

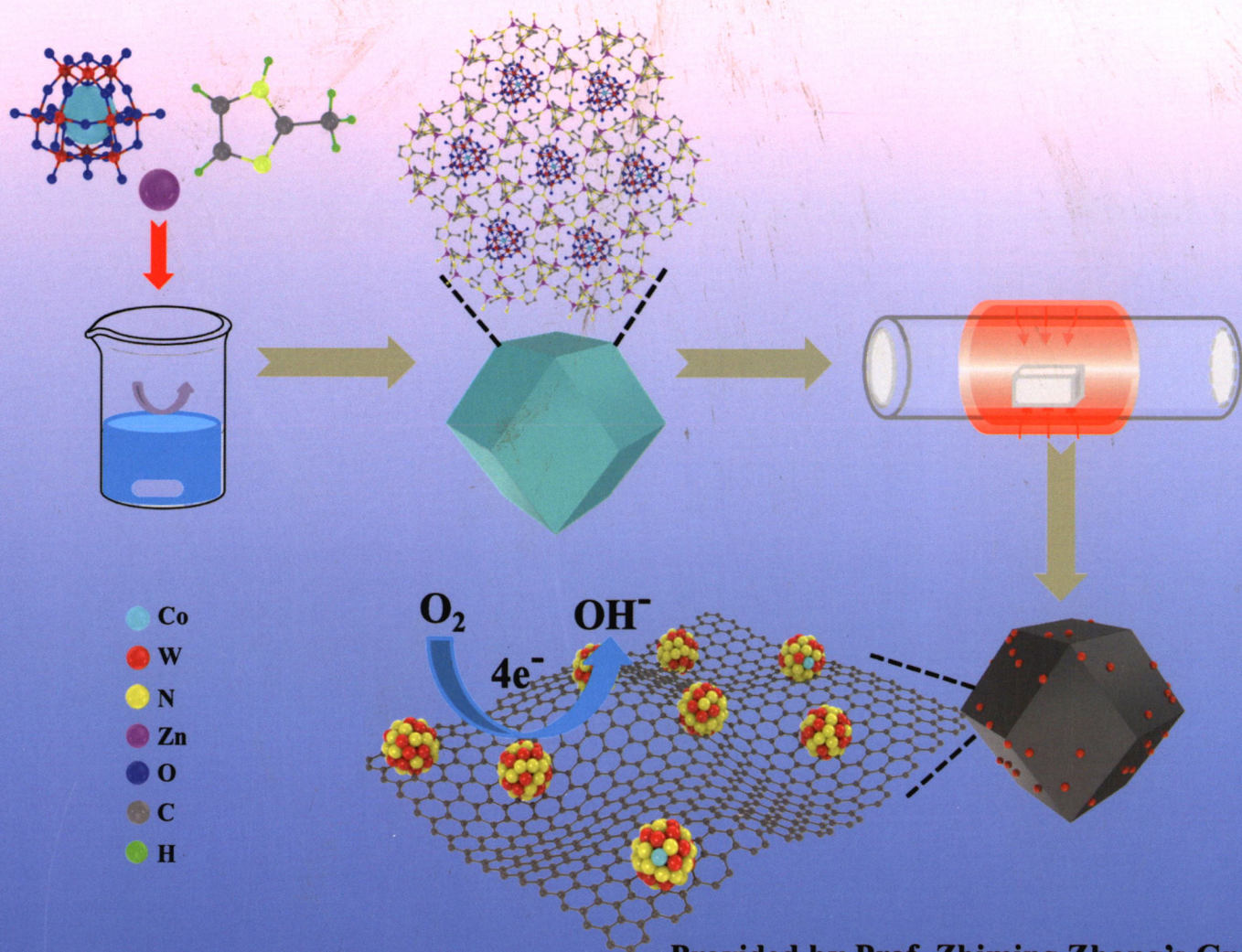
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REVIEW

Guoping Li, Siyu Lu et al.
Advances, opportunities, and challenge
for full-color emissive carbon dots

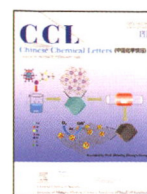
COMMUNICATION

Hualin Jiang, Lin Fang, Jian-Ping Zou et al.
Oxygen-vacancy-rich phenanthroline/TiO₂
nanocomposites: An integrated adsorption,
detection and photocatalytic material for
complex pollutants remediation

Chinese Chemical Society

Institute of Materia Medica, Chinese Academy of Medical Sciences

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Graphical Abstracts/Chin Chem Lett 33 (2022) iii–xxv

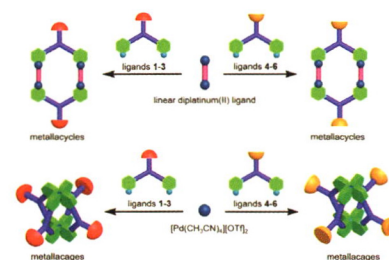
Comment

Comment on “Acid-induced tunable white light emission based on triphenylamine derivatives”

Hongyu Lin^a, Zhaochao Xu^b^aShanghai Key Laboratory of Green Chemistry and Chemical Processes, School of Chemistry and Molecular Engineering, East China Normal University, Shanghai 200062, China^bCAS Key Laboratory of Separation Science for Analytical Chemistry, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian 116023, China

We comment the recent paper which reported a series of TPA derivatives to show acid-induced tunable white light emission.

Chinese Chemical Letters 33 (2022) 573



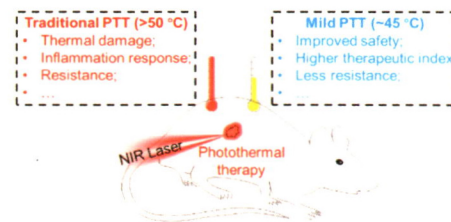
Reviews

Strategies for efficient photothermal therapy at mild temperatures: Progresses and challenges

Peng Gao^a, Hui Wang^a, Yiyun Cheng^{a,b}^aSouth China Advanced Institute for Soft Matter Science and Technology, School of Molecular Science and Engineering, South China University of Technology, Guangzhou 510640, China^bShanghai Key Laboratory of Regulatory Biology, School of Life Sciences, East China Normal University, Shanghai 200241, China

This review systematically summarized the established strategies toward efficient photothermal therapy under mild hyperthermia. Diverse photothermal agents were discussed, and the tactics including organelle-targeting, autophagy regulation, gas sensitization, heat shock protein inhibition, and the combination with chemotherapy, photodynamic therapy, chemodynamic therapy, radiotherapy, starvation therapy, immunotherapy as well as multimodal therapy were highlighted. The current limitations and the potential future directions for low temperature photothermal therapy were also pointed out.

Chinese Chemical Letters 33 (2022) 575

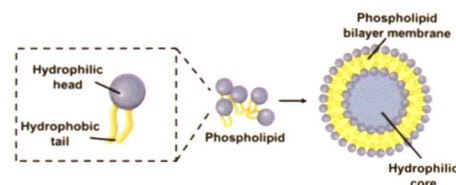


Liposome-based delivery of biological drugs

Kosheli Thapa Magar^a, George Frimpong Boafo^a, Xiaotong Li^a, Zhongjian Chen^b, Wei He^{b,a}^aDepartment of Pharmaceutics, School of Pharmacy, China Pharmaceutical University, Nanjing 211198, China^bShanghai Skin Disease Hospital, Tongji University School of Medicine, Shanghai 200443, China

Liposomes recently have received increasing attention to deliver biologicals due to their tremendous advantages. Recent research progress on the liposome-based delivery of biologicals and its challenges are briefly described in this review.

Chinese Chemical Letters 33 (2022) 587



Macrophage-targeted nanomedicine for chronic diseases immunotherapy

Yuejia Song^a, Yaqian Huang^a, Fang Zhou^c, Jinsong Ding^a, Wenhui Zhou^{a,b}

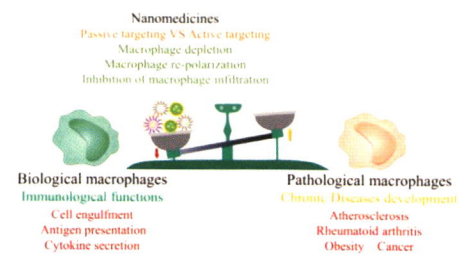
^aXiangya School of Pharmaceutical Sciences, Central South University, Changsha 410013, China

^bAcademician Workstation, Changsha Medical University, Changsha 410219, China

^cDepartment of Pharmacy, Southern University of Science and Technology Hospital, Shenzhen 518055, China

Recent progress of macrophage-targeted nanomedicine for chronic diseases immunotherapy has been reviewed, and various macrophage-regulating strategies are introduced, such as macrophage depletion, macrophage re-polarization, and the inhibition of macrophage infiltration.

Chinese Chemical Letters 33 (2022) 597



Advances, opportunities, and challenge for full-color emissive carbon dots

Xin Yang^a, Xue Li^c, Boyang Wang^a, Lin Ai^a, Guoping Li^a, Bai Yang^d, Siyu Lu^{a,b}

^aGreen Catalysis Center, and College of Chemistry, Zhengzhou University, Zhengzhou 450001, China

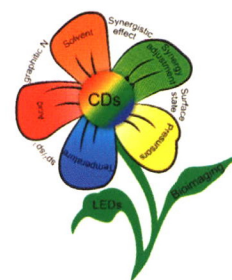
^bState Key Laboratory of Bio-Fibers and Eco-Textiles, Qingdao University, Qingdao 132101, China

^cState Key Laboratory of Superhard Materials, College of Physics, Jilin University, Changchun 130012, China

^dState Key Lab of Supramolecular Structure and Materials, College of Chemistry, Jilin University, Changchun 130012, China

Full-color CDs is very important for the study of fluorescence mechanism and multi applications. Although there are more and more reports on full-spectrum CDs at present, a review to give more comprehensive summary and outlook is urgently needed. Therefore, this article provides exhaustive discussions about the current full-color CDs development and research.

Chinese Chemical Letters 33 (2022) 613



Fluorine-containing agrochemicals in the last decade and approaches for fluorine incorporation

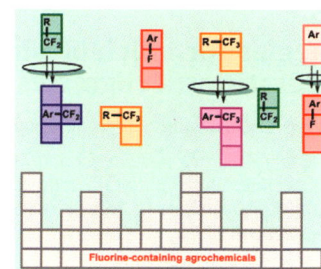
Qiang Wang^{a,b}, Hongjian Song^a, Qingmin Wang^a

^aState Key Laboratory of Elemento-Organic Chemistry, Research Institute of Elemento-Organic Chemistry, College of Chemistry, Frontiers Science Center for New Organic Matter, Nankai University, Tianjin 300071, China

^bDepartment of Organic Chemistry, Stockholm University, SE-106 91 Stockholm, Sweden

The methodologies for fluorine incorporation of 40 fluorine-containing agrochemicals that received an international standardization organization (ISO) name during the last decade are described. The review shows the type and scope of fluorine-containing building blocks and small molecules used for the synthesis of latest agrochemicals, as well as how exactly they have been introduced.

Chinese Chemical Letters 33 (2022) 626



Critical review of perovskites-based advanced oxidation processes for wastewater treatment: Operational parameters, reaction mechanisms, and prospects

Ruicheng Ji^a, Jiabin Chen^a, Tongcai Liu^a, Xuefei Zhou^{a,b,c}, Yalei Zhang^{a,c}

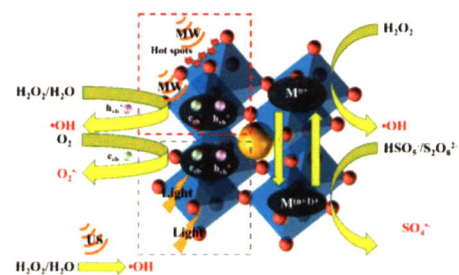
^aState Key Laboratory of Pollution Control and Resources Reuse, College of Environmental Science and Engineering, Tongji University, Shanghai 200092, China

^bKey Laboratory of Yangtze Water Environment for Ministry of Education, College of Environmental Science and Engineering, Tongji University, Shanghai 200092, China

^cShanghai Institute of Pollution Control and Ecological Security, Tongji University, Shanghai 200092, China

Perovskite-based advanced oxidation processes have proven to be a promising method in wastewater treatment. In this review article, the recent application of perovskites as heterogeneous catalysts and corresponding catalytic activity are summarized; the influencing factors and activation mechanisms of reaction are systematically reviewed.

Chinese Chemical Letters 33 (2022) 643



Recent advances and trends of heterogeneous electro-Fenton process for wastewater treatment-review

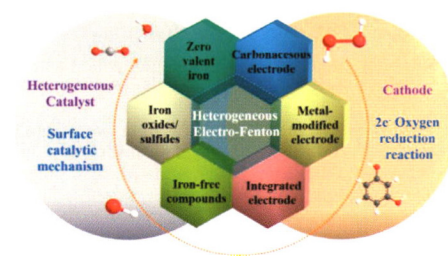
Zining Wang^a, Mingyue Liu^a, Fan Xiao^a, Georgeta Postole^b, Hongying Zhao^a, Guohua Zhao^a

^aSchool of Chemical Science and Engineering, and Shanghai Key lab of Chemical Assessment and Sustainability, Tongji University, Shanghai 200092, China

^bUniv Lyon, Université Claude Bernard Lyon 1, CNRS, IRCELYON, F-69626 Villeurbanne, France

This manuscript reviewed the recent advances and achievements in heterogeneous electro-Fenton and their applications in the remediation of emerging contaminants.

Chinese Chemical Letters 33 (2022) 653



Carbon-based single atom catalyst: Synthesis, characterization, DFT calculations

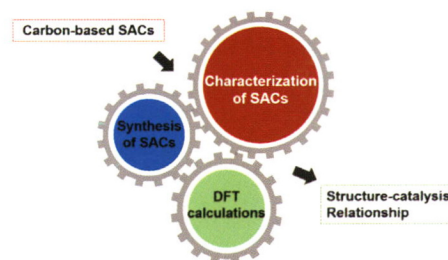
Yanan Shang^a, Xiaoguang Duan^b, Shaobin Wang^b, Qinyan Yue^a, Baoyu Gao^a, Xing Xu^a

^aShandong Key Laboratory of Water Pollution Control and Resource Reuse, School of Environmental Science and Engineering, Shandong University, Ji'nan 250100, China

^bSchool of Chemical Engineering and Advanced Materials, The University of Adelaide, Adelaide, SA 5005, Australia

Understanding the coordination configurations and electronic features of the SACs help to understand their structure-catalysis relationship in targeted reactions at the atomic scale.

Chinese Chemical Letters 33 (2022) 663



Cathode infiltration with enhanced catalytic activity and durability for intermediate-temperature solid oxide fuel cells

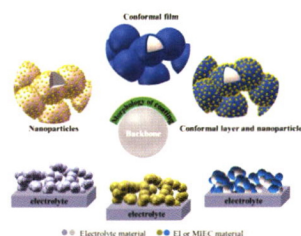
Yinghua Niu^a, Weirong Huo^a, Yuandong Yu^a, Wenjun Li^a, Yulin Chen^b, Weiqiang Lv^a

^aYangtze Delta Region Institute (Huzhou) & School of Physics & School of Materials and Energy, University of Electronic Science and Technology of China, Huzhou 313001, China

^bSchool of Materials Science and Engineering, Tianjin University of Technology, Tianjin 300384, China

Infiltrating catalysts on backbones can efficiently construct highly ORR-active and durable cathodes for intermediate solid oxide fuel cells. In this mini-review, the types of backbones and coatings for cathode infiltration have been overviewed to highlight the advantages of the infiltration method and the material/structure optimization strategy for high-performance IT-SOFC cathodes.

Chinese Chemical Letters 33 (2022) 674



Bifunctional carbon-based cathode catalysts for zinc-air battery: A review

Huimin Liu^a, Qinglei Liu^a, Yarong Wang^a, Yongfei Wang^{a,b}, Shulei Chou^c, Zhizhi Hu^a, Zhiqiang Zhang^a

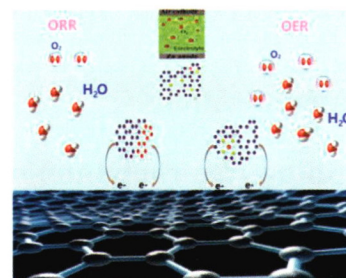
^aKey Laboratory for Functional Material School of Chemical Engineering, University of Science and Technology Liaoning, Anshan 114051, China

^bSchool of Materials and Metallurgy, University of Science and Technology Liaoning, Anshan 114051, China

^cInstitute for Carbon Neutralization, College of Chemistry and Materials Engineering, Wenzhou University, Wenzhou 325035, China

Carbon-based materials, including defect engineering, heteroatom doping, and metal doping, are considered a promising alternative in the field of commercial zinc-air battery cathode catalysts.

Chinese Chemical Letters 33 (2022) 683



Two-dimensional metal-organic framework nanosheet composites: preparations and applications

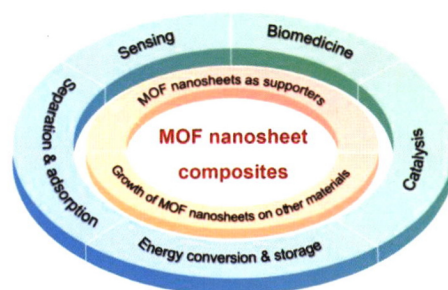
Yutian Qin^{a,b}, Yue Wan^b, Jun Guo^a, Meiting Zhao^b

^aSchool of Chemistry, Tiangong University, Tianjin 300387, China

^bTianjin Key Laboratory of Molecular Optoelectronic Sciences, Department of Chemistry, Institute of Molecular Aggregation Science, Tianjin University, Tianjin 300072, China

The methods for integrating MOF nanosheets with other materials to assemble multifunctional composites are introduced, and the applications of MOF nanosheet composites in versatile fields are summarized.

Chinese Chemical Letters 33 (2022) 693



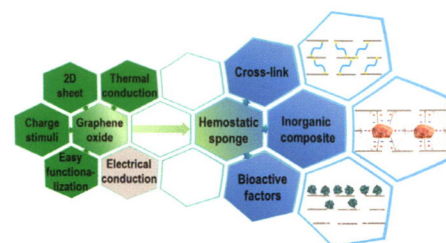
Graphene-based hemostatic sponge

Bingxin Wu, Fanglin Du, Wenjing A, Guofeng Li, Xing Wang

State Key Laboratory of Organic-Inorganic Composites, Beijing Laboratory of Biomedical Materials, Beijing University of Chemical Technology, Beijing 100029, China

Graphene oxide is an excellent material with 2D sheet structure, charge stimuli, easy functionalization, electrical conduction and thermal conduction properties, which shows great potential in the field of hemostasis. This article reviews the research progress of graphene-based hemostatic sponges from three different preparation strategies (organic cross-linking, inorganic compounding and adding bioactive factor), and prospects the development of graphene-based sponges.

Chinese Chemical Letters 33 (2022) 703



Nanosized zinc oxides-based materials for electrochemical energy storage and conversion: Batteries and supercapacitors

Tingting Wei^a, Nan Zhang^{a,c}, Yurui Ji^{a,c}, Junhong Zhang^b, Yanrong Zhu^{a,c}, Tingfeng Yi^{a,c,d}

^a School of Materials Science and Engineering, Northeastern University, Shenyang 110819, China

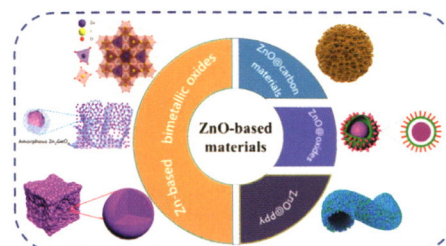
^b Shandong Provincial Key Laboratory of Chemical Energy Storage and Novel Cell Technology, College of Chemistry and Chemical Engineering, Liaocheng University, Liaocheng 252059, China

^c School of Resources and Materials, Northeastern University at Qinhuangdao, Qinhuangdao 066004, China

^d Key Laboratory of Dielectric and Electrolyte Functional Material Hebei Province, Qinhuangdao 066004, China

The prepared process, reaction mechanism and electrochemical performance and research development of zinc oxides-based nanomaterials are comprehensively reviewed.

Chinese Chemical Letters 33 (2022) 714



Methods of improving the initial Coulombic efficiency and rate performance of both anode and cathode materials for sodium-ion batteries

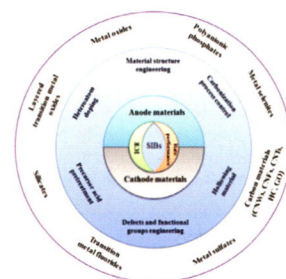
Nkongolo Tshamala Aristote^a, Kangyu Zou^a, Andi Di^b, Wentao Deng^a, Baowei Wang^a, Xinglan Deng^a, Hongshuai Hou^a, Guoqiang Zou^a, Xiaobo Ji^a

^a College of Chemistry and Chemical Engineering, Central South University, Changsha 410083, China

^b Department of Materials and Environmental Chemistry, Stockholm University, Stockholm 10691, Sweden

To improve the initial coulombic efficiency (ICE) and the rate performance of the sodium-ion batteries (SIBs), some methods are discussed in the present work, following recent advancements, regarding the electrode materials (anode and cathode). The methods such as material structure modification, surface engineering, heteroatom doping, material alloying, co-precipitation, have been found to be effective to solve the problem of low ICE and rate performance of the SIBs.

Chinese Chemical Letters 33 (2022) 730



Communications

Washing-free chemiluminescence immunoassay for rapid detection of cardiac troponin I in whole blood samples

Huan Zhao^{a,b}, Enben Su^{a,b}, Li Huang^{a,b}, Yunfeng Zai^{a,b}, Yuan Liu^a, Zhu Chen^c, Song Li^c, Lian Jin^{a,c}, Yan Deng^c, Nongyue He^{a,c}

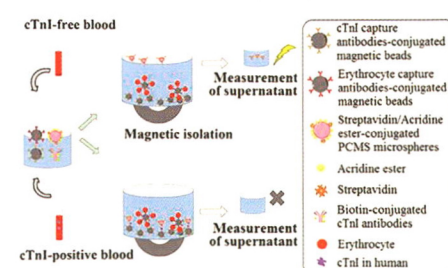
^a State Key Laboratory of Bioelectronics, National Demonstration Center for Experimental Biomedical Engineering Education, School of Biological Science and Medical Engineering, Southeast University, Nanjing 210096, China

^b Getein Biotechnology Co., Ltd., Nanjing 210000, China

^c Hunan Key Laboratory of Biomedical Nanomaterials and Devices, Hunan University of Technology, Zhuzhou 412007, China

A washing-free and rapid sandwich-type chemiluminescence immunoassay (CLIA) based on cTnI/erythrocyte antibodies-conjugated magnetic nanoparticles and streptavidin/acridine ester-conjugated PCMS was developed for the clinical determination of cardiac troponin I (cTnI) in human whole blood.

Chinese Chemical Letters 33 (2022) 743



Allosteric conformational changes of G proteins upon its interaction with membrane and GPCR

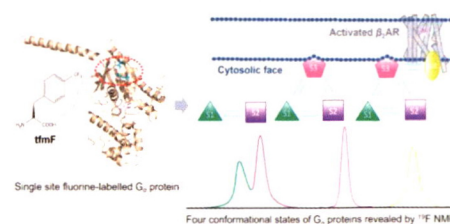
Longmei Li^{a,b}, Jin Zhang^a, Wenjing Sun^a, Weimin Gong^a, Changlin Tian^a, Pan Shi^a, Chaowei Shi^a

^aHefei National Laboratory of Physical Science at Microscale and School of Life Sciences, University of Science and Technology of China, Hefei 230027, China

^bDepartment of Chemical Physics at School of Chemistry and Materials Sciences, University of Science and Technology of China, Hefei 230027, China

¹⁹F solution nuclear magnetic resonance (NMR) spectroscopy was applied to monitor the conformational dynamic changes of G protein upon interact with detergent mimicking membrane and β_2 AR, and the four states of G protein were successfully captured.

Chinese Chemical Letters 33 (2022) 747



Effects of local matrix environment on the spectroscopic properties of ensemble to single-particle level carbon dots

Zhihong Wei^a, Boyang Wang^b, Mingcai Xie^a, Daocheng Hong^c, Xin Yang^b, Sushu Wan^b, Weiqing Yang^a, Siyu Lu^b, Yuxi Tian^a

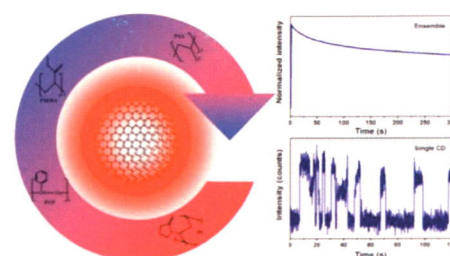
^aKey Laboratory of Mesoscopic Chemistry of MOE, School of Chemistry and Chemical Engineering, Jiangsu Key Laboratory of Vehicle Emissions Control, Nanjing University, Nanjing 210023, China

^bGreen Catalysis Center, and College of Chemistry, Zhengzhou University, Zhengzhou 450001, China

^cKey Laboratory for Advanced Technology in Environmental Protection of Jiangsu Province, Yancheng Institute of Technology, Yancheng 224051, China

In this work, we employed single molecule spectroscopy to systemically investigate the effects of local matrix environments on the fluorescence properties, photo-stability from ensemble to single-particle level. Our results show that local matrix environment has significant impact on CDs properties such as luminous efficiency, photostability, and related electronic energy, which leads to a change in the spectral position of emission and the lifetime of the excited states. Moreover, we highlight that the CDs show a similar behavior with obvious blinking, and that most single-particle CDs have poor photostability.

Chinese Chemical Letters 33 (2022) 751



Enhanced oxidase-like activity of g-C₃N₄ nanosheets supported Pd nanosheets for ratiometric fluorescence detection of acetylcholinesterase activity and its inhibitor

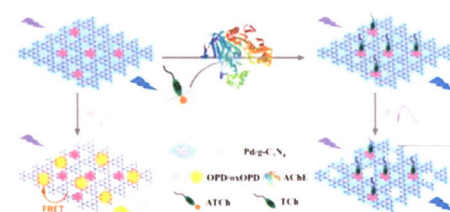
Chenghui Zhang^a, Pengjuan Ni^a, Bo Wang^a, Wendong Liu^a, Yuanyuan Jiang^a, Chuanxia Chen^a, Jian Sun^b, Yizhong Lu^a

^aSchool of Materials Science and Engineering, University of Jinan, Ji'nan 250022, China

^bState Key Laboratory of Electroanalytical Chemistry, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, Changchun 130022, China

A Pd/g-C₃N₄ nanocomposite with improved oxidase-like activity compared to Pd nanosheets is synthesized and used to develop a ratio fluorescence strategy for detection of acetylcholinesterase (AChE) activity and its inhibitor. In this assay, the oxidase mimetic activity of Pd/g-C₃N₄ can be inhibited via the coordination interaction of Pd and thiol-containing thiocholine (TCh), which is hydrolyzed from acetylthiocholine (ATCh) under the catalysis of specific AChE.

Chinese Chemical Letters 33 (2022) 757



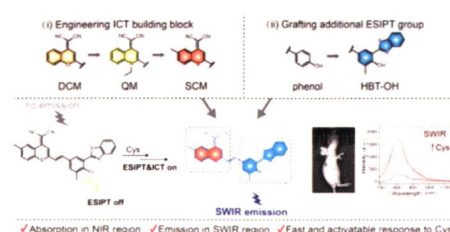
Rational design of shortwave infrared (SWIR) fluorescence probe: Cooperation of ICT and ESIPT processes for sensing endogenous cysteine

Maouj Chang, Chenxu Yan, Lei Shi, Dan Li, Wei Fu, Zhiqian Guo

Shanghai Key Laboratory of Functional Materials Chemistry, Key Laboratory for Advanced Materials and Institute of Fine Chemicals, 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, School of Chemistry and Molecular Engineering, East China University of Science and Technology, Shanghai 200237, China

Herein, we report a molecular engineering strategy for shortwave infrared fluorescence sensing of cysteine, which integrated an excited-state intermolecular proton transfer (ESIPT) building block into the intramolecular charge transfer (ICT) scaffold. Using the designed probe, we were able to conduct in vivo sensing of endogenous Cys via the off-on SWIR fluorescence signal.

Chinese Chemical Letters 33 (2022) 762



Let-7i miRNA and platinum loaded nano-graphene oxide platform for detection/reversion of drug resistance and synergetic chemical-photothermal inhibition of cancer cell

Jianhua Yan^a, Yixuan Zhang^a, Lijuan Zheng^a, Yuwei Wu^a, Ting Wang^a, Ting Jiang^b, Xiaoqin Liu^b, Dongming Peng^c, Yanfei Liu^b, Zhenbao Liu^{a,d}

^a Department of Pharmaceuticals, Xiangya School of Pharmaceutical Sciences, Central South University, Changsha 410013, China

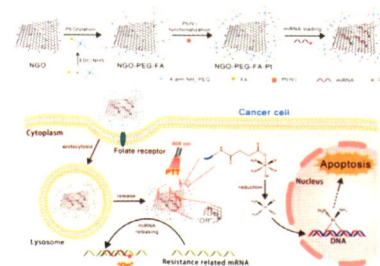
^b Department of Pharmaceutical Engineering, College of Chemistry and Chemical Engineering, Central South University, Changsha 410083, China

^c Department of Medicinal Chemistry, School of Pharmacy, Hunan University of Chinese Medicine, Changsha 410208, China

^d Molecular Imaging Research Center of Central South University, Changsha 410008, China

Cyanine5 modified miRNA (*let-7i*) (Cy5-miRNA) and platinum were integrated onto a nano-graphene oxide platform to achieve simultaneously detection/reversion of drug resistance and synergetic treatment of cisplatin resistant SKOV₃ cells.

Chinese Chemical Letters 33 (2022) 767



Target-triggered hairpin-free chain-branching growth of DNA dendrimers for contrast-enhanced imaging in living cells by avoiding signal dispersion

Jiaqi Deng^a, Jingyuan Xu^a, Minzhi Ouyang^c, Zhen Zou^a, Yanli Lei^a, Junbin Li^a, Zhihe Qing^a, Ronghua Yang^b

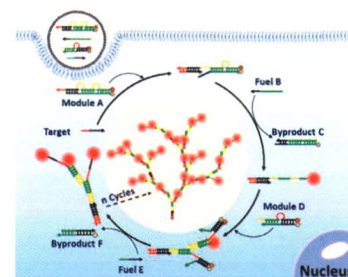
^a Hunan Provincial Key Laboratory of Cytochemistry, School of Chemistry and Food Engineering, Changsha University of Science and Technology, Changsha 410114, China

^b Laboratory of Chemical Biology & Traditional Chinese Medicine Research, Ministry of Education, College of Chemistry and Chemical Engineering, Hunan Normal University, Changsha 410081, China

^c Department Ultrasound Diagnosis, The Second Xiangya Hospital, Central South University, Changsha 410011, China

In this work, a one-to-large (1:L) signaling mechanism was proposed to enhance the cell imaging contrast by avoiding signal dispersion in amplification.

Chinese Chemical Letters 33 (2022) 773



A ratiometric fluorescent probe based on carbon dots assembly for intracellular lysosomal polarity imaging with wide range response

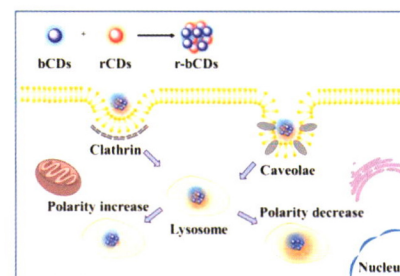
Guangyue Zou^a, Shuai Chen^a, Nazhen Liu^b, Yongliang Yu^a

^a Research Center for Analytical Sciences, Department of Chemistry, College of Sciences, Northeastern University, Shenyang 110819, China

^b Key Laboratory of Marine Environmental Corrosion and Bio-fouling, Institute of Oceanology, Chinese Academy of Sciences, Qingdao 266071, China

A ratiometric fluorescent probe (r-bCDs) is prepared by amide bond assembly of polarity-sensitive red fluorescent carbon dots (rCDs) and referenced blue fluorescent carbon dots (bCDs), and applied for intracellular lysosomal polarity imaging with wide range response.

Chinese Chemical Letters 33 (2022) 778



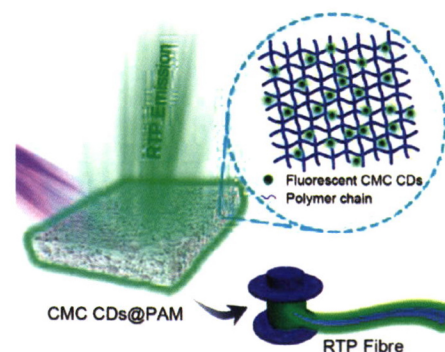
Carbon dots confined in 3D polymer network: Producing robust room temperature phosphorescence with tunable lifetimes

Yingxiang Zhai, Ping Wang, Xinyue Zhang, Shouxin Liu, Jian Li, Zhijun Chen, Shujun Li

Key Laboratory of Bio-based Material Science & Technology, Ministry of Education, Northeast Forestry University, Harbin 150040, China

The CMC CDs@PAM materials were employed for fabricating RTP fibres.

Chinese Chemical Letters 33 (2022) 783



Designing DNA cage-based immuno-fluorescence strategy for rapid diagnosis of clinical cervical cancer tissues

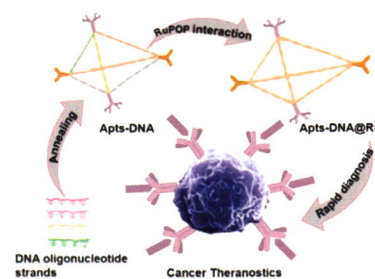
Juanjuan Li^a, Hongjie Luo^a, Xueqiong Zhu^b, Jianfu Zhao^a, Tianfeng Chen^a

^a Department of Oncology, The First Affiliated Hospital, and Department of Chemistry, Jinan University, Guangzhou 510632, China

^b Department of Obstetrics and Gynecology, The Second Affiliated Hospital and Yuying Children's Hospital of Wenzhou Medical University, Wenzhou 325000, China

A promising immuno-fluorescence strategy was rationally designed and synthesized by loading ruthenium complex into cervical cancer-targeted DNA-origami, which was well used to realize high-speed and inexpensive diagnosis of clinical cervical cancer tumor tissues avoiding the traditional multi-stage process, thus demonstrating high application potential in clinical pathological grading and surgical judgment.

Chinese Chemical Letters 33 (2022) 788



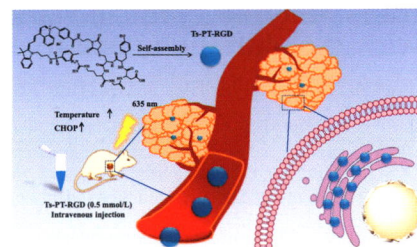
An endoplasmic reticulum-targeted organic photothermal agent for enhanced cancer therapy

Kaiye Wang, Yanan Xiang, Wei Pan, Hongyu Wang, Na Li, Bo Tang

College of Chemistry, Chemical Engineering and Materials Science, Key Laboratory of Molecular and Nano Probes, Ministry of Education, Collaborative Innovation Centre of Functionalized Probes for Chemical Imaging in Universities of Shandong, Institute of Molecular and Nano Science, Shandong Normal University, Ji'nan 250014, China

A novel ER-targeted organic photothermal agent for selective ablation of tumor was firstly developed. In vivo photothermal therapy experiments indicated that it performed much better in tumor inhibitory than the photothermal agent without ER-targeted unit.

Chinese Chemical Letters 33 (2022) 793



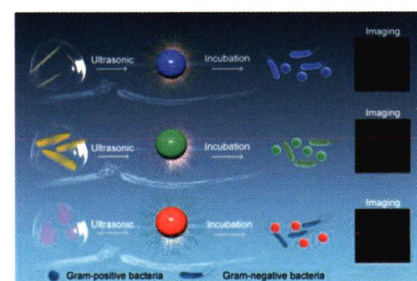
Multicolor biomass based carbon nanodots for bacterial imaging

Wenbo Zhao, Yong Wang, Kaikai Liu, Rui Zhou, Chongxin Shan

Henan Key Laboratory of Diamond Optoelectronic Materials and Devices, Key Laboratory of Materials Physics, Ministry of Education, School of Physics and Microelectronics, Zhengzhou University, Zhengzhou 450052, China

Carbon nanodots with blue, green and red fluorescence have been prepared by a novel ultrasonic-assisted method using biomass as precursor, and they can be used effectively for bacterial imaging, showing potential as bacterial stains.

Chinese Chemical Letters 33 (2022) 798



Ni nanoparticles encapsulated within H-type ZSM-5 crystals for upgrading palmitic acid to diesel-like fuels

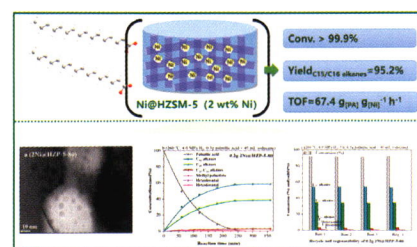
Yanchun Shi^a, Chen Gao^a, Enhui Xing^b, Jimei Zhang^a, Feng Duan^a, He Zhao^a, Yongbing Xie^a

^a CAS Key Laboratory of Green Process and Engineering, Institute of Process Engineering, Chinese Academy of Sciences, Beijing 100190, China

^b State Key Laboratory of Catalytic Materials and Reaction Engineering, Research Institute of Petroleum Processing, Sinopec, Beijing 100083, China

Ni@HZSM-5 exhibited 100% hydrocarbons selectivity and the outstanding stability with complete conversion of palmitic acid, which was based upon their 3–7 nm Ni nanoparticles with HZSM-5 crystals via the post-encapsulated method.

Chinese Chemical Letters 33 (2022) 803



High-performance cascade nanoreactor based on halloysite nanotubes-integrated enzyme-nanozyme microsystem

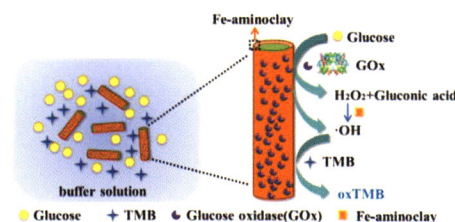
Yan Liu^a, Rui Lv^a, Shiyong Sun^a, Daoyong Tan^a, Faqin Dong^a, Yevgeny A. Golubev^b, Xiaoqin Nie^a, Olga B. Kotova^b, Jin Liu^a, Ke Wang^a

^a School of Environment and Resource, Key Laboratory of Solid Waste Treatment and Resource Recycle of Ministry of Education, Southwest University of Science and Technology, Mianyang 621010, China

^b Yushkin's Institute of Geology, Komi Science Center, Ural Branch of RAS, ul. Pervomayskaya, 54, Syktyvkar 167982, Russia

Inspired by natural enzymes compartmentalized in biological microsystems, a natural enzyme (glucose oxidase, GOx) and horseradish peroxidase (HRP)-like nanozyme (Fe-aminoclay) were coimmobilized on the surface of activated halloysite nanotubes to construct an efficient enzymatic cascade platform. The microcompartmentalization and substrate-channeling effects of the enzyme-nanozyme microsystem improved the overall cascade reaction efficiency.

Chinese Chemical Letters 33 (2022) 807



Enhanced photocatalytic CO₂ hydrogenation with wide-spectrum utilization over black TiO₂ supported catalyst

Binbin Jin^a, Xin Ye^a, Heng Zhong^{a,b,c}, Fangming Jin^{a,b,c}, Yun Hang Hu^d

^a School of Environmental Science and Engineering, State Key Lab of Metal Matrix Composites, Shanghai Jiao Tong University, Shanghai 200240, China

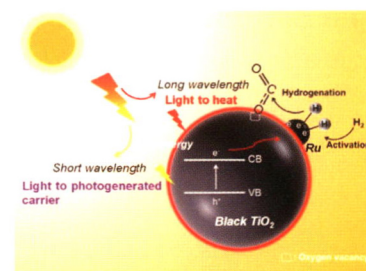
^b Center of Hydrogen Science, Shanghai Jiao Tong University, Shanghai 200240, China

^c Shanghai Institute of Pollution Control and Ecological Security, Shanghai 200092, China

^d Department of Materials Science and Engineering, Michigan Technological University, Houghton, Michigan 49931-1295, United States

A black TiO₂ supported catalyst was constructed for light-driven catalytic CO₂ hydrogenation, achieving efficient CO₂ conversion based on the *in-situ* generated heat and electron-rich Ru nanoparticles under irradiation.

Chinese Chemical Letters 33 (2022) 812



Iron-catalyzed cyanoalkylation of difluoroenol silyl ethers with cyclobutanone oxime esters

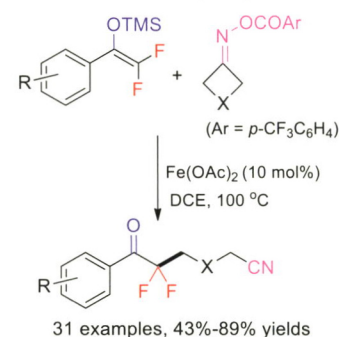
Xiaolei Zhu^a, Yangen Huang^a, Xiuhua Xu^b, Fengling Qing^{a,b}

^a College of Chemistry, Chemical Engineering and Biotechnology, Donghua University, Shanghai 201620, China

^b Key Laboratory of Organofluorine Chemistry, Shanghai Institute of Organic Chemistry, University of Chinese Academy of Science, Chinese Academy of Science, Shanghai 200032, China

An iron-catalyzed reaction of difluoroenol silyl ethers and cyclobutanone oxime esters has been developed, leading to diverse gem-difluoromethylenated ketonitriles in moderate to good yields.

Chinese Chemical Letters 33 (2022) 817



Trimetaphosphate-induced chiral selection between amino acid and nucleoside using ¹⁵N-³¹P coupling NMR

Jianxi Ying^{a,b}, Ruiwen Ding^{a,b}, Yumeng Zhang^c, Bowen Han^{a,b}, Yeting Guo^{a,b}, Ning Wang^{a,b}, Dandan Guo^{a,b}, Yile Wu^{a,b}, Junwei Huang^c, Yan Liu^c, Feng Ni^{a,b}, Shaohua Huang^{a,b}, Yufen Zhao^{a,b,c,d}

^a Institute of Drug Discovery Technology, Ningbo University, Ningbo 315211, China

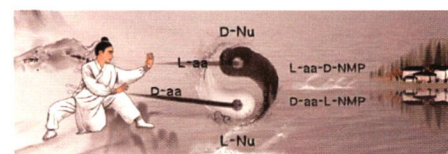
^b Qian Xuesen Collaborative Research Center of Astrochemistry and Space Life Sciences, Ningbo University, Ningbo 315211, China

^c Department of Chemical Biology, College of Chemistry and Chemical Engineering, Xiamen University, Xiamen 361005, China

^d Key Laboratory of Bioorganic Phosphorus Chemistry and Chemical Biology (Ministry of Education), Department of Chemistry, Tsinghua University, Beijing 100084, China

Chiral selection of biomolecules is an important signature of life. Here this work showed that nucleotide amidate of amino acid (N-aa-NMP) can be synthesized by D-nucleoside (D-Nu) with a clear preference for L-amino acid (L-aa) over D-aa. Vice-versa, D-aa was preferred over L-aa in the presence of L-Nu. These results revealed that L-/D-aa and D-/L-Nu hold intrinsically chiral selection at the molecular level.

Chinese Chemical Letters 33 (2022) 821



One-step synthesis of cyclic polypyrazole and the self-assembly vesicles driven by hydrogen bond

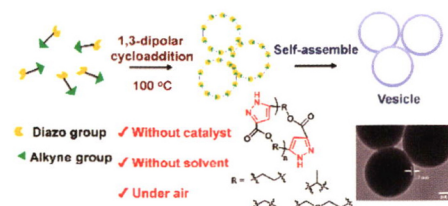
Zhen Lu^{a,b}, Bogeng Guo^a, Yulai Zhao^{a,b}, Linxi Hou^{a,b}, Longqiang Xiao^{a,b}

^a Department of Materials-Oriented Chemical Engineering, College of Chemical Engineering, Fuzhou University, Fuzhou 350116, China

^b Fujian Key Laboratory of Advanced Manufacturing Technology of Specialty Chemicals, Fuzhou University, Fuzhou 350116, China

Cyclic polymers were synthesized by 1,3-dipolar cycloaddition of heterodifunctional monomer, self-assembling into vesicles driven by hydrogen bond.

Chinese Chemical Letters 33 (2022) 825



Synthesis of *rac*- α -aryl propionaldehydes via branched-selective hydroformylation of terminal arylalkenes using water-soluble Rh-PNP catalyst

Peng Gao^a, Miaolin Ke^{b,c}, Tong Ru^{b,c}, Guanfeng Liang^{b,c}, Fen-Er Chen^{a,b,c}

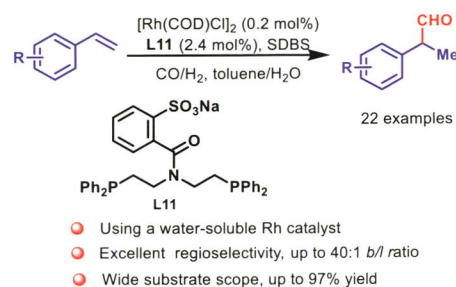
^aDepartment of Chemistry, Sichuan University, Chengdu 610064, China

^bDepartment of Chemistry, Fudan University, Shanghai 200433, China

^cShanghai Engineering Center of Industrial Asymmetric Catalysis for Chiral Drugs, Fudan University, Shanghai 200433, China

This work detailed the preparation of a class of water-soluble PNP ligands that differed by the nature of the substitute on phenyl ring of ligands. These ligands were incorporated into water-soluble rhodium-PNP complex catalysts that were used to regioselective hydroformylation of a series of terminal arylalkenes, providing efficient access to *rac*- α -aryl propionaldehydes in good to excellent yield (up to 97%) and branched-regioselectivity (up to 40:1 *b/l* ratio).

Chinese Chemical Letters 33 (2022) 830



Enhancement of morphological and emission stability of deep-blue small molecular emitter via a universal side-chain coupling strategy for optoelectronic device

Ning Sun^a, Han Gao^a, Lili Sun^a, Jingxi An^b, Man Xu^b, Chen Sun^a, Yamin Han^a, Jinyi Lin^a, Jiangli Cai^a, Mingjian Ni^a, Liangliang He^a, Jinghao Yang^a, Zhoulu Wang^a, Lubing Bai^a, Xinwen Zhang^b, Qi Wei^a, Xuehua Ding^a, Chengrong Yin^a, Linghai Xie^b, Wei Huang^{a,b,c}

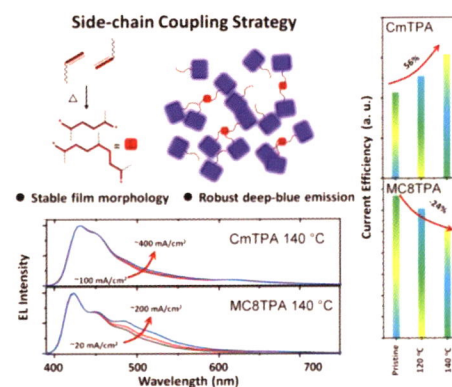
^aKey Laboratory of Flexible Electronics (KLOFE) and Institute of Advanced Materials (IAM), Nanjing Tech University (NanjingTech), Nanjing 210000, China

^bState Key Laboratory of Organic Electronics and Information Displays and Institute of Advanced Materials (IAM), Nanjing University of Posts and Telecommunications, Nanjing 210023, China

^cFrontiers Science Center for Flexible Electronics (FSCFE), MIIT Key Laboratory of Flexible Electronics (KLOFE), Northwestern Polytechnical University, Xi'an 710072, China

The deep-blue emission and film morphological stability of small molecular fluorene emitter were improved by side chain coupling strategy.

Chinese Chemical Letters 33 (2022) 835



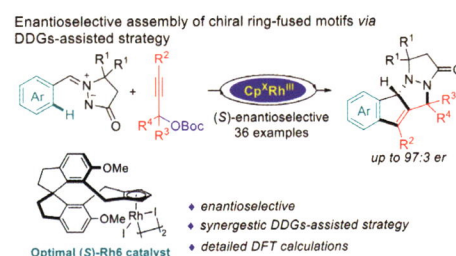
Enantioselective synthesis of indenopyrazolopyrazolones enabled by dual directing groups-assisted and rhodium(III)-catalyzed tandem C-H alkenylation/[3 + 2] stepwise cycloaddition

Min Wu, Hui Gao, Huiying Xu, Wei Yi, Zhi Zhou

Guangzhou Municipal and Guangdong Provincial Key Laboratory of Protein Modification and Degradation & Molecular Target and Clinical Pharmacology, State Key Laboratory of Respiratory Disease, School of Pharmaceutical Sciences, Guangzhou Medical University, Guangzhou 511436, China

By virtue of the azomethine imine moiety and the -OBoc group as synergistic dual directing groups, the enantioselective Rh(III)-catalyzed C-H alkenylation/intramolecular [3 + 2] dipolar cycloaddition sequence has been realized for the assembly of tetracyclic indenopyrazolopyrazolone frameworks with specific regioselectivity.

Chinese Chemical Letters 33 (2022) 842



Rhodium(III)-catalyzed benzo[c]azepine-1,3(2H)-dione synthesis via tandem C-H alkylation and intermolecular amination of *N*-methoxybenzamide with 3-bromo-3,3-difluoropropene

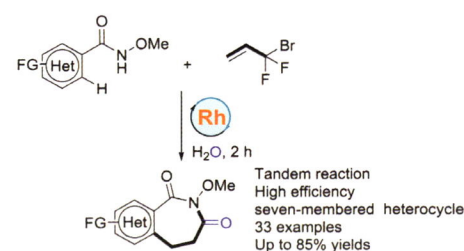
Xu Xu^a, Guanyu Zhou^a, Guodong Ju^a, Dongjie Wang^a, Bao Li^b, Yingsheng Zhao^{a,b}

^aKey Laboratory of Organic Synthesis of Jiangsu Province, College of Chemistry, Chemical, Engineering and Materials Science, Soochow University, Suzhou 215123, China

^bSchool of Chemistry and Chemical Engineering, Henan Normal University, Xinxiang 453000, China

A rhodium(III)-catalyzed benzo[c]azepine-1,3(2H)-dione synthesis via tandem C-H alkylation and intramolecular amination of *N*-methoxybenzamide with 3-bromo-3,3-difluoropropene as the alkylation agent is reported.

Chinese Chemical Letters 33 (2022) 847



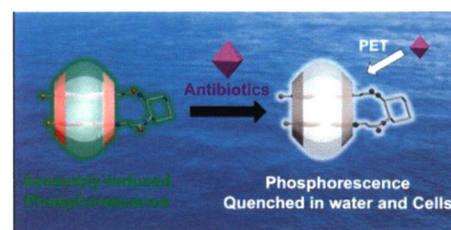
Cucurbit[8]uril-mediated phosphorescent supramolecular foldamer for antibiotics sensing in water and cells

De-Ao Xu, Qing-Yang Zhou, Xianyin Dai, Xin-Kun Ma, Ying-Ming Zhang, Xiufang Xu, Yu Liu

College of Chemistry, State Key Laboratory of Elemento-Organic Chemistry, Nankai University, Tianjin 300071, China

A supramolecular foldamer is constructed by the 1:1 host-guest complexation between cucurbit[8]uril and a homoditopic pyridinium guest, which can exhibit complexation-induced phosphorescence and ultrasensitive antibiotics sensing in both aqueous solution and living cells.

Chinese Chemical Letters 33 (2022) 851



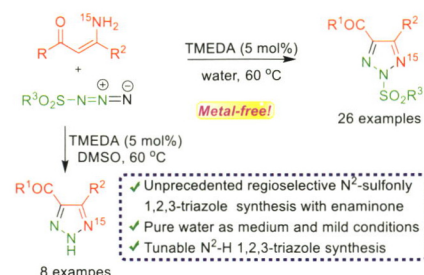
Amine-catalyzed synthesis of N^2 -sulfonyl 1,2,3-triazole in water and the tunable N^2 -H 1,2,3-triazole synthesis in DMSO via metal-free enamine annulation

Yanhui Guo, Yunyun Liu, Jie-Ping Wan

College of Chemistry and Chemical Engineering, Jiangxi Normal University, Nanchang 330022, China

The unprecedented regioselective synthesis of N^2 -sulfonyl 1,2,3-triazoles has been performed by reacting NH_2 -enaminones and sulfonyl azides in water by using only tertiary amine as catalyst (5 mol% TMEDA). Various 1,2,3-triazole products have been acquired with generally good to excellent yields with this clean approach. In addition, modifying the reaction conditions by using DMSO as medium leads to the selective synthesis of N^2 -H 1,2,3-triazoles.

Chinese Chemical Letters 33 (2022) 855



Studies on the biological activity of gem-difluorinated 3,3'-spirocyclic indole derivatives

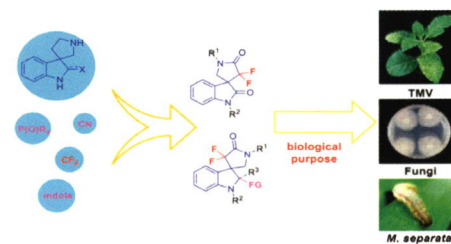
Qiang Wang^{a,b}, Hongjian Song^a, Qingmin Wang^a

^aState Key Laboratory of Elemento-Organic Chemistry, Research Institute of Elemento-Organic Chemistry, College of Chemistry, Frontiers Science Center for New Organic Matter, Nankai University, Tianjin 300071, China

^bDepartment of Organic Chemistry, Stockholm University, SE-106 91 Stockholm, Sweden

The biological activities of a series of 3,3'-spirocyclic indole derivatives containing CF₂, phosphine oxide, indole, and cyano functional groups were evaluated, and these derivatives were found to exhibit anti-TMV, fungicidal, and insecticidal activities.

Chinese Chemical Letters 33 (2022) 859



Metal-free regioselective construction of 2-aryl-2H-tetrazol-5-yl difluoromethylene phosphonates

Shi-Jing Zhai^{a,b}, Dominique Cahard^c, Fa-Guang Zhang^{a,b}, Jun-An Ma^{a,b}

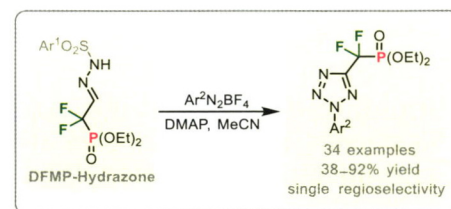
^aDepartment of Chemistry, Tianjin Key Laboratory of Molecular Optoelectronic Sciences, Frontiers Science Center for Synthetic Biology (Ministry of Education), and Tianjin Collaborative Innovation Centre of Chemical Science & Engineering, Tianjin University, Tianjin 300072, China

^bJoint School of National University of Singapore and Tianjin University, International Campus of Tianjin University, Fuzhou 350207, China

^cCNRS UMR 6014 COBRA, Normandie Université, Mont Saint Aignan 76821, France

Three bench-stable difluoromethylene phosphonate hydrazones have been developed to function as the corresponding diazo precursors, and cyclized with aryldiazonium salts under metal-free conditions to give the 2-aryl-2H-tetrazol-5-yl difluoromethylene phosphonates with exclusive regioselectivity.

Chinese Chemical Letters 33 (2022) 863



Copper-catalyzed asymmetric propargylic substitution of anthrones and propargylic esters

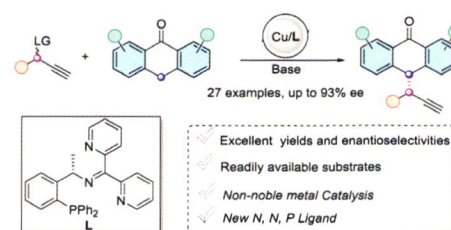
Zhiheng Li^a, Danran Li^b, Huaming Xiang^b, Jian Huang^b, YINUO Zheng^b, Cuiju Zhu^b, Xiuling Cui^a, Chao Pi^a, Hao Xu^b

^aGreen Catalysis Center, and College of Chemistry, Henan Key Laboratory of Chemical Biology and Organic Chemistry, Key Laboratory of Applied Chemistry of Henan Universities, Zhengzhou University, Zhengzhou 450001, China

^bKey Laboratory of Pesticides & Chemical Biology Ministry of Education, College of Chemistry, Central China Normal University, Wuhan 430079, China

A highly enantioselective propargylic substitution of anthrones with propargylic esters was developed using copper salts with chiral *N, N, P*-ligand. This strategy is amenable to a broad range of substrates, uses readily available starting materials, provides excellent yields with remarkable enantioselectivity under mild conditions, and enables attractive products diversification routes.

Chinese Chemical Letters 33 (2022) 867



Dry-regulated hydrogels with anisotropic mechanical performance and ionic conductivity

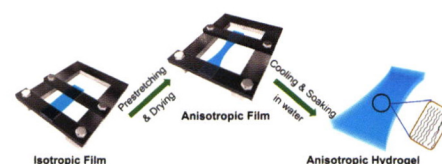
Ping Li^a, Yi Liu^a, Ziang Wang^a, Xuemei Xiao^a, Guozhe Meng^a, Xiaolin Wang^b, Hong-Lei Guo^a, Hui Guo^a

^aSchool of Chemical Engineering and Technology, Sun Yat-sen University, Zhuhai 519082, China

^bSchool of Pharmacy and State Key Laboratory of Quality Research in Chinese Medicine, Macau University of Science and Technology, Macao, China

A simple yet effective method is developed to fabricate anisotropic crystalline polyvinyl alcohol hydrogels, which manifest excellent mechanical properties with noticeable directional distinction and differential ionic conductivity.

Chinese Chemical Letters 33 (2022) 871



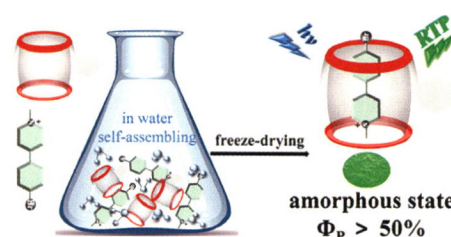
Supramolecular self-assembling strategy for constructing cucurbit[6]uril derivative-based amorphous pure organic room-temperature phosphorescence complex featuring extra-high efficiency

Chunhui Li, Xiuqin Li, 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

An amorphous pCB[6]-based pure organic room-temperature phosphorescence supramolecular complexes was constructed using self-assembling strategy, and exhibited high efficiency ($\Phi_p \geq 50\%$) under ambient conditions owing to the restriction of vibrational dissipation.

Chinese Chemical Letters 33 (2022) 877



AND molecular logic gates based on host-guest complexation operational in live cells

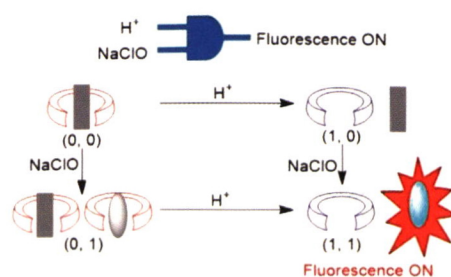
Siyang Jiang^a, Weipeng Mao^a, Dake Mao^a, Zhan-Ting Li^a, Da Ma^{a,b}

^aDepartment of Chemistry, Fudan University, Shanghai, Shanghai 200433, China

^bCollege of Chemistry, and Green Catalysis Center, Zhengzhou University, Zhengzhou 450001, China

AND molecular logic gates based on supramolecular complexation are used for dual biomarker sensing in vitro.

Chinese Chemical Letters 33 (2022) 881



Total syntheses of hyperaspidinols A and B enabled by a bioinspired diastereoselective cascade sequence

Anquan Zheng^{a,b}, Tingting Zhou^{a,b}, Sasa Wang^c, Wenge Zhang^{a,d}, Xiuxiang Lu^{a,d}, Huiyu Chen^b, Haibo Tan^a

^aKey Laboratory of Plant Resources Conservation and Sustainable Utilization, Key Laboratory of South China Agricultural Plant Molecular Analysis, Guangdong Provincial Key Laboratory of Applied Botany, South China Botanical Garden, Chinese Academy of Sciences, Guangzhou 510650, China

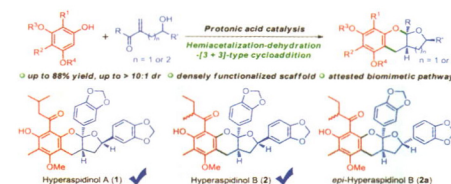
^bSchool of Pharmacy and Bioengineering, Chongqing University of Technology, Chongqing 400054, China

^cGuangxi Key Laboratory of Chemistry and Engineering of Forest Products, Guangxi University for Nationalities, Nanning 530006, China

^dUniversity of Chinese Academy of Sciences, Beijing 100049, China

A bioinspired acid-triggered hemiacetalization/dehydration/[3 + 3]-type cycloaddition cascade process was demonstrated by the successful total syntheses of hyperaspidinols A and B and a series of related derivatives.

Chinese Chemical Letters 33 (2022) 885



CoFe-LDH nanowire arrays on graphite felt: A high-performance oxygen evolution electrocatalyst in alkaline media

Biao Deng^a, Jie Liang^b, Luchao Yue^b, Tingshuai Li^b, Qian Liu^c, Yang Liu^d, Shuyan Gao^d, Abdulmohsen Ali Alshehri^e, Khalid Ahmed Alzahrani^e, Yonglan Luo^a, Xuping Sun^b

^aChemical Synthesis and Pollution Control Key Laboratory of Sichuan Province, School of Chemistry and Chemical Engineering, China West Normal University, Nanchong 637002, China

^bInstitute of Fundamental and Frontier Sciences, University of Electronic Science and Technology of China, Chengdu 610054, China

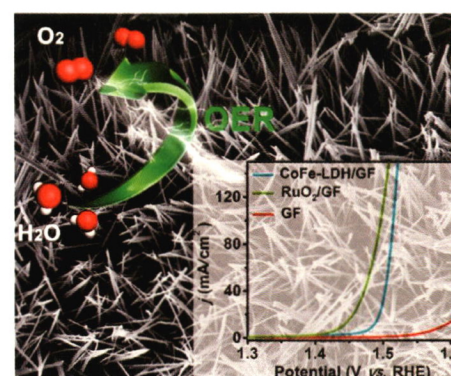
^cInstitute for Advanced Study, Chengdu University, Chengdu 610106, China

^dSchool of Materials Science and Engineering, Henan Normal University, Xinxiang 453007, China

^eChemistry Department, Faculty of Science, King Abdulaziz University, P.O. Box 80203, Jeddah 21589, Saudi Arabia

CoFe-LDH nanowire arrays on graphite felt acts as a superb oxygen evolution catalyst with high durability and low overpotential of 252 and 285 mV to attain 10 and 100 mA/cm² in 1.0 mol/L KOH, respectively.

Chinese Chemical Letters 33 (2022) 890



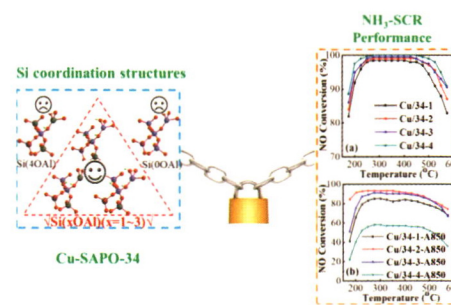
The role of Si coordination structures in the catalytic properties and durability of Cu-SAPO-34 as NH₃-SCR catalyst for NO_x reduction

Zhen Chen, Ce Bian, Chi Fan, Tao Li

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

A batch of Cu-SAPO-34 samples with various Si contents was synthesized via a one-pot method to study the role of Si coordination structures in the NH₃-SCR catalytic properties and hydrothermal stability. It found that Si(xOAl) (x = 1–3) structures are conducive to the stabilization of isolated Cu²⁺, thus enhancing the stability to severe hydrothermal treatment.

Chinese Chemical Letters 33 (2022) 893



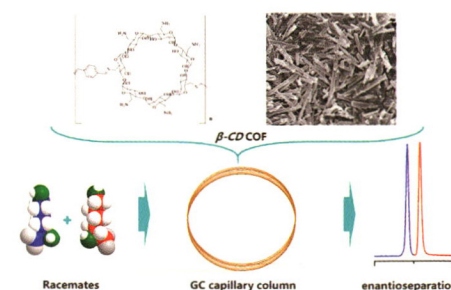
A β -cyclodextrin covalent organic framework used as a chiral stationary phase for chiral separation in gas chromatography

Bo Tang, Wei Wang, Huipeng Hou, Yiquan Liu, Zongkun Liu, Lina Geng, Liquan Sun, Aiqin Luo

Key Laboratory of Molecular Medicine and Biotherapy, School of Life Science, Beijing Institute of Technology, Beijing 100081, China

In this study, a β -cyclodextrin covalent organic framework used as a chiral stationary phase for enantioseparation in gas chromatography. The β -CD-COF coated capillary column had excellent selectivity for the resolution of chiral compounds, including chiral alcohols, aldehydes, ethers, and amino acid derivatives.

Chinese Chemical Letters 33 (2022) 898



Facile preparation of nano-g-C₃N₄/UiO-66-NH₂ composite as sorbent for high-efficient extraction and preconcentration of food colorants prior to HPLC analysis

Xiaowan Zhang^a, Yixin Yang^a, Peige Qin^a, Lizhen Han^a, Wenli Zhu^a, Shaofeng Duan^b, Minghua Lu^a, Zongwei Cai^c

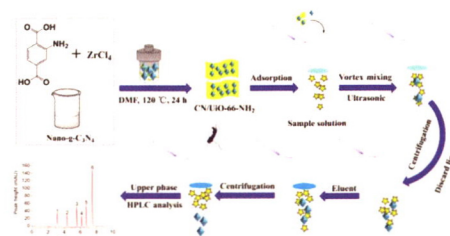
^aHenan International Joint Laboratory of Medicinal Plants Utilization, School of Chemistry and Chemical Engineering, Henan University, Kaifeng 475004, China

^bInstitute for Innovative Drug Design and Evaluation, School of Pharmacy, Henan University, Kaifeng 475004, China

^cState Key Laboratory of Environmental and Biological Analysis, Department of Chemistry, Hong Kong Baptist University, Hong Kong, China

The nano-g-C₃N₄/UiO-66-NH₂ composite was facile prepared and used as sorbent of dispersive solid-phase extraction. A high-efficient and simple sample pretreatment method using nano-g-C₃N₄/UiO-66-NH₂ composite as sorbent was developed for clean-up and preconcentration colorants from different foodstuffs prior to HPLC analysis.

Chinese Chemical Letters 33 (2022) 903



Oxygen-vacancy-rich phenanthroline/TiO₂ nanocomposites: An integrated adsorption, detection and photocatalytic material for complex pollutants remediation

Pinghua Chen^{a,b}, Huitao Zheng^{a,b}, Hualin Jiang^{a,b}, Jun Liu^{a,b}, Xinman Tu^{a,b}, Weibo Zhang^d, Bailey Phillips^c, Lei Fang^c, Jian-Ping Zou^{a,b}

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

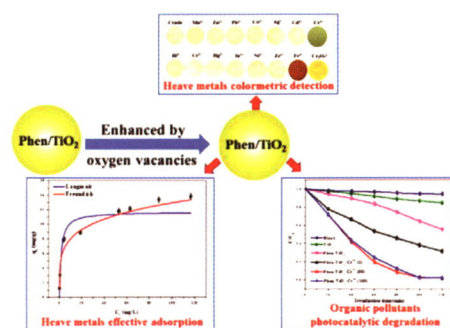
^bDepartment of Applied Chemistry, College of Environmental and Chemical Engineering, Nanchang Hangkong University, Nanchang 330063, China

^cDepartment of Chemistry, Texas A&M University, College Station, Texas 77843, United States

^dSchool of Resources, Environmental and Chemical Engineering, Nanchang University, Nanchang 330031, China

To address the challenge of treating complex pollutants containing heavy metals and organic compounds, a phenanthroline/TiO₂ nanocomposite with rich oxygen vacancy defects was synthesized to integrate the functions of pollutant detection, adsorption, and photocatalytic degradation.

Chinese Chemical Letters 33 (2022) 907



Boosted activity of Cu/SiO₂ catalyst for furfural hydrogenation by freeze drying

Hong Du^a, Xiuyun Ma^a, Miao Jiang^a, Z. Conrad Zhang^{a,b}

^aDalian National Laboratory for Clean Energy, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian 116023, China

^bState Key Laboratory of Catalysis, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian 116023, China

The catalytic performance in furfural hydrogenation to furfuryl alcohol is boosted by employing freeze-drying in the preparation of silica supported copper catalyst.

Chinese Chemical Letters 33 (2022) 912



A sensitive and validated LC-MS/MS method for high-throughput determination of pomalidomide in human plasma and pharmacokinetic studies

Chang Shu^{a,b}, Teng-Fei Li^c, Duo Li^b, Zhong-Qiu Li^a, Xing-Hua Xia^a

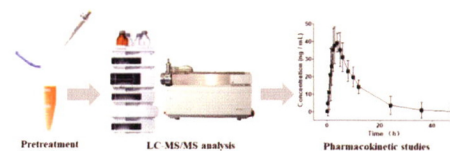
^aState Key Laboratory of Analytical Chemistry for Life Science, School of Chemistry and Chemical Engineering, Nanjing University, Nanjing 210023, China

^bDepartment of Pharmaceutical Analysis, School of Pharmacy, China Pharmaceutical University, Nanjing 210009, China

^cSchool of Pharmacy, Department of Clinical Pharmacology, Sir Run Hospital, Nanjing Medical University, Nanjing 211166, China

A sensitive and validated LC-MS/MS method was established and successfully applied to analyze samples obtained from clinical pharmacokinetics study after oral administration of pomalidomide (4 mg) capsules.

Chinese Chemical Letters 33 (2022) 916



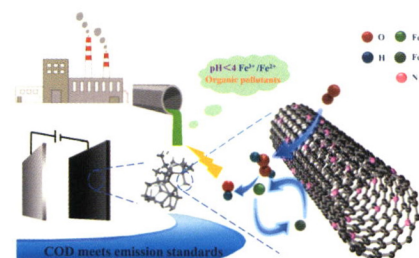
A binder-free electrode for efficient H_2O_2 formation and Fe^{2+} regeneration and its application to an electro-Fenton process for removing organics in iron-laden acid wastewater

Ziliang Wei, Haolin Xu, Zhenchao Lei, Xiaoyun Yi, Chunhua Feng, Zhi Dang

The Key Lab of Pollution Control and Ecosystem Restoration in Industry Clusters, Ministry of Education, School of Environment and Energy, South China University of Technology, Guangzhou 510006, China

We demonstrate a binder-free and self-supporting electrode for efficient H_2O_2 formation and Fe^{2+} regeneration, which can be applied to the electro-Fenton process for treating wastewater effluents, particularly those rich in organics, acids and $\text{Fe}^{3+}/\text{Fe}^{2+}$.

Chinese Chemical Letters 33 (2022) 920



Efficient charge separation in hierarchical $\text{NiS}@\text{ZnIn}_2\text{S}_4$ hollow nanospheres for photocatalytic water splitting

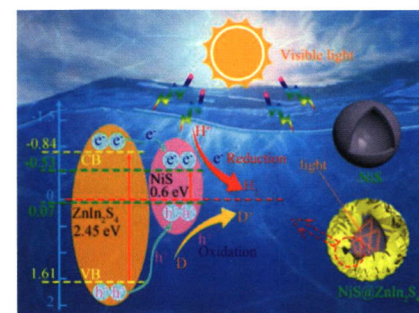
Kai Wu^{a,b}, Liang Mao^{a,b}, Xiuquan Gu^{a,b}, Xiaoyan Cai^{a,b}, Yulong Zhao^{a,b}

^aSchool of Materials Science and Physics, China University of Mining and Technology, Xuzhou 221116, China

^bJiangsu Province Engineering Laboratory of High Efficient Energy Storage Technology and Equipment, China University of Mining and Technology, Xuzhou 221116, China

Hierarchical $\text{NiS}@\text{ZnIn}_2\text{S}_4$ hollow nanospheres are designed for photocatalytic H_2 production from water splitting without co-catalyst and sacrificial agent. The combination of large surface area, multi light harvesting and effective charge separation of the hollow heterostructure is responsible for the superior photocatalytic activity of $\text{NiS}@\text{ZnIn}_2\text{S}_4$.

Chinese Chemical Letters 33 (2022) 926



Micrometer-sized NiOOH hierarchical spheres for enhanced degradation of sulfadiazine via synergistic adsorption and catalytic oxidation in peroxymonosulfate system

Cong Lyu^{a,b}, Lu Zhang^{a,b}, Dan He^{a,b}, Boyuan Su^c, Ying Lyu^{a,b}

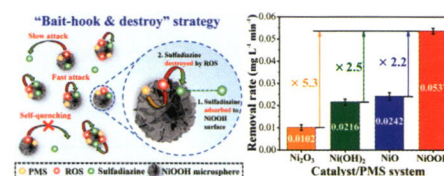
^aKey Lab of Groundwater Resources and Environment, Ministry of Education, Jilin University, Changchun 130026, China

^bJilin Provincial Key Laboratory of Water Resources and Environment, Jilin University, Changchun 130026, China

^cDepartment of Chemistry and Environmental Science, New Jersey Institute of Technology, Newark, NJ 07102, United States

This study adopted "bait-hook & destroy" strategy to enhance the degradation of sulfadiazine in the NiOOH/PMS system. NiOOH hierarchical spheres assembled from nanosheets exhibits more efficient peroxymonosulfate activation than other Ni_xO_y .

Chinese Chemical Letters 33 (2022) 930



Solid-phase impregnation promotes Ce doping in TiO_2 for boosted denitration of $\text{CeO}_2/\text{TiO}_2$ catalysts

Wang Song^a, Jiawei Ji^a, Kai Guo^a, Xin Wang^a, Xiaolian Wei^a, Yandi Cai^d, Wei Tan^a, Lulu Li^e, Jingfang Sun^b, Changjin Tang^c, Lin Dong^{a,b,d}

^aSchool of Chemistry and Chemical Engineering, Nanjing University, Nanjing 210093, China

^bKey Laboratory of Vehicles Emission Control of Jiangsu Province, Center of Modern Analysis, Nanjing University, Nanjing 210093, China

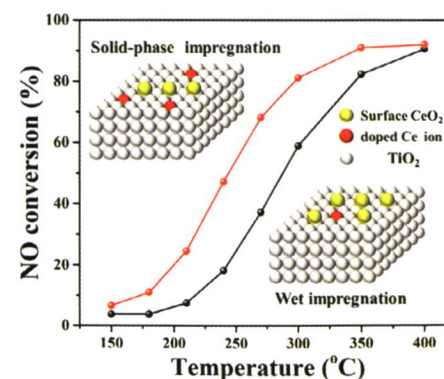
^cSchool of Environment, Nanjing Normal University, Nanjing 210023, China

^dSchool of the Environment, Nanjing University, Nanjing 210093, China

^eSchool of Environmental and Chemical Engineering, Jiangsu University of Science and Technology, Zhenjiang 212003, China

Solid-phase impregnation promoted the incorporation of partial Ce ions into TiO_2 surface lattice with the assistance of NO, enhancing the interaction between active components and supports. Thus, the catalytic activity of $\text{CeO}_2/\text{TiO}_2$ in $\text{NH}_3\text{-SCR}$ was improved.

Chinese Chemical Letters 33 (2022) 935



The Z-scheme g-C₃N₄/3DOM-WO₃ photocatalysts with enhanced activity for CO₂ photoreduction into CO

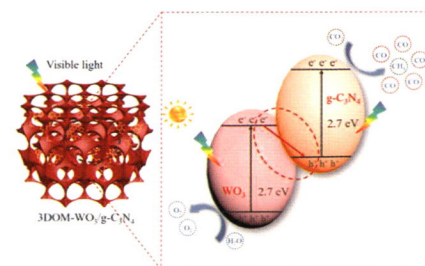
Zhilong Tang^{a,b}, Chujun Wang^a, Wenjie He^{a,b}, Yuechang Wei^{a,b}, Zhen Zhao^a, Jian Liu^a

^aState Key Laboratory of Heavy Oil Processing, China University of Petroleum, Beijing 102249, China

^bKey Laboratory of Optical Detection Technology for Oil and Gas, China University of Petroleum, Beijing 102249, China

The Z-scheme heterojunction of g-C₃N₄/3DOM-WO₃ catalyst improves the visible light adsorption efficiency and the separation efficiency of photogenerated electron-hole pairs, which results in the enhancing activity for CO₂ photoreduction into CO.

Chinese Chemical Letters 33 (2022) 939



Sea-urchin-like ReS₂ nanosheets with charge edge-collection effect as a novel cocatalyst for high-efficiency photocatalytic H₂ evolution

Bo Lin^a, Bowen Ma^a, Jiangang Chen^a, Yao Zhou^b, Jiadong Zhou^c, Xiaoqing Yan^d, Chao Xue^e, Xiao Luo^a, Qing Liu^a, Jinyong Wang^a, Renji Bian^a, Guidong Yang^d, Fucui Liu^a

^aSchool of Optoelectronic Science and Engineering, University of Electronic Science and Technology of China, Chengdu 611731, China

^bSchool of Physical and Mathematical Sciences, Nanyang Technological University, Singapore 637371, Singapore

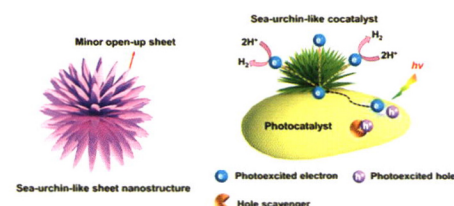
^cKey Lab of Advanced Optoelectronic Quantum Architecture and Measurement (Ministry of Education), Beijing Key Lab of Nanophotonics & Ultrafine Optoelectronic Systems, and School of Physics, Beijing Institute of Technology, Beijing 100081, China

^dXJTU-Oxford International Joint Laboratory for Catalysis, School of Chemical Engineering and Technology, Xi'an Jiaotong University, Xi'an 710049, China

^eState Centre for International Cooperation on Designer Low-carbon and Environmental Materials (CDLCEM), School of Materials Science and Engineering, Zhengzhou University, Zhengzhou 450001, China

A novel sea-urchin-like ReS₂ cocatalyst with an unusual charge edge-collection effect is constructed on the surface of TiO₂, thus contributing to a significant acceleration of charge separation and transfer for the ReS₂/TiO₂ heterojunctions.

Chinese Chemical Letters 33 (2022) 943



Highly efficient degradation of emerging contaminants by magnetic CuO@Fe_xO_y derived from natural mackinawite (FeS) in the presence of peroxymonosulfate

Ruohan Zhang^a, Maolian Chen^b, Zhaokun Xiong^{a,c}, Yong Guo^b, Bo Lai^{a,c}

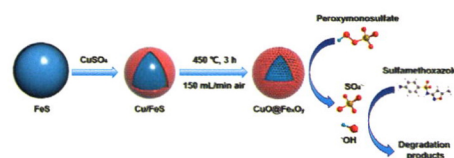
^aState Key Laboratory of Hydraulics and Mountain River Engineering, College of Architecture and Environment, Sichuan University-Pittsburgh Institute, Sichuan University, Chengdu 610207, China

^bDepartment of Process Equipment and Safety Engineering, School of Chemical Engineering, Sichuan University, Chengdu 610065, China

^cSino-German Centre for Water and Health Research, Sichuan University, Chengdu 610065, China

The CuO@Fe_xO_y particles were prepared by displacement plating with Cu²⁺ and calcination process in air atmosphere. Free radicals including hydroxyl radicals ([•]OH) and sulfate radicals (SO₄^{•-}) were the main reactive oxygen species (ROS) for the degradation of sulfamethoxazole.

Chinese Chemical Letters 33 (2022) 948



A one-pot process based on P₄₄₄₁₄Cl-HCl aqueous biphasic system for recovering rare earth elements from NdFeB permanent magnet

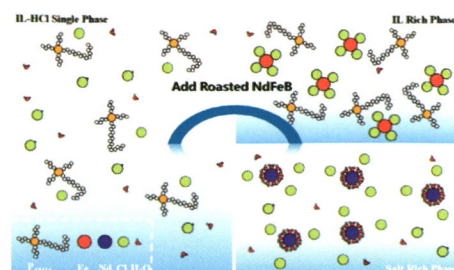
Chuangying Liu^{a,b}, Qibin Yan^a, Xingwang Zhang^{a,b}, Lecheng Lei^{a,b}, Chengliang Xiao^{a,b}

^aCollege of Chemical and Biological Engineering, Zhejiang University, Hangzhou 310027, China

^bInstitute of Zhejiang University - Quzhou, Quzhou 324000, China

After reacting with roasted NdFeB powder, the P₄₄₄₁₄Cl-HCl would directly form an aqueous biphasic system, and the Fe and Nd were mutually separated in different phases.

Chinese Chemical Letters 33 (2022) 953



Tuning the shell thickness of core-shell $\alpha\text{-Fe}_2\text{O}_3\text{@SiO}_2$ nanoparticles to promote microwave absorption

Honghong Fu^a, Yue Guo^c, Jian Yu^d, Zhen Shen^c, Jie Zhao^{a,c}, Yu Xie^a, Yun Ling^a, Sheng Ouyang^b, Shiqi Li^a, Wei Zhang^e

^a Department of Materials Chemistry, School of Environment and Chemical Engineering, Nanchang Hangkong University, Nanchang 330063, China

^b Instrumental Analysis Center of Nanchang Hangkong University, Nanchang 330063, China

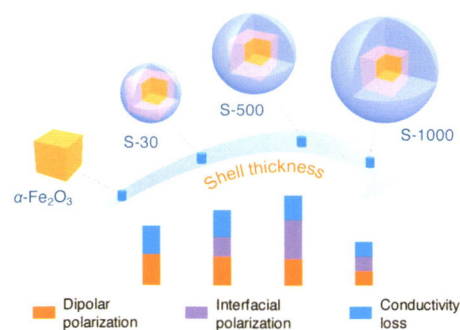
^c School of Chemistry and Chemical Engineering, Nanjing University, Nanjing 210023, China

^d Research Institute of Aero-Engine, Beihang University, Beijing 100191, China

^e School of Ecology and Environment, Zhengzhou University, Zhengzhou 450001, China

We first explored the "structure-performance" relationship between SiO_2 -shell thickness and microwave absorption performance. With increasing the SiO_2 -shell thickness, the microwave absorption ability first increased and then decreased. This result provided an important reference on designing next-generation advanced Fe-based microwave absorption materials.

Chinese Chemical Letters 33 (2022) 957



A topotactic tailored synthesis of waxberry-like mixed-phase TiO_2 hollow spheres for dye-sensitized solar cells

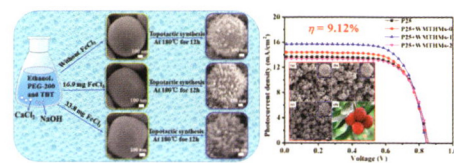
Yang-Hong Wu^a, Kai-Yan Yuan^a, Yan-E He^a, Heng Wu^a, Li-Jiao Ma^a, Gang Wang^a, Xiao-Dong Qiao^a, Bing-Xin Lei^a, Zhen-Fan Sun^a, Zhao-Qing Liu^b

^a School of Chemistry and Chemical Engineering, Key Laboratory of Electrochemical Energy Storage and Energy Conversion of Hainan Province, Key Laboratory of Electrochemical Energy Storage and Light Energy Conversion Materials of Haikou City, Hainan Normal University, Haikou 571158, China

^b School of Chemistry and Chemical Engineering/Institute of Clean Energy and Materials/Guangzhou Key Laboratory for Clean Energy and Materials/Huangpu Hydrogen Innovation Center, Guangzhou University, Guangzhou 510006, China

The waxberry-like mixed-phase TiO_2 hollow spheres were fabricated via a topotactic tailored synthesis method. The cell based on TiO_2 spheres light scattering layer obtained an optimal efficiency of 9.12%, which was superior to the DSSC of the pure P25 photoanode (8.12%).

Chinese Chemical Letters 33 (2022) 963



Two-dimensional coordination polymer-based nanosensor for sensitive and reliable nucleic acids detection in living cells

Yuzhi Xu^a, Yanfei Zhang^c, Huihui Yang^c, Wen Yin^c, Leli Zeng^a, Shuo Fang^d, Si-Yang Liu^b, Zong Dai^b, Xiaoyong Zou^c, Yihang Pan^a

^a Precision Medicine Center, Scientific Research Center, The Seventh Affiliated Hospital, Sun Yat-sen University, Shenzhen 518107, China

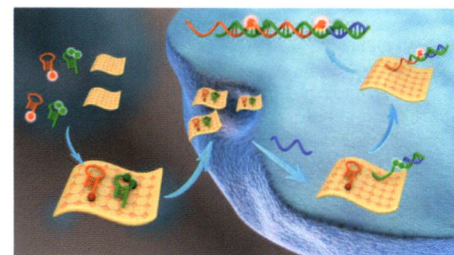
^b Key Laboratory of Sensing Technology and Biomedical Instrument of Guangdong Province, School of Biomedical Engineering, Sun Yat-sen University, Guangzhou 510006, China

^c School of Chemistry, Sun Yat-sen University, Guangzhou 510275, China

^d Department of Oncology, The Seventh Affiliated Hospital, Sun Yat-sen University, Shenzhen 518107, China

An ultrathin and well-dispersed 2D Cu(I) 1,2,4-triazolate coordination polymer nanosheet was synthesized with uniform size after optimizing reaction conditions. The nanosheet-based biosensor was used for sensitive DNA and microRNA detection both *in vitro* and in living cells.

Chinese Chemical Letters 33 (2022) 968



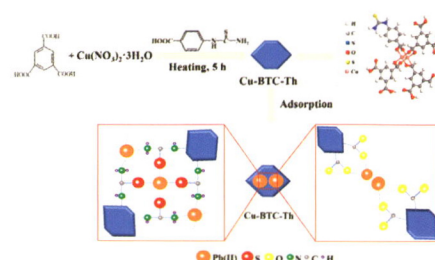
Design and syntheses of functionalized copper-based MOFs and its adsorption behavior for Pb(II)

Jingping Zhong, Jian Zhou, Minsi Xiao, Jun Liu, Jili Shen, Juan Liu, Sili Ren

Jiangxi Key Laboratory of Mining Engineering, School of Resources and Environmental Engineering, Jiangxi University of Science and Technology, Ganzhou 341000, China

A novel copper-based MOFs adsorbent (Cu-BTC-Th) was synthesized by a one-step method. The introduction of organic ligand of 4-Thioureidobenzoic acid (Th) into the material greatly improves the adsorption performance of the Cu-MOFs.

Chinese Chemical Letters 33 (2022) 973



Construction of high stability indium gallium zinc oxide transistor biosensors for reliable detection of bladder cancer-associated microRNA

Jing Guo^a, Ruichen Shen^c, Xuejie Shen^c, Bo Zeng^a, Nianjun Yang^d, Huageng Liang^b, Yanbing Yang^a, Quan Yuan^{a,c}

^aKey Laboratory of Biomedical Polymers of Ministry of Education, College of Chemistry and Molecular Sciences, School of Microelectronics, Wuhan University, Wuhan 430072, China

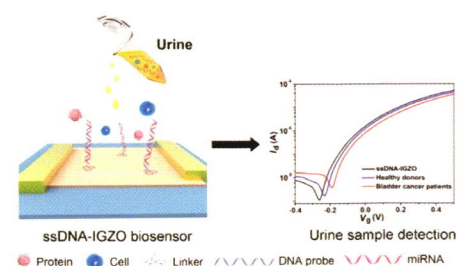
^bDepartment of Urology, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan 430022, China

^cInstitute of Chemical Biology and Nanomedicine, State Key Laboratory of Chemo/Biosensing and Chemometrics, College of Chemistry and Chemical Engineering, Hunan University, Changsha 410082, China

^dInstitute of Materials Engineering, University of Siegen, Siegen 57076, Germany

Construction of high stability indium gallium zinc oxide transistor biosensors for reliable detection of bladder cancer-associated biomarker miRNA in human urine samples.

Chinese Chemical Letters 33 (2022) 979



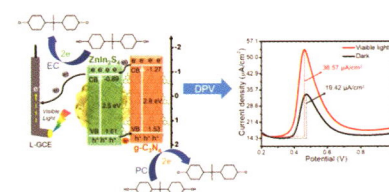
Label-free photoelectrochemical sensor based on 2D/2D ZnIn₂S₄/g-C₃N₄ heterojunction for the efficient and sensitive detection of bisphenol A

Qiaowei Chen, Chen Yuan, Chunyang Zhai

School of Materials Science and Chemical Engineering, Ningbo University, Ningbo 315211, China

A ZnIn₂S₄/g-C₃N₄ heterojunction was prepared via a simple hydrothermal method and employed it in the bisphenol A (BPA) photoelectrochemical (PEC) detection.

Chinese Chemical Letters 33 (2022) 983



Photolithography-free fabrication of photoresist-mold for rapid prototyping of microfluidic PDMS devices

Shanshan Qin^{a,b}, Gaozhi Ou^c, Biao Wang^a, Zheyu Li^{a,b}, Rui Hu^{a,b}, Ying Li^{a,b}, Yunhuang Yang^{a,b}

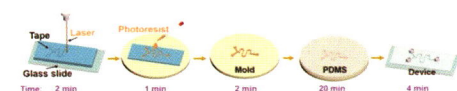
^aKey Laboratory of Magnetic Resonance in Biological Systems, State Key Laboratory of Magnetic Resonance and Atomic and Molecular Physics, National Center for Magnetic Resonance in Wuhan, Wuhan Institute of Physics and Mathematics, Innovation Academy for Precision Measurement Science and Technology, Chinese Academy of Sciences-Wuhan National Laboratory for Optoelectronics, Huazhong University of Science and Technology, Wuhan 430071, China

^bUniversity of Chinese Academy of Sciences, Beijing 10049, China

^cSchool of Physical Education, China University of Geosciences, Wuhan 430074, China

A photolithography-free method was proposed to fabricate photoresist-based mold for rapid prototyping of microfluidic PDMS devices within 30 min.

Chinese Chemical Letters 33 (2022) 987



Principles for designing CO₂ adsorption catalyst: Serving thermal conductivity as the determinant for reactivity

Chaozheng He^a, Haotian Wang^b, Ling Fu^d, Jinrong Huo^c, Zhiheng Zheng^e, Chenxu Zhao^a, Meng An^{b,f}

^aInstitute of Environmental and Energy Catalysis, School of Materials Science and Chemical Engineering, Xi'an Technological University, Xi'an 710021, China

^bCollege of Mechanical and Electrical Engineering, Shaanxi University of Science and Technology, Xi'an 710021, China

^cSchool of Sciences, Xi'an Technological University, Xi'an 710021, China

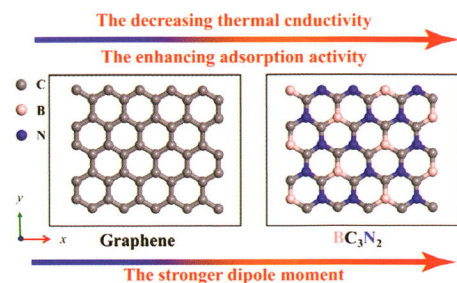
^dCollege of Resources and Environmental Engineering, Tianshui Normal University, Tianshui 741001, China

^eSchool of Energy and Materials, Shanghai Polytechnic University, Shanghai 201209, China

^fShanghai Engineering Research Center of Advanced Thermal Functional Materials, Shanghai Polytechnic University, Shanghai 201209, China

The heat conduction capability of the emerging two-dimensional BC₃N₂ substrate is demonstrated to serve as one of determinant for designing CO₂ adsorption catalyst.

Chinese Chemical Letters 33 (2022) 990



The reactivity of O₂ with copper cluster anions Cu_n[−] (n = 7–20): Leveling effect of spin accommodation

Qiuying Du^a, Baoqi Yin^b, Si Zhou^a, Zhixun Luo^b, Jijun Zhao^a

^aKey laboratory of Material Modification by Laser, Ion and Electron Beams (Dalian University of Technology), Ministry of Education, Dalian 116024, China

^bBeijing National Laboratory for Molecular Sciences (BNLMS), State Key Laboratory for Structural Chemistry of Unstable and Stable Species, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China

Systematic study on the gas-phase adsorption and dissociation of O₂ on Cu_n[−] (n = 7–20) cluster anions. We illustrate the chemisorption of O₂ on even- and odd-sized clusters follows single and double electron transfer models, respectively, which is enabled by the leveling effect of spin accommodation.

Chinese Chemical Letters 33 (2022) 995



Pt/TiO_{2-x} nanofibrous aerogel for effective nitrogen reduction: A simple strategy for simultaneous Pt formation and TiO_{2-x} vacancy engineering

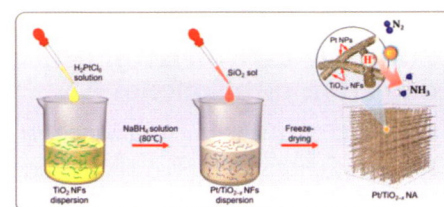
Meng Zhang^a, Jin Dai^a, Shengmei Huang^a, Dan Fang^b, Yitao Liu^a, Jianyong Yu^a, Bin Ding^a, Andreas Greiner^b

^aInnovation Center for Textile Science and Technology, College of Textiles, Donghua University, Shanghai 201620, China

^bMacromolecular Chemistry and Bavarian Polymer Institute, University of Bayreuth, Bayreuth 95440, Germany

A simple strategy is proposed to achieve the formation of Pt nanoparticles and the vacancy engineering of TiO_{2-x} nanofibers simultaneously, followed by the preparation of a Pt/TiO_{2-x} nanofibrous aerogel with excellent mechanical properties for effective electrocatalytic nitrogen reduction.

Chinese Chemical Letters 33 (2022) 1001



Trimetallic FeCoNi disulfide nanosheets for CO₂-emission-free methanol conversion

Yunan Yi^{a,c}, Junshan Li^a, Chunhua Cui^{a,b}

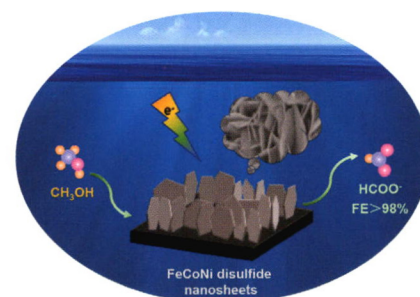
^aMolecular Electrochemistry Laboratory, Institute of Fundamental and Frontier Sciences, University of Electronic Science and Technology of China, Chengdu 610054, China

^bYangtze Delta Region Institute (Huzhou), University of Electronic Science and Technology of China, Huzhou 313001, China

^cDepartment of Mechanical Engineering, National University of Singapore, Singapore 117575, Singapore

This work offers a substantial composition tuning strategy to construct the low-cost and easily available trimetallic FeCoNi disulfide nanosheets for highly efficient and selective methanol-to-formate conversion, providing a promising approach to convert biomass into value-added chemicals.

Chinese Chemical Letters 33 (2022) 1006



Flexible, high sensitive and radiation-resistant pressure-sensing hydrogel

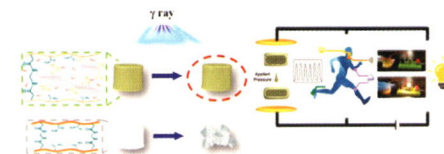
Zhiwen Jiang^a, Yusong Wang^b, Guoqing Xu^a, Zhuoni Jiang^a, Zhiqing Ge^a, Mozhen Wang^a, Xuewu Ge^a

^aCAS Key Laboratory of Soft Matter Chemistry, Department of Polymer Science and Engineering, University of Science and Technology of China, Hefei 230026, China

^bHefei National Laboratory for Physical Sciences at the Microscale, University of Science and Technology of China, Hefei 230026, China

Polyacrylamide hydrogel doped with tannic acid modified boron nitride nanosheets (BNNS-TA) and Fe³⁺ ions shows good mechanical property, pressure-responsibility, and γ-ray radiation resistance, which can be potentially applied as flexible pressure-sensitive sensors serving in high-energy radiation environments.

Chinese Chemical Letters 33 (2022) 1011



Multiple-quantum-well perovskite for hole-transport-layer-free light-emitting diodes

Peifeng Li^a, Jie Wang^a, Hong Chen^a, Hao Zhang^a, Cheng Li^{b,c}, Wenjie Xu^a, Renzhi Li^a, Lin Zhu^a, Nana Wang^a, Jianpu Wang^a

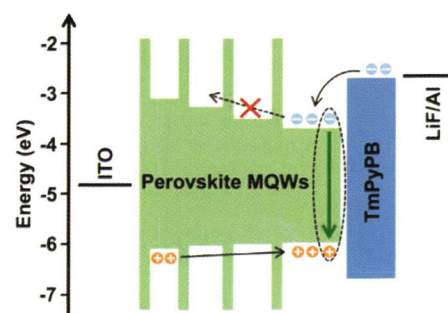
^a Key Laboratory of Flexible Electronics (KLOFE) & Institute of Advanced Materials (IAM), Nanjing Tech University (NanjingTech), Nanjing 211816, China

^b School of Electronic Science and Engineering, Xiamen University, Xiamen 361005, China

^c Future Display Institute of Xiamen, Xiamen 361005, China

Efficient hole-transport-layer-free light-emitting diodes are achieved based on self-assembled multiple-quantum-well perovskites.

Chinese Chemical Letters 33 (2022) 1017



Sulfur-substitution-enhanced crystallization and crystal structure of poly(trimethylene monothiocarbonate)

Xiaohan Cao^{a,b}, Hongliang Wang^c, Jialiang Yang^a, Ruiyang Wang^a, Xin Hong^c, Xinghong Zhang^{a,b}, Junting Xu^a, Hai Wang^d

^a MOE Key Laboratory of Macromolecular Synthesis and Functionalization, Department of Polymer Science and Engineering, Zhejiang University, Hangzhou 310027, China

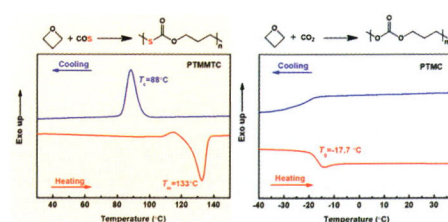
^b Center of Chemistry for Frontier Technologies, Zhejiang University, Hangzhou 310027, China

^c Department of Chemistry, Zhejiang University, Hangzhou 310027, China

^d Department of Polymer Science and Engineering, College of Chemical Engineering, Dalian University of Technology, Dalian 116024, China

PTMMTC possesses stronger crystallizability than corresponding PTMC. The sulfur-substitution-enhanced crystallization phenomenon can be interpreted from the rigid chains and the small bond angle of C-S-C bond of PTMMTC.

Chinese Chemical Letters 33 (2022) 1021



A hybrid lithium sulfonated polyoxadiazole derived single-ion conducting gel polymer electrolyte enabled effective suppression of dendritic lithium growth

Dazhe Li^a, Longbo Luo^a, Jiadeng Zhu^b, Haimei Qin^c, Pengqing Liu^a, Zhaomei Sun^a, Yi Lei^a, Mengjin Jiang^a

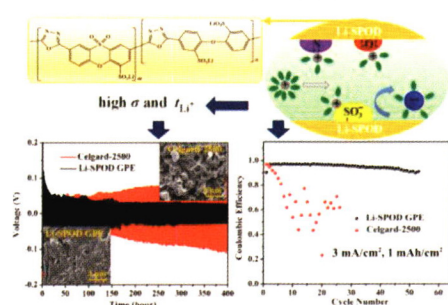
^a College of Polymer Science & Engineering, Sichuan University, Chengdu 610065, China

^b Chemical Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN 37831, United States

^c State Key Laboratory for Physical Chemistry of Solid Surfaces, Fujian Provincial Key Lab of Theoretical and Computational Chemistry, and College of Chemistry and Chemical Engineering, Xiamen University, Xiamen 361005, China

Li-SPOD-based hybrid GPE exhibits a high lithium-ion transference number and high ionic conductivity as well as superior interfacial compatibility with lithium, leading to effective suppression of lithium dendrites and remarkable performance improvements of lithium metal batteries.

Chinese Chemical Letters 33 (2022) 1025



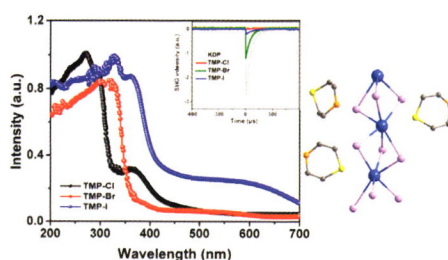
Tunable phase transition, band gap and SHG properties by halogen replacement of hybrid perovskites [(thiomorpholinium)PbX₃, X = Cl, Br, I]

Simin Liu, Lei He, Yuzhen Wang, Pingping Shi, Qiong Ye

Jiangsu Key Laboratory for Science and Applications of Molecular Ferroelectrics and School of Chemistry and Chemical Engineering, Southeast University, Nanjing 211189, China

By the replacement of the halogen anions, we synthesized new one-dimensional ABX₃-type perovskites, [(thiomorpholinium)PbX₃, X = Cl, Br, I] which underwent reversible phase transitions. And the band gap and SHG activity of (thiomorpholinium)PbX₃ (X = Cl, Br, I) crystals were tunable.

Chinese Chemical Letters 33 (2022) 1032



Controlled synthesis of core-shell $\text{Fe}_2\text{O}_3@\text{N-C}$ with ultralong cycle life for lithium-ion batteries

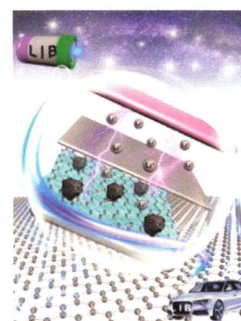
Hui Huang^a, Lingjun Kong^a, Wei Shuang^a, Wei Xu^a, Jie He^a, Xian-He Bu^{a,b}

^aSchool of Materials Science and Engineering, TKL of Metal and Molecule Based Material Chemistry, Nankai University, Tianjin 300350, China

^bKey Laboratory of Advanced Energy Materials Chemistry (Ministry of Education), College of Chemistry, Nankai University, Tianjin 300071, China

Fe_2O_3 encapsulated with N-doped carbon ($\text{Fe}_2\text{O}_3@\text{N-C}$) was prepared by ZIF-8 coating and carbonization process. The $\text{Fe}_2\text{O}_3@\text{N-C}$ composite exhibits a high specific capacity and cycle stability when used as the LIB anode.

Chinese Chemical Letters 33 (2022) 1037



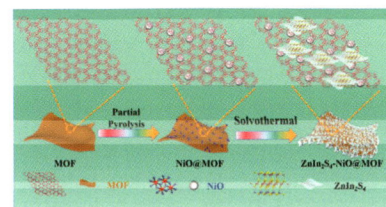
Hetero-structured $\text{ZnIn}_2\text{S}_4\text{-NiO@MOF}$ photo-catalysts for efficient hydrogen evolution

Hongyu Ma, Yong Liu, Rui Xiong, Jianhong Wei

Key Laboratory of Artificial Micro- and Nano-structures of Ministry of Education, and School of Physics and Technology, Wuhan University, Wuhan 430072, China

With the synergetic advantages of NiO co-catalyst and unique two-dimensional hetero-structure, $\text{ZnIn}_2\text{S}_4\text{-NiO@MOF}$ nano-sheets exhibited significantly improved activity for photo-catalytic hydrogen evolution.

Chinese Chemical Letters 33 (2022) 1042



Co-POM@MOF-derivatives with trace cobalt content for highly efficient oxygen reduction

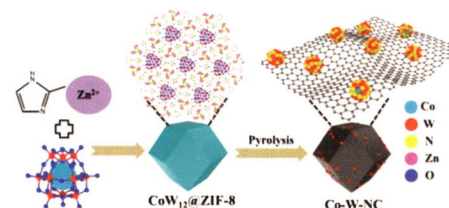
Yitao Song^a, Yewang Peng^a, Shuang Yao^a, Peng Zhang^a, Yujie Wang^a, Jianmin Gu^b, Tongbu Lu^a, Zhiming Zhang^a

^aInstitute for New Energy Materials and Low Carbon Technologies, School of Materials Science & Engineering, School of Chemistry and Chemical Engineering, Tianjin University of Technology, Tianjin 300384, China

^bState Key Laboratory of Metastable Materials Science and Technology (MMST), Yanshan University, Qinhuangdao 066004, China

A simple and effective method for constructing highly efficient oxygen reduction catalysts with trace amount of isolated cobalt centers was developed by the pyrolysis of Co-centered polyoxometalate@metal-organic framework (Co-POM@MOF). The Co-W-NC composite catalysts exhibit excellent ORR performance with a half-wave potential of 0.835 V in 0.1 mol/L KOH solution with excellent durability.

Chinese Chemical Letters 33 (2022) 1047



Associative vs. dissociative mechanism: Electrocatalysis of nitric oxide to ammonia

Chaozheng He^a, Jia Wang^a, Ling Fu^b, Chenxu Zhao^a, Jinrong Huo^c

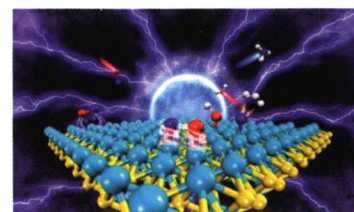
^aInstitute of Environment and Energy Catalysis, Shaanxi Key Laboratory of Optoelectronic Functional Materials and Devices, School of Materials Science and Chemical Engineering, Xi'an Technological University, Xi'an 710021, China

^bCollege of Resources and Environmental Engineering, Tianshui Normal University, Tianshui 741001, China

^cSchool of Sciences, Xi'an Technological University, Xi'an 710021, China

The mechanism of MBenes assisting NO electrocatalytic synthesis of ammonia is in-depth explored.

Chinese Chemical Letters 33 (2022) 1051



A comparative study on the reactivity of cationic niobium clusters with nitrogen and oxygen

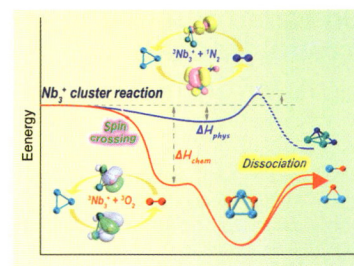
Benben Huang^{a,b}, Mengzhou Yang^{a,b}, Xin Lei^b, Wen Gan^{a,b}, Zhixun Luo^a

^aBeijing National Laboratory for Molecular Sciences (BNLMS), State Key Laboratory for Structural Chemistry of Unstable and Stable Species, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China

^bUniversity of Chinese Academy of Sciences, Beijing 100049, China

An in-depth study to compare the gas-phase reactivity of Nb_n^+ clusters with N_2 and O_2 is reported. We illustrate the physical and chemical adsorptions in initiating the electron donation and backdonation, and unveil the distinction of chemical bond dissociation for the two typical diatom molecules.

Chinese Chemical Letters 33 (2022) 1058



Enhanced catalytic activity of Ru through N modification toward alkaline hydrogen electrocatalysis

Yuanmeng Zhao^a, Xuwei Wang^a, Zhen Li^a, Pingping Zhao^b, Congliang Tao^c, Gongzhen Cheng^a, Wei Luo^{a,d,e}

^aCollege of Chemistry and Molecular Sciences, Wuhan University, Wuhan 430072, China

^bSchool of Printing and Packaging, Wuhan University, Wuhan 430072, China

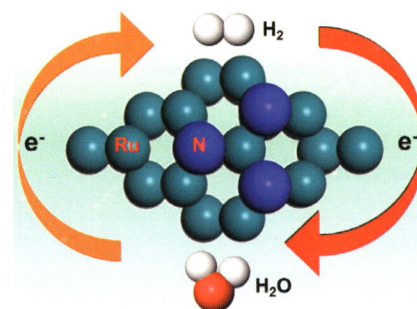
^cWuhan Foreign Language School, Wuhan 430022, China

^dSuzhou Institute of Wuhan University, Suzhou 215123, China

^eYangzhou Kairuite Medical Products Co., Ltd., Yangzhou 225200, China

The catalytic performance of Ru nanoparticles toward hydrogen oxidation reaction and hydrogen evolution reaction (HOR/HER) under alkaline media can be significantly enhanced through surface N modification. Experimental and density functional theory (DFT) calculation results indicate the enhanced HOR/HER performances are derived from optimized hydrogen adsorption Gibbs free energy (ΔG_{H^+}) of N-Ru/C after N incorporation.

Chinese Chemical Letters 33 (2022) 1065



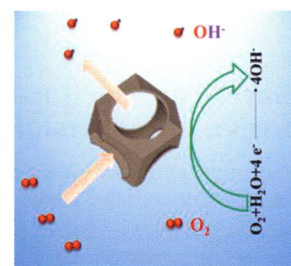
Single-atomic Fe anchored on hierarchically porous carbon frame for efficient oxygen reduction performance

Yaling Jia, Fangshuai Zhang, Qinglin Liu, Jun Yang, Jiahui Xian, Yamei Sun, Yinle Li, Guangqin Li

MOE Laboratory of Bioinorganic and Synthetic Chemistry, Lehn Institute of Functional Materials, School of Chemistry, Sun Yat-sen University, Guangzhou 510275, China

The low utilization and easy agglomeration of single atoms are problems to be solved urgently for their wide application in many catalyses. This work rationally designed a single atom Fe electrocatalyst loaded on a hierarchically super macro-porous carbon derived from ZIF-8 for high accessibility of the active sites with reaction intermediate and rapid mass transfer in oxygen reduction process.

Chinese Chemical Letters 33 (2022) 1070



Conductance of a single molecule C_{60} -SnPc heterojunction

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^aKey Laboratory for the Physics and Chemistry of Nanodevices and Center for Carbon-based Electronics, Department of Electronics, Peking University, Beijing 100871, China

^bCEMES-CNRS, Boîte Postale 94347, Toulouse 31055, France

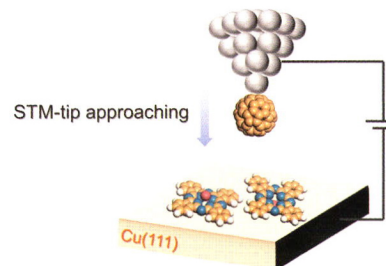
^cInstitut für Experimentelle und Angewandte Physik, Christian-Albrechts-Universität zu Kiel, Kiel D-24098, Germany

^dBeijing Academy of Quantum Information Sciences, Beijing 100193, China

^eInstitute of Spin Science and Technology, South China University of Technology, Guangzhou 511442, China

The current transport of a single-molecule C_{60} -SnPc heterojunction is measured by low-temperature STM. The measured conductance map visualizes the charge transfer channel in the molecule junction.

Chinese Chemical Letters 33 (2022) 1074



Automated synthesis of gadopentetate dimeglumine through solid-liquid reaction in femtosecond laser fabricated microfluidic chips

Difeng Yin^{a,b}, Yucen Li^c, Lingling Xia^c, Wenbo Li^{a,b,d}, Wei Chu^e, Jianping Yu^{a,b}, Miao Wu^c, Ya Cheng^{a,d,e}, Ming Hu^c

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^bCenter of Materials Science and Optoelectronics Engineering, University of Chinese Academy of Sciences, Beijing 100049, China

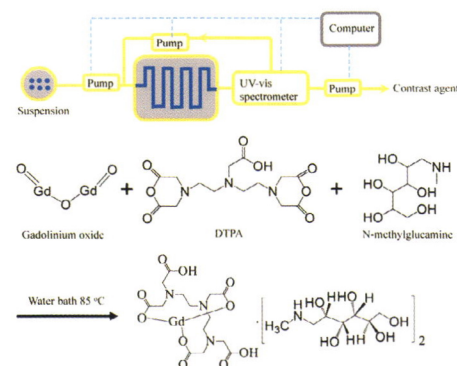
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^dSchool of Physical Science and Technology, ShanghaiTech University, Shanghai 200031, China

^eXXL – The Extreme Optoelectromechanics Laboratory, School of Physics and Electronic Science, East China Normal University, Shanghai 200241, China

An automated solid-liquid synthesis has been developed for gadopentetate dimeglumine, the most widely used magnetic resonance imaging (MRI) contrast agent.

Chinese Chemical Letters 33 (2022) 1077



CoCo-PBA/tetrabutylammonium bromide as highly efficient catalyst for CO₂ and epoxides coupling reaction under mild conditions

Munir Ullah Khan^a, Safir Ullah Khan^b, Jiraya Kiriratnikom^a, Shah Zareen^c, Xinghong Zhang^a

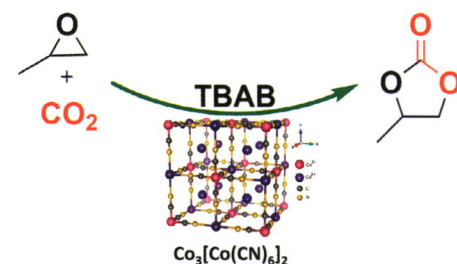
^aMOE Key Laboratory of Macromolecular Synthesis and Functionalization, Department of Polymer Science and Engineering, Zhejiang University, Hangzhou 310027, China

^bHefei National Laboratory for Physical Science at the Microscale, School of Life Sciences, University of Science and Technology of China, Hefei 230027, China

^cNational Synchrotron Radiation Laboratory, Department of Chemical Physics and Key Laboratory of Surface and Interface Chemistry and Energy Catalysis of Anhui Higher Education Institutes, University of Science and Technology of China, Hefei 230029, China

Heterogeneous cobalt Prussian blue analogue (CoCo-PBA) is proven to be the superior catalyst for CO₂ and epoxide coupling to produce cyclic carbonates with >99% yield under mild reaction conditions (1.0 MPa, 65 °C).

Chinese Chemical Letters 33 (2022) 1081



Multilayer core-shell nanostructures for enhanced 808 nm responsive upconversion

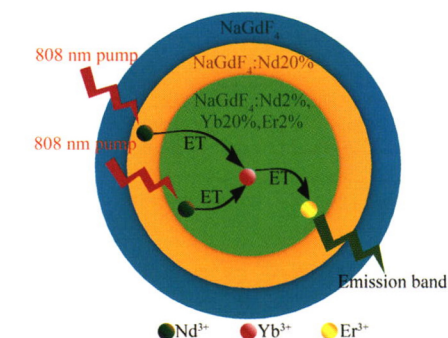
Yao Wang^a, Jingxiang Low^a, Yafei Bi^a, Yu Bai^a, Yawen Jiang^a, Huihui Wang^a, Weiyong Liu^b, Yuqian Ma^a, Yunuo Chen^a, Ran Long^a, Yujie Xiong^{a,b}

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^bDepartment of Ultrasound, The First Affiliated Hospital of USTC, Division of Life Sciences and Medicine, University of Science and Technology of China, Hefei 230036, China

Multilayer core-shell nanostructures boost an outstanding upconversion emission enhancement at 808 nm excitation via the design of doping lanthanide ions into different shells.

Chinese Chemical Letters 33 (2022) 1087



Li-ion charge storage performance of wood-derived carbon fibers@MnO as a battery anode

Qinyuan Huang^a, Jinbo Hu^{a,b,c}, Mei Zhang^a, Mengxiao Li^a, Ting Li^c, Guangming Yuan^a, Yuan Liu^a, Xiang Zhang^{a,b}, Xiaowei Cheng^d

^aCollege of Materials Science and Engineering, Central South University of Forestry and Technology, Changsha 410004, China

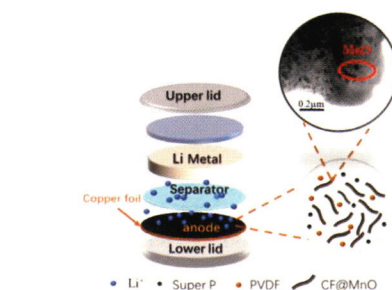
^bHunan Province Key Laboratory of Materials Surface & Interface Science and Technology, Central South University of Forestry and Technology, Changsha 410004, China

^cHunan Taohuajiang Bamboo Science & Technology Co., Ltd., Taojiang 413400, China

^dDepartment Chemistry, Fudan University, Shanghai 200433, China

Using a facile hydrothermal method, the CF@MnO composite material was reasonably synthesized by embedding MnO nanoparticles on wood-derived carbon fibers, which was used as a potential sustainable anode material of lithium-ion battery.

Chinese Chemical Letters 33 (2022) 1091



Plasma treated carbon paper electrode greatly improves the performance of iron-hydrogen battery for low-cost energy storage

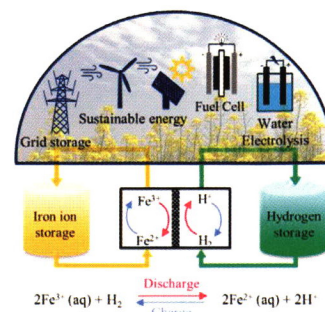
Chuang Bai^{a,b}, Fandi Ning^{a,b}, Saifei Pan^{a,b}, Huihui Wang^b, Yali Li^{a,b}, Min Shen^b, Xiaochun Zhou^{a,b}

^aSchool of Nano-Tech and Nano-Bionics, University of Science and Technology of China, Hefei 230026, China

^bDivision of Advanced Nanomaterials, Suzhou Institute of Nano-tech and Nano-bionics, Chinese Academy of Sciences (CAS), Suzhou 215123, China

Non-toxic and low-cost iron-hydrogen battery is enhanced with the plasma treated cathode, and can play a role of energy storage and conversion and is beneficial to the green economy.

Chinese Chemical Letters 33 (2022) 1095



Self-assemblies of TTF derivatives with fluorinated phenyls and pyridine group

Jianghua Fang^a, Xiaoyang Zhu^b, Wendi Luo^b, Jianxun Shi^c, Lejia Wang^a, Bin Tu^b, Qingdao Zeng^b, Xunwen Xiao^a

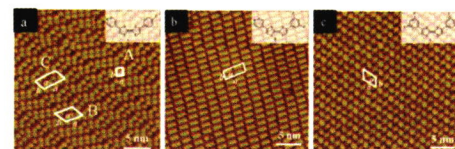
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^bCAS Key Laboratory of Standardization and Measurement for Nanotechnology, CAS Center for Excellence in Nanoscience, National Center for Nanoscience and Technology (NCNST), Beijing 100190, China

^cZhejiang Pharmaceutical College, Ningbo 315100, China

By comparing the assembly structures of three molecules **1-3** at 1-phenyloctane/HOPG interface, the influence of different F atom and pyridine group connected TTF core was investigated and DFT calculations had been performed to reveal the self-assembly mechanism.

Chinese Chemical Letters 33 (2022) 1100



Microwave-assisted hydrothermal synthesis of NiMoO₄ nanorods for high-performance urea electrooxidation

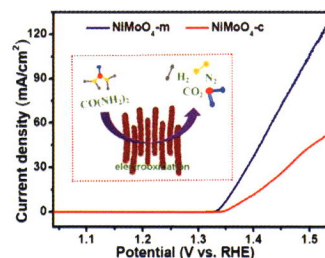
Shuli Wang^a, Jiayun Zhu^a, Xiang Wu^b, Ligang Feng^a

^aSchool of Chemistry and Chemical Engineering, Yangzhou University, Yangzhou 225002, China

^bSchool of Materials Science and Engineering, Shenyang University of Technology, Shenyang 110870, China

Microwave-assisted hydrothermal synthesis method is more promising for nanostructured electrocatalysts fabrication compared to the conventional hydrothermal method.

Chinese Chemical Letters 33 (2022) 1105



New electron-donating segment to develop thermally activated delayed fluorescence emitters for efficient solution-processed non-doped organic light-emitting diodes

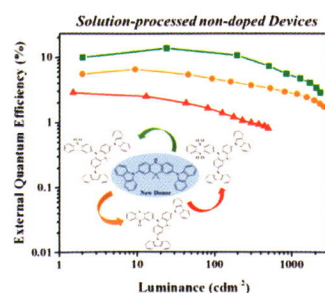
Ming Zhang^{a,b}, Gaole Dai^b, Caijun Zheng^a, Kai Wang^b, Yizhong Shi^b, Xiaochun Fan^b, Hui Lin^a, Silu Tao^a, Xiaohong Zhang^b

^aSchool of Optoelectronic Science and Engineering, University of Electronic Science and Technology of China (UESTC), Chengdu 610054, China

^bInstitute of Functional Nano & Soft Materials (FUNSOM), Soochow University, Suzhou 215123, China

A new electron-donating segment 2Cz-DMAC was proposed to develop solution-processable non-doped TADF emitters. Accordingly, 2Cz-DMAC-BTB, 2Cz-DMAC-TXO and 2Cz-DMAC-TTR were designed and synthesized, realizing green, orange and red emissions with maximum EQEs of 14.0%, 6.6% and 2.9% in the solution-processed non-doped OLEDs.

Chinese Chemical Letters 33 (2022) 1110



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