolution and Processing of Materials, Ministry of Education, School of Materials Science and Engineering, Shandong University, Ji'nan 250061, China

Se-infused nitrogen-doped hierarchical meso-microporous carbon composites with a high mass loading of 81% are prepared by a melt-diffusion process, which deliver a highly reversible capacity of 621 mAh/g and a good rate capability in an all-solid-state battery system. Additionally, the underlying mechanism of electrochemical reaction between Se molecules and Li under a solid-state electrolyte system is elucidated.

Chinese Chemical Letters 34 (2023) 108083



## In-situ polymerized carbonate induced by Li-Ga alloy as novel artificial interphase on Li metal anode

Ziping Wang<sup>a</sup>, Shuyuan Xie<sup>a</sup>, Xuejie Gao<sup>b</sup>, Xinyang Chen<sup>b</sup>, Lina Cong<sup>a</sup>, Jun Liu<sup>a</sup>, Haiming Xie<sup>a</sup>, Chuang Yu<sup>c</sup>, Yulong Liu<sup>a</sup>

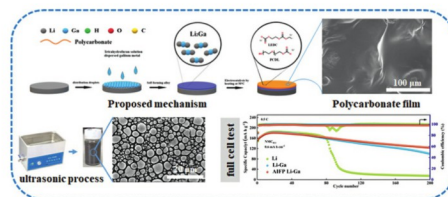
<sup>a</sup>School of Chemistry, Northeast Normal University, Changchun 130024, China

<sup>b</sup>Center for Lignocellulosic Chemistry and Biomaterials, College of Light Industry and Chemical Engineering, Dalian Polytechnic University, Dalian 116034, China

<sup>c</sup>State Key Laboratory of Advanced Electromagnetic Engineering and Technology, School of Electrical and Electronic Engineering, Huazhong University of Science and Technology, Wuhan 430074, China

The metal lithium surface is constructed with alloy/organic double-layer structure SEI, which can significantly inhibit lithium dendrite formation and improve cycling performance.

Chinese Chemical Letters 34 (2023) 108151



## Optimizing the electronic structure of Fe-doped Co<sub>3</sub>O<sub>4</sub> supported Ru catalyst via metal-support interaction boosting oxygen evolution reaction and hydrogen evolution reaction

Li Gao<sup>a,b,c</sup>, Xia Zhong<sup>a,b</sup>, Junnan Chen<sup>a,b</sup>, Ying Zhang<sup>a,d</sup>, Jie Liu<sup>a,e</sup>, Bingsen Zhang<sup>a,b</sup>

<sup>a</sup>Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, Shenyang 110016, China

<sup>b</sup>School of Materials Science and Engineering, University of Science and Technology of China, Shenyang 110016, China

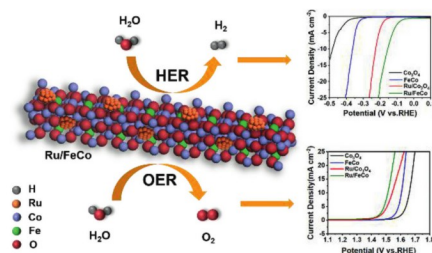
<sup>c</sup>Nano Science and Technology Institute, University of Science and Technology of China, Suzhou 215123, China

<sup>d</sup>School of Petrochemical Engineering, Liaoning Petrochemical University, Fushun 113001, China

<sup>e</sup>Department of Chemistry, College of Science, Northeastern University, Shenyang 110819, China

The optimized Ru/FeCo catalyst with abundant metal-support interactions is developed as a bifunctional electrocatalyst for efficient water splitting.

Chinese Chemical Letters 34 (2023) 108085



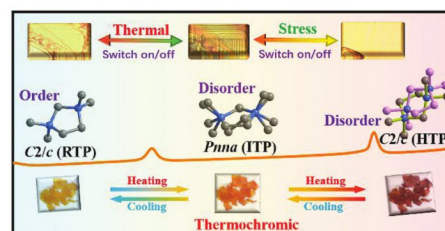
## An organic-inorganic hybrid thermochromic ferroelastic with multi-channel switches

Yipiao Zeng, Junchao Liu, Lin Zhou, Xin Deng, Wenli Yang, Xin Yan, Yanling Luo, Xuan Zhu, Xiaoyun Huang, Xianjiang Song, Yuanyuan Tang

Ordered Matter Science Research Center and School of Chemistry and Chemical Engineering, Nanchang University, Nanchang 330031, China

[TMIm][CuCl<sub>4</sub>] is an organic-inorganic hybrid thermochromic ferroelastic crystal with intriguing ferroelastic-paraelastic-ferroelastic phase transition, whose ferroelastic domains can be switched under both thermal and stress stimuli.

Chinese Chemical Letters 34 (2023) 10812708127



## Morphological and heterojunctional engineering of two-dimensional porous Mo-Ni based catalysts for highly effective catalytic reduction of aromatic nitro compounds

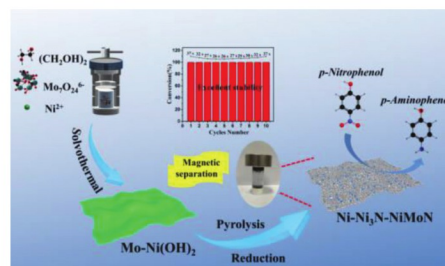
Zexu Fang<sup>a</sup>, Ying Gu<sup>a</sup>, Xinran Dong<sup>a</sup>, Gen Zhang<sup>a</sup>, Lin Li<sup>a</sup>, Xiaoguang Zhou<sup>a</sup>, Chungui Tian<sup>b</sup>

<sup>a</sup> College of Chemistry, Chemical Engineering and Resource Utilization, Northeast Forestry University, Harbin 150040, China

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The two-dimensional porous Ni-Ni<sub>3</sub>N-MoNiN heterojunction was prepared by two-step pyrolysis of the hydrothermal synthesized Mo-Ni(OH)<sub>2</sub> precursor. Due to the electronic coordination between the Mo and Ni components and the 2D porous structure, the catalyst exhibits excellent catalytic activity and stability towards aromatic nitro compounds, and can also be magnetically separated to avoid unnecessary harm to the environment.

Chinese Chemical Letters 34 (2023) 108128



## A chiral SrSi<sub>2</sub> (srs) superstructure constructed by a dual interaction system showing isotropic electrical conductivity

Jin Liu<sup>a,b,c</sup>, Zi-Xiu Lu<sup>a,c</sup>, Fa-Fa Wu<sup>d</sup>, Guo-Ling Li<sup>a,c</sup>, Bin Wang<sup>a,c</sup>, Xue-Li Cao<sup>a,c</sup>, Wei Wang<sup>a,c</sup>, Zhu Zhuo<sup>a,c</sup>, Qiao-Hong Li<sup>d</sup>, You-Gui Huang<sup>a,c,e</sup>

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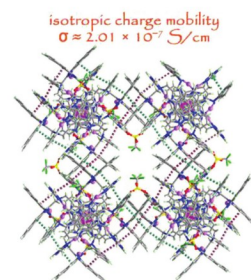
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<sup>d</sup> State Key Laboratory of Structure Chemistry, Fujian Institute of Research on the Structure of Matter, Chinese Academy of Sciences, Fuzhou 350002, China

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

Assisted by intermolecular  $\pi \cdots \pi$  interaction and hydrogen bonding, a chiral SrSi<sub>2</sub> (srs) superstructure featuring  $\pi$ -stacked helical columns along all of the three Cartesian coordinates has been constructed. The synthetic cubic structure exhibits isotropic charge transport with the conductivity ( $\sigma$ ) of  $2.1 \times 10^{-7}$  S/cm.

Chinese Chemical Letters 34 (2023) 108100



## Using silk-derived magnetic carbon nanocomposites as highly efficient Nanozymes and electromagnetic absorbing agents

Hao Wang<sup>a</sup>, Xianhui Zhang<sup>b</sup>, Yonghua Tang<sup>a</sup>, Weifeng Rong<sup>c</sup>, Jiachen Zhao<sup>a</sup>, Chaoyu Fan<sup>a</sup>, Zhisen Zhang<sup>a</sup>, Zhijun Sun<sup>a</sup>, Yun Yang<sup>a</sup>, Youhui Lin<sup>a</sup>

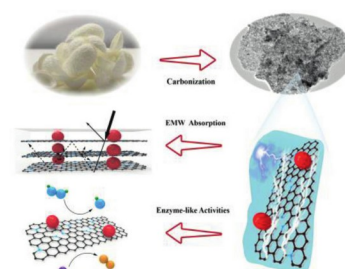
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A novel nitrogen and iron co-doped porous graphene-like carbon nanosheets (Fe-N-CNS) are constructed, which can serve as a dual-functional material for tackling the aggravating environmental pollution issues of dyes and electromagnetic waves.

Chinese Chemical Letters 34 (2023) 108084





## Induction heating enables efficient heterogeneous catalytic reactions over superparamagnetic nanocatalysts

Chao Huang<sup>a</sup>, Yu Wang<sup>b</sup>, Rui Zhong<sup>b</sup>, Zhenkun Sun<sup>a</sup>, Yonghui Deng<sup>c</sup>, Lunbo Duan<sup>a</sup>

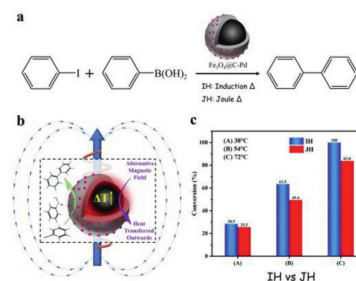
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<sup>c</sup> Department of Chemistry, State Key Laboratory of Molecular Engineering of Polymers, Fudan University, Shanghai 200433, China

Induction heating as a unique and effective heating method has been adopted in enhancing the performance of heterogeneous liquid-solid catalysis, which is able to improve the conversion of reactant and lower the temperature of reaction media by using an inductive catalyst.

Chinese Chemical Letters 34 (2023) 108101



## Super-Grignard reagents (R<sub>2</sub>Mg·LiCl) mediated covalent-anionic-radical polymerization capable of low Đ and reactive hydrogen compatibility

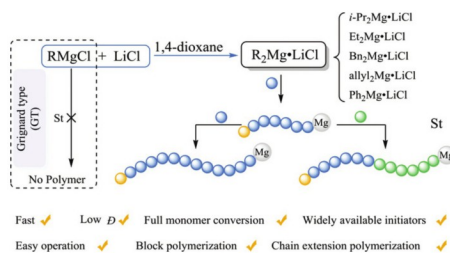
Min Su<sup>a,b</sup>, Meng-Qin Pu<sup>a</sup>, Hang Xiao<sup>a</sup>, Yu-Jiao Chen<sup>a</sup>, Wen-Ming Wan<sup>a,b</sup>

<sup>a</sup> Key Laboratory of Coal to Ethylene Glycol and Its Related Technology, State Key Laboratory of Structural Chemistry, Center for Excellence in Molecular Synthesis, 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

A universal polymerization method capable of low molecular weight distribution and reactive hydrogen compatibility is demonstrated by using a variety of super-Grignard reagents (R<sub>2</sub>Mg·LiCl) as initiator under mild conditions with full monomer conversion. By this method, chain extension polymerization and block copolymerization are achieved and demonstrate the livingness of chain propagation, enabling the facile synthesis of well-defined macromolecular architectures.

Chinese Chemical Letters 34 (2023) 108167



## Carbon dots and polyurethane composite for photo-induced elimination of uranium under air atmosphere

Zhe Wang<sup>a</sup>, Lingyu Zhang<sup>a</sup>, Zhen Lei<sup>a</sup>, Liyuan Zheng<sup>a</sup>, Liqin Huang<sup>b</sup>, Shuang Liu<sup>b,c</sup>, Yuexiang Lu<sup>b</sup>

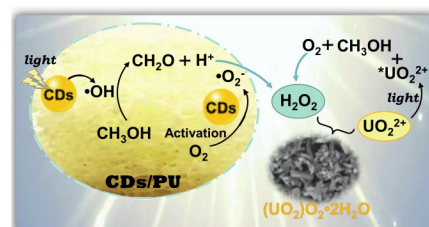
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CDs/PU composite was prepared for easy separation from water and it could enhance the evolution of H<sub>2</sub>O<sub>2</sub>, which could react with uranium to form solid precipitates, thus to realize the high efficiency and selective removal of uranium from water.

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