

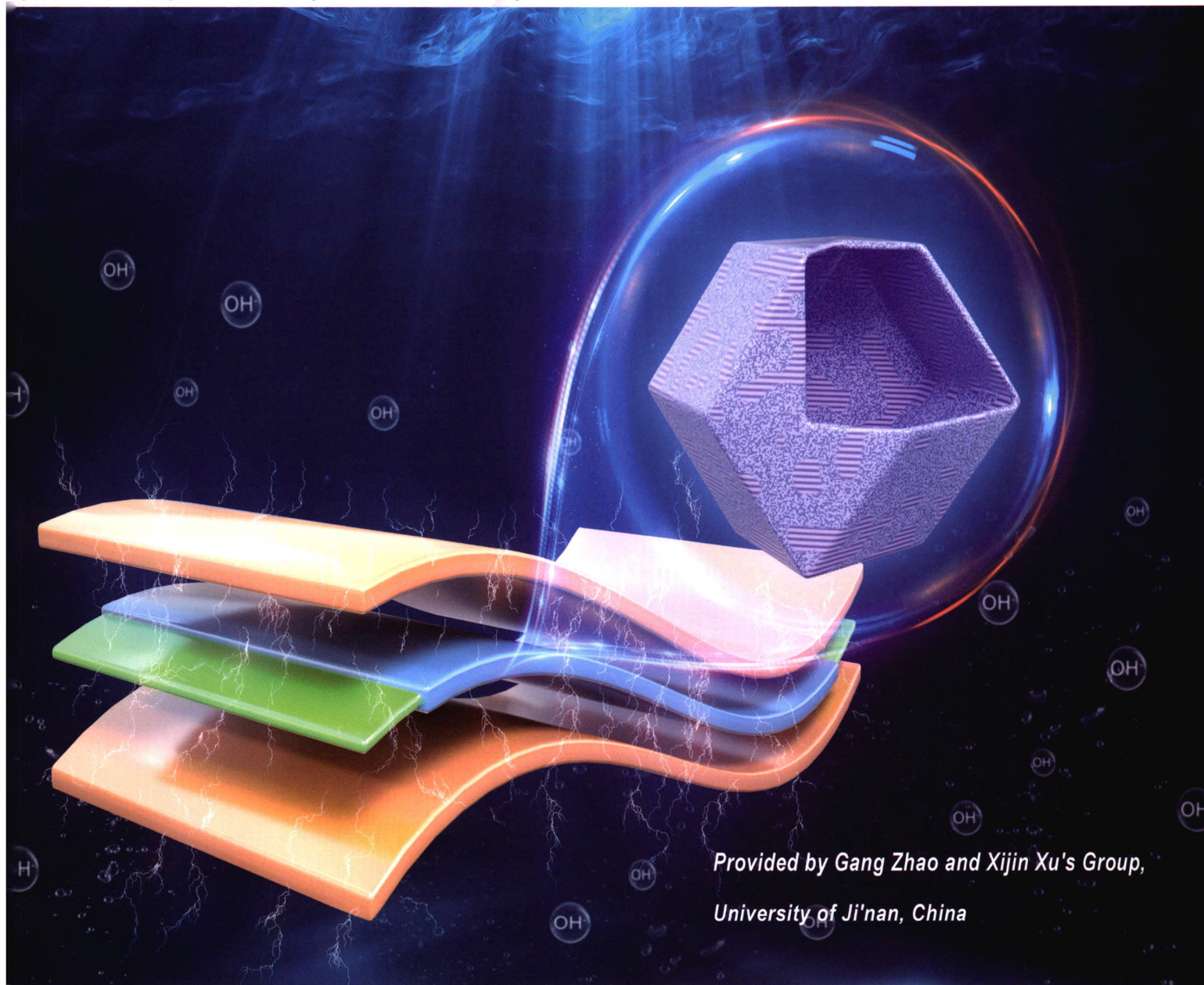
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Chinese Chemical Letters (中国化学快报)

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*Provided by Gang Zhao and Xijin Xu's Group,
University of Ji'nan, China*



REVIEW
Jun Yin et al.
Visible and near-infrared light activated
azo dyes

COMMUNICATION
Zhaohui Wang et al.
Effects of exogenic chloride on oxidative
degradation of chlorinated azo dye by
UV-activated peroxodisulfate

Chinese Chemical Society

Institute of Materia Medica, Chinese Academy of Medical Sciences

万方数据



Graphical Abstracts/Chin Chem Lett 32 (2021) iii–xiv

Reviews

Challenges in cell membrane-camouflaged drug delivery systems: Development strategies and future prospects

Xinlong Liu, Xin Zhong, Chong Li

College of Pharmaceutical Sciences, Southwest University, Chongqing 400715, China

Cell membrane camouflaged drug delivery systems have attracted attention because of their high biocompatibility and strong targeting specificity. This review analyzes the challenges faced by the cell membrane camouflaged drug delivery system in cell membrane material extraction, oriented assembly, and continuous industrial production. We also discuss the solution strategies to the challenges and summarize the medical frontier applications of cell membrane camouflaged drug delivery systems.

Chinese Chemical Letters 32 (2021) 2347



Visible and near-infrared light activated azo dyes

Huijuan Chen^{a,b}, Weijie Chen^{a,b}, Yan Lin^d, Yuan Xie^c, Sheng Hua Liu^{a,b}, Jun Yin^{a,b,c}

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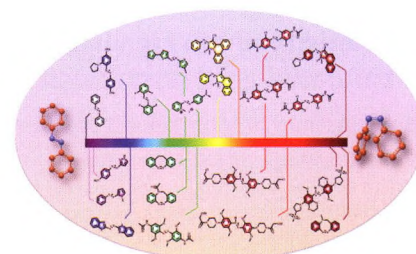
^b Ministry of Education Key Laboratory for the Synthesis and Application of Organic Functional Molecules, Hubei University, Wuhan 430062, China

^c Guangdong Provincial Key Laboratory of Radioactive and Rare Resource Utilization, Shaoguan 512026, China

^d Department of Pharmacy, Jiangxi University of Traditional Chinese Medicine, Nanchang 330013, China

This review mainly introduces azo dyes that can be driven by visible/near-infrared light in recent years.

Chinese Chemical Letters 32 (2021) 2359



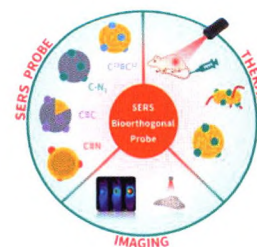
Development of bioorthogonal SERS imaging probe in biological and biomedical applications

Chonggui Qiu, Ziyi Cheng, Chuanzhu Lv, Rui Wang, Fabiao Yu

The First Affiliated Hospital of Hainan Medical University, Key Laboratory of Emergency and Trauma, Ministry of Education, Key Laboratory of Hainan Trauma and Disaster Rescue, Institute of Functional Materials and Molecular Imaging, College of Pharmacy, College of Emergency and Trauma, Hainan Medical University, Haikou 571199, China

We review the recent advances of bioorthogonal SERS imaging for visualization of various intracellular components and environment including proteins, nucleic acids, lipids, pH and hypoxia, and various bioorthogonal SERS imaging-guided therapy strategies such as phototherapy and surgery.

Chinese Chemical Letters 32 (2021) 2369



Communications

A H₂S-triggered two-photon ratiometric fluorescent theranostic prodrug for bio-imaging

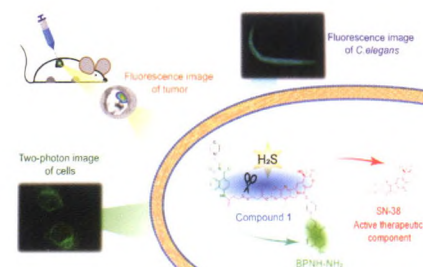
Xianghua Wu^a, Yuxun Lu^b, Bo Liu^a, Yu Chen^a, Junfeng Zhang^a, Ying Zhou^b

^a College of Chemistry and Chemical Engineering, Yunnan Normal University, Kunming 650500, China

^b College of Chemical Science and Technology, Yunnan University, Kunming 650091, China

We designed and synthesized a ratiometric fluorescent prodrug capable of releasing active therapeutic component while detecting hydrogen sulfide.

Chinese Chemical Letters 32 (2021) 2380



Light-up lipid droplets for the visualization of lipophagy and atherosclerosis by coumarin-derived bioprobe

Jinrong Zheng^a, Shuheng Qin^a, Lijuan Gui^a, Hua Li^a, Lixue Fan^a, Yifei Yang^b, Haiyan Chen^a, Hui Xu^c, Zhenwei Yuan^a

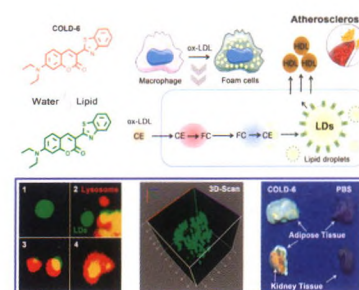
^a Department of Biomedical Engineering, School of Engineering, China Pharmaceutical University, Nanjing 210009, China

^b School of Pharmacy, Key Laboratory of Molecular Pharmacology and Drug Evaluation (Yantai University), Ministry of Education, Collaborative Innovation Center of Advanced Drug Delivery System and Biotech Drugs in Universities of Shandong, Yantai University, Yantai 264005, China

^c Department of Food Quality and Safety, College of Food Science and Engineering/ Collaborative Innovation Center for Modern Grain Circulation and Safety/Key Laboratory of Grains and Oils Quality Control and Processing, Nanjing University of Finance and Economics, Nanjing 210023, China

We focused on the exploration of structural factors affect the solvatochromism of coumarins to establish a new design strategy of LDs probe, and then develop suitable fluorogenic probe for the visualization of LDs-associated behavior and LDs-rich tissue in atherosclerotic plaque.

Chinese Chemical Letters 32 (2021) 2385



The density of surface ligands regulates the luminescence of thiolated gold nanoclusters and their metal ion response

Jie Xu^a, Juanmin Li^a, Wencheng Zhong^a, Mengyao Wen^a, Gleb Sukhorukov^{b,c}, Li Shang^{a,b}

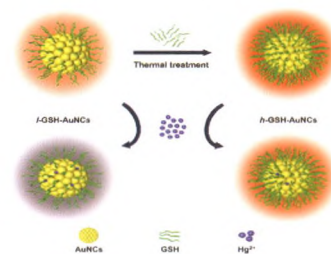
^a State Key Laboratory of Solidification Processing, School of Materials Science and Engineering, Northwestern Polytechnical University and Shaanxi Joint Laboratory of Graphene (NPU), Xi'an 710072, China

^b NPU-QMUL Joint Research Institute of Advanced Materials and Structures (JRI-AMAS), Northwestern Polytechnical University, Xi'an 710072, China

^c Materials Research Institute, School of Engineering and Materials Science, Queen Mary University of London, London E1 4NS, United Kingdom

The density of thiolated ligands can significantly regulate the luminescence properties of AuNCs in a highly structure-dependent manner, and differences in the surface coverage of AuNCs can further modulate their interactions with foreign species, as illustrated by significantly different fluorescence quenching capability of GSH-AuNCs towards Hg²⁺.

Chinese Chemical Letters 32 (2021) 2390



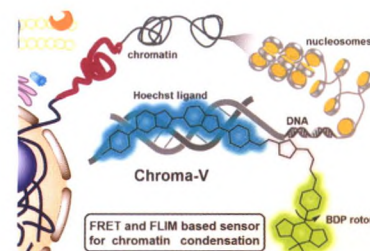
Assessing chromatin condensation for epigenetics with a DNA-targeting sensor by FRET and FLIM techniques

Xinfu Zhang, Lu Wang, Ning Li, Yi Xiao

State Key Laboratory of Fine Chemicals, Dalian University of Technology, Dalian 116024, China

A fluorophore dyad consist of Hoechst and BODIPY rotor was designed to monitor viscosity of nucleus. This quantitatively measurement of chromatin condensation level may indicate gene activity in live cells.

Chinese Chemical Letters 32 (2021) 2395



Tirapazamine encapsulated hyaluronic acid nanomicelles realized targeted and efficient photo-bioreductive cascading cancer therapy

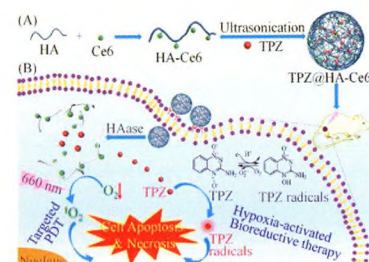
Chunhui Wu^a, Qiuyue Liu^a, Yikun Wang^a, Zhengxin Xie^a, Honglin Huang^a, Ningxi Li^a, Xiaodan Wei^a, Geng Yang^a, Tingting Li^a, Hong Yang^a, Shun Li^a, Xiang Qin^a, Yiyao Liu^{a,b}

^a Department of Biophysics, School of Life Science and Technology, University of Electronic Science and Technology of China, Chengdu 610054, China

^b TCM Regulating Metabolic Diseases Key Laboratory of Sichuan Province, Hospital of Chengdu University of Traditional Chinese Medicine, Chengdu 610072, China

In this study, a facile but effective nanoplatfrom of hyaluronic acid nanomicelles baring with prodrug tirapazamine (TPZ) and photosensitizer (chlorin e6, Ce6) was demonstrated for the targeted and highly efficient photo-bioreductive cascading oncotherapy.

Chinese Chemical Letters 32 (2021) 2400



Mn²⁺-doped ZrO₂@PDA nanocomposite for multimodal imaging-guided chemo-photothermal combination therapy

Ning Chen^a, Wenhui Fu^a, Jie Zhou^b, Linqiang Mei^b, Jimin Yang^c, Yang Tian^a, Qiang Wang^a, Wenyan Yin^{b,d}

^a Laboratory for Micro-sized Functional Materials, Department of Chemistry and College of Elementary Education, Capital Normal University, Beijing 100048, China

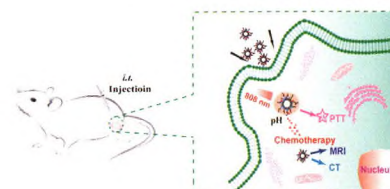
^b CAS Key Laboratory for Biomedical Effects of Nanomaterials and Nanosafety, CAS-HKU Joint Laboratory of Metallomics on Health and Environment, Beijing Metallomics Facility, National Consortium for Excellence in Metallomics, Institute of High Energy Physics, Chinese Academy of Sciences, Beijing 100049, China

^c School of Chemistry and Chemical Engineering, Linyi University, Linyi 276005, China

^d Laboratory of Nano-Bio Interface, Suzhou Institute of NanoTech and Nano-Bionics, Chinese Academy of Sciences, Suzhou 215123, China

An inorganic-organic hybrid nanocomposite (Tween-ZrO₂@PDA-Mn²⁺) was designed as a highly biocompatible and multifunctional platform for controllable chemotherapeutic drug DOX release triggered by NIR laser irradiation induced heat and acidic pH value of tumor microenvironment. The Tween-ZrO₂@PDA-Mn²⁺ nanocomposite provides a great potential for multimodality CT and MR imaging-guided chemo-photothermal combination cancer therapy.

Chinese Chemical Letters 32 (2021) 2405



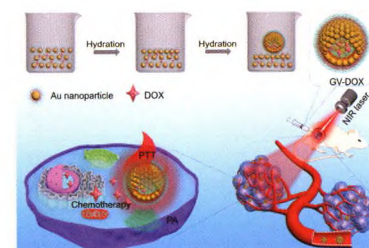
Mild hyperthermia-enhanced chemo-photothermal synergistic therapy using doxorubicin-loaded gold nanovesicles

Zhuoting Deng, Chao Jiang, Muhammad Rizwan Younis, Shan Lei, Yaling He, Haoxing Zheng, Peng Huang, Jing Lin

Marshall Laboratory of Biomedical Engineering, International Cancer Center, Laboratory of Evolutionary Theranostics (LET), School of Biomedical Engineering, Shenzhen University Health Science Center, Shenzhen 518060, China

We developed doxorubicin-loaded gold nanovesicles (DGVs), offering infrared thermal (IRT) and photoacoustic (PA) dual-modal imaging guided mild hyperthermia-enhanced chemo-photothermal cancer synergistic therapy. The DGVs are self-assembled by gold nanoparticles modified with amphiphilic copolymer in a predetermined concentration of doxorubicin through film rehydration method. Under the influence of laser excitation, the as-prepared DGVs exhibited good photothermal effect, which triggered the structural disruption of GVs and thus, allowed the efficient release of encapsulated DOX to enhance cell uptake for fluorescence imaging and tumor chemotherapy, respectively.

Chinese Chemical Letters 32 (2021) 2411



Phenol-triggered supramolecular transformation of titanium-oxo cluster based coordination capsules

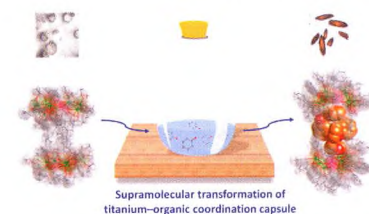
Xi Fan^{a,b}, Lvbing Yuan^a, Jian Zhang^a, Lei Zhang^a

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

^b Fujian Provincial Key Laboratory of Polymer Materials, College of Chemistry and Materials Science, Fujian Normal University, Fuzhou 350007, China

Supramolecular transformation of titanium-organic coordination capsule has been induced by phenol.

Chinese Chemical Letters 32 (2021) 2415



Toward photocatalytic hydrogen generation over BiVO₄ by controlling particle size

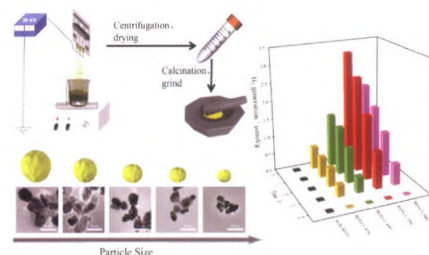
Mengdi Sun^a, Zemin Zhang^b, Qiujiu Shi^a, Jianlong Yang^a, Mingzheng Xie^a, Weihua Han^b

^a Key Laboratory of Western China's Environmental Systems of the Ministry of Education, Key Laboratory for Environmental Pollution Prediction and Control of Gansu Province, College of Earth and Environmental Sciences, Lanzhou University, Lanzhou 730000, China

^b School of Physical Science and Technology, Lanzhou University, Lanzhou 730000, China

Hydrogen production over nano-sized BiVO₄ is achieved benefiting from elevated conduction band, enlarged specific surface area and promoted charge separation.

Chinese Chemical Letters 32 (2021) 2419



Insight understanding into influence of binding mode of carboxylate with metal ion on ligand-centered luminescence properties in Pb-based coordination polymers

Xusheng Gao^a, Liduo Zhao^a, Meijuan Ding^a, Xiaozu Wang^b, Lu Zhai^a, Xiaoming Ren^{a,c,d}

^a State Key Laboratory of Materials-Oriented Chemical Engineering and College of Chemistry & Molecular Engineering, Nanjing Tech University, Nanjing 211816, China

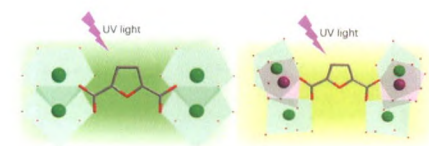
^b College of Chemical Engineering, Nanjing Tech University, Nanjing 211816, China

^c College of Materials Science and Engineering, Nanjing Tech University, Nanjing 211816, China

^d State Key Laboratory of Coordination Chemistry, School of Chemistry and Chemical Engineering, Nanjing University, Nanjing 210023, China

Two Pb-based coordination polymers emit room temperature ligand-centered phosphorescence with high quantum yield, which color is strongly dependent on the binding mode of carboxylate with Pb²⁺ ion.

Chinese Chemical Letters 32 (2021) 2423



Cu/Cu₂O nanoparticles co-regulated carbon catalyst for alkaline Al-air batteries

Jing Tian^a, Depei Liu^b, Jingsha Li^{a,c}, Dan Sun^a, Hongtao Liu^a, Haiyan Wang^{a,d}, Yougen Tang^a

^a Hunan Provincial Key Laboratory of Chemical Power Sources, College of Chemistry and Chemical Engineering, Central South University, Changsha 410083, China

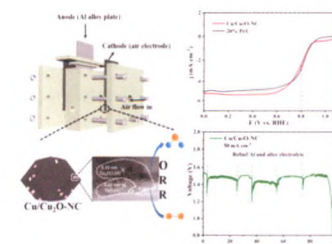
^b Eco-materials and Renewable Energy Research Center (ERERC), National Laboratory of Solid State Microstructures, Collaborative Innovation Center of Advanced Microstructures, School of Physics, Nanjing University, Nanjing 210093, China

^c Institute of Materials Science and Devices, Suzhou University of Science and Technology, Suzhou 215011, China

^d Key Laboratory of Preparation and Application of Environmental Friendly Materials of Ministry of Education, Jilin Normal University, Changchun 130103, China

The Cu/Cu₂O-NC catalyst, prepared by co-pyrolysis of copper phthalocyanine and ZIF-8, exhibits excellent ORR activity and high stability due to the synergistic effect of Cu and Cu₂O nanoparticles.

Chinese Chemical Letters 32 (2021) 2427



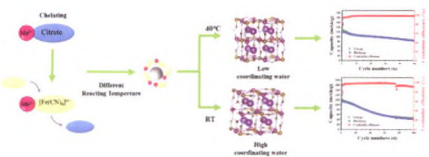
Low-coordination water Prussian white as cathode for high-performance potassium-ion batteries

Yang Xia, Wei Jin, Yanyuan Qi, Hang Li, Zelang Jian, Wen Chen

State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, School of Materials Science and Engineering, Wuhan University of Technology, Wuhan 430070, China

This work provides a modified co-precipitation method to synthesize Prussian white cathodes with low coordinated water content in nonaqueous potassium-ion batteries, which exhibit the promising electrochemical performance. We successfully prepared Prussian white with low-coordination water by using potassium citrate as a chelate, and controlling reaction temperature. We discussed the relationship between coordination water content and their performance.

Chinese Chemical Letters 32 (2021) 2433



MOF-template derived hollow $\text{CeO}_2/\text{Co}_3\text{O}_4$ polyhedrons with efficient cathode catalytic capability in Li-O_2 batteries

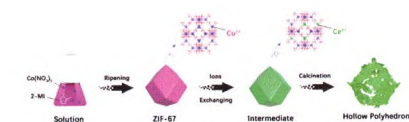
Pengxiang Zhang^{a,b}, Jiajia Li^b, Juanjuan Feng^a, Yu Wang^b, Aili Xu^b, Tingting Chen^a, Lingwen Zhao^a, Feng Dang^b, Xihua Zhang^b, Hongchao Wang^a

^a School of Physics, State Key Laboratory of Crystal Materials, Shandong University, Ji'nan 250100, China

^b Key Laboratory for Liquid-Solid Structural Evolution and Processing of Materials (Ministry of Education), Shandong University, Ji'nan 250061, China

Hollow porous $\text{CeO}_2/\text{Co}_3\text{O}_4$ polyhedrons with abundant exposed reactive sites were synthesized by MOF template with a simple method, which exhibits efficient performance of cathode catalytic in Li-O_2 batteries.

Chinese Chemical Letters 32 (2021) 2438



Selective sensing of Cr^{VI} and Fe^{III} ions in aqueous solution by an exceptionally stable Tb^{III} -organic framework with an AIE-active ligand

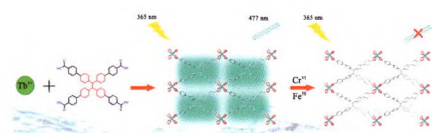
Jing-Jing Pang^a, Rui-Huan Du^a, Xin Lian^a, Zhao-Quan Yao^a, Jian Xu^a, Xian-He Bu^{a,b}

^a School of Materials Science and Engineering, National Institute for Advanced Materials, Tianjin Key Laboratory of Metal and Molecule-Based Material Chemistry, Nankai University, Tianjin 300350, China

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

A water-stable lanthanide MOF exhibits the ligand-centered fluorescence that features a highly sensitive and selective "turn-off" response toward CrO_4^{2-} , $\text{Cr}_2\text{O}_7^{2-}$ and Fe^{3+} ions in the aqueous solution.

Chinese Chemical Letters 32 (2021) 2443



Fabrication of 3D ordered needle-like polyaniline@hollow carbon nanofibers composites for flexible supercapacitors

Xuepeng Ni^a, Yang Jiang^c, Haoyu Chen^a, Kunming Li^a, Huifang Chen^{a,b}, Qilin Wu^{a,b}, Anqi Ju^{a,b}

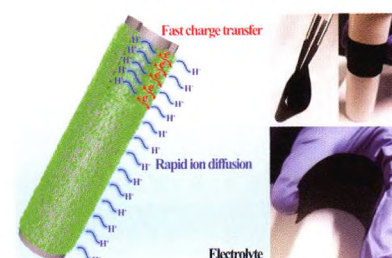
^a College of Materials Science and Engineering & State Key Laboratory for Modification of Chemical Fibers and Polymer Materials, Donghua University, Shanghai 201620, China

^b Key Laboratory of High-Performance Fibers & Products, Ministry of Education, Donghua University, Shanghai 201620, China

^c Zhejiang Provincial Key Laboratory of Yarn Material Forming and Composite Processing Technology, Jiaying University, Jiaxing 314001, China

A 3D flexible ordered needle-like polyaniline/hollow carbon nanofiber (HCNFs/PANI) electrodes were prepared to manufacture symmetric supercapacitors by facilely electrospinning and *in-situ* polymerization method. Moreover, the ordered needle-like polyaniline was perpendicularly grown on inner and outer surface of HCNFs, which provided more contact area and rapid ion diffusion as well as fast charge transfer between electrodes and electrolytes.

Chinese Chemical Letters 32 (2021) 2448



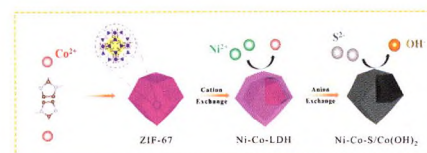
Hollow polyhedron structure of amorphous Ni-Co-S/Co(OH)_2 for high performance supercapacitors

Xixi Zhang, Guangmeng Qu, Zonghua Wang, Guotao Xiang, Shuhua Hao, Xiaoke Wang, Xijin Xu, Wenxuan Ma, Gang Zhao

School of Physics and Technology, University of Jinan, Ji'nan 250022, China

Here, we proposed a multistep ion exchange (cation exchange and anion exchange) strategy to synthesize amorphous Ni-Co-S and polycrystalline $\beta\text{-Co(OH)}_2$ hybrid nanomaterials with a hollow polyhedron structure. Benefiting from synergistic effects of different components and the remarkable superiorities of hollow structure, the electrode material possesses higher energy storage performance with the higher capacity of 1440.0 C/g at 1 A/g and the corresponding hybrid supercapacitor enjoys a high energy density of 58.4 Wh/kg at the power density of 0.8 kW/kg.

Chinese Chemical Letters 32 (2021) 2453



Improving cycling stability of Bi-encapsulated carbon fibers for lithium/sodium-ion batteries by Fe₂O₃ pinning

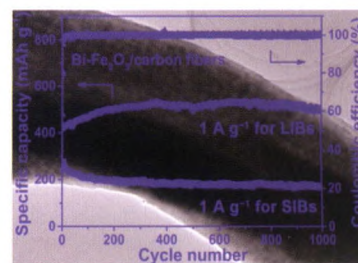
Tianyi Hou^a, Anran Fan^a, Xiaohong Sun^a, Xi Zhang^a, Zhongkai Xu^a, Shu Cai^a, Chunming Zheng^b

^a School of Materials Science and Engineering, Key Laboratory of Advanced Ceramics and Machining Technology of Ministry of Education, Tianjin University, Tianjin 300072, China

^b School of Chemistry and Chemical Engineering, State Key Laboratory of Hollow-Fiber Membrane Materials and Membrane Processes, Tiangong University, Tianjin 300387, China

The introduction of Fe₂O₃ nanoparticles to Bi-encapsulated carbon fibers can prevent Bi nanoparticles from further growing and aggregating during preparation and cycling processes, thus leading to long-term stability.

Chinese Chemical Letters 32 (2021) 2459



Application of ion-in-conjugation molecules in resistive memories and gas sensors: The role of conjugation

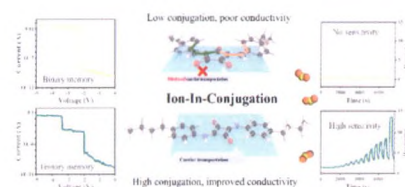
Jialiwei Wei^a, Jie Li^b, Chuang Yu^a, Qimeng Sun^a, Jinghui He^a, Jianmei Lu^a

^a College of Chemistry, Chemical Engineering and Materials Science, Collaborative Innovation Center of Suzhou Nano Science and Technology, National United Engineering Laboratory of Functionalized Environmental Adsorption Materials, Soochow University, Suzhou 215123, China

^b Shanghai Institute of Measurement and Testing Technology, Shanghai 201203, China

Ion-in-conjugation materials SA-Bu and CA-Bu were synthesized. A comparative study of two molecules found that ion-in-conjugation materials with better conjugation could be employed to greatly promote the optimization of resistive memory and gas sensor devices.

Chinese Chemical Letters 32 (2021) 2463



Structural insights of catalytic intermediates in dialumene based CO₂ capture: Evidences from theoretical resonance Raman spectra

Baoling Tian^a, Shujuan Li^b, Shulai Lei^b, Liangxu Lin^c, Wenyue Guo^d, Hao Ren^d

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

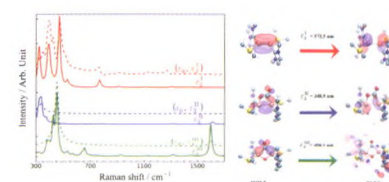
^b Hubei Key Laboratory of Low Dimensional Optoelectronic Materials and Devices, Hubei University of Arts and Science, Xiangyang 441053, China

^c ARC Centre of Excellence for Electromaterials Science, Intelligent Polymer Research Institute, Australia Institute for Innovative Materials (AIIM), Innovation Campus, University of Wollongong, Wollongong 2519, Australia

^d School of Materials Science and Engineering, China University of Petroleum (East China), Qingdao 266580, China

Ab-initio simulations of spontaneous resonance Raman and time-domain stimulated resonance Raman give spectral signatures correlated to the existence of different intermediates during the CO₂-dialumene binding process.

Chinese Chemical Letters 32 (2021) 2469



Ultrathin zinc selenide nanosheet-based intercalation hybrid coupled with CdSe quantum dots showing enhanced photocatalytic CO₂ reduction

Zejun Zhao^a, Zailun Liu^{b,c}, Zhixiao Zhu^a, Fang Wang^a, Fei Teng^c, Wenjun Jiang^b, Yong Yang^a

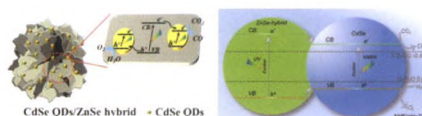
^a State Key Laboratory of Solidification Processing, Center of Advanced Lubrication and Seal Materials, Northwestern Polytechnical University, Xi'an 710072, China

^b Qian Xuesen Laboratory of Space Technology, China Academy of Space Technology, Beijing 100094, China

^c School of Environmental Science and Engineering, Nanjing University of Information Science & Technology, Nanjing 210044, China

A unique kind of heterojunction based on nanosheet-based ZnSe intercalation hybrid coupled with CdSe quantum dots (QDs) labeled as CdSe QDs/ZnSe hybrid was successfully fabricated by a facile solvothermal method and acted as an efficient catalyst for photocatalytic CO₂ reduction.

Chinese Chemical Letters 32 (2021) 2474



Design, synthesis and antitumor evaluations of nucleoside base hydroxamic acid derivatives as DNMT and HDAC dual inhibitors

Qinsheng Sun^{a,b,c}, Qiuzi Dai^b, Cunlong Zhang^d, Yan Chen^{a,b,c}, Lei Zhao^b, Zigao Yuan^{b,c,d}, Yuyang Jiang^{b,c,e}

^a School of Life Science, Tsinghua University, Beijing 100084, China

^b National & Local United Engineering Lab for Personalized Anti-tumor Drugs, The State Key Laboratory of Chemical Oncogenomics, Key Laboratory of Chemical Biology, Tsinghua Shenzhen International Graduate School, Tsinghua University, Shenzhen 518055, China

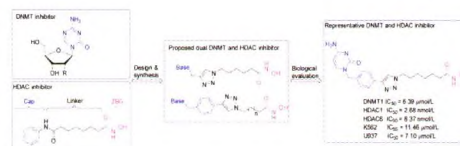
^c Institute of Biomedical Health Technology and Engineering, Shenzhen Bay Laboratory, Shenzhen 518055, China

^d National & Local United Engineering Lab for Personalized Anti-tumor Drugs, Shenzhen Kivita Innovative Drug Discovery Institute, Shenzhen 518110, China

^e School of Pharmaceutical Sciences, Tsinghua University, Beijing 100084, China

Herein we designed and synthesized a series of hydroxamic acid derivatives of nucleoside bases as dual DNMT and HDAC inhibitors. Further evaluations indicated representative compound **204** remarkably inhibited DNMT and HDAC *in vitro* and at cellular levels, leading to G0/G1 cell cycle arrest and proliferation inhibition in U937 cells.

Chinese Chemical Letters 32 (2021) 2479



3D ordered macro-/mesoporous Ni_xCo_{100-x} alloys as high-performance bifunctional electrocatalysts for overall water splitting

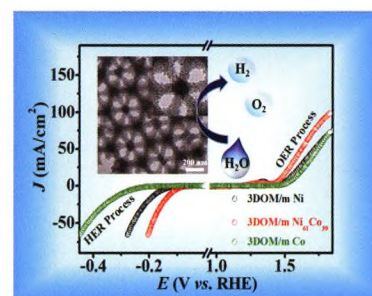
Chenhui Niu^a, Yixin Zhang^a, Jing Dong^a, Ruixue Yuan^a, Wei Kou^a, Lianbin Xu^{a,b}

^a State Key Laboratory of Organic/Inorganic Composites, Beijing University of Chemical Technology, Beijing 100029, China

^b Research Center of the Ministry of Education for High Gravity Engineering and Technology, Beijing University of Chemical Technology, Beijing 100029, China

The 3D ordered macro-/mesoporous (3DOM/m) Ni_xCo_{100-x} alloys with abundant active sites and fast mass transfer rate were fabricated by a dual-templating technique. The catalysts present high-performance for both HER and OER, and can be applied for overall water splitting in alkaline electrolyte.

Chinese Chemical Letters 32 (2021) 2484



Fine-tuning inverse metal-support interaction boosts electrochemical transformation of methanol into formaldehyde based on density functional theory

Wenjuan Yang^{a,d}, Junjun Li^b, Xiaoya Cui^c, Chenhuai Yang^b, Yiting Liu^a, Xianwei Zeng^e, Zhicheng Zhang^b, Qitao Zhang^a

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^b Tianjin Key Laboratory of Molecular Optoelectronic Sciences, Department of Chemistry, School of Science, Tianjin University & Collaborative Innovation Centre of Chemical Science and Engineering, Tianjin 300072, China

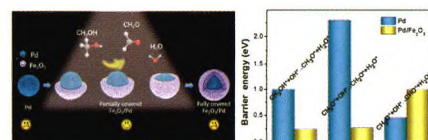
^c Centre for Programmable Materials, School of Materials Science and Engineering, Nanyang Technological University, Singapore 639798, Singapore

^d Hanshan Normal University, Chaozhou 521041, China

^e Zhejiang Fenghong New Material Co., Ltd., Huzhou 313300, China

In our work, by constructing an inverse heterogeneous catalyst, e.g., Fe₂O₃ partially covered on the surface of Pd, we found that this catalyst can effectively transform methanol into formaldehyde with high activity and selectivity. Then, we proposed a deep insight into the interfacial effect from the point from atomic, electronic, geometric and electrochemical reaction pathways viewpoint aspect.

Chinese Chemical Letters 32 (2021) 2489



NiCo₂O₄ hollow microsphere-mediated ultrafast peroxydisulfate activation for dye degradation

Pengjia Ding^{a,b}, Jianrui Niu^a, Fengqin Chang^b, Zhuang He^{a,b}, Thomas Wågberg^c, Zaixing Li^a, Guangzhi Hu^{a,b}

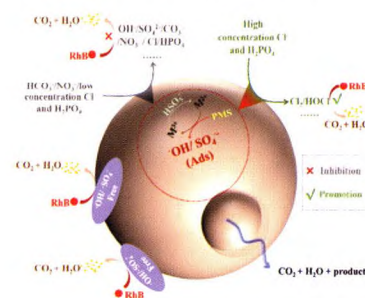
^a College of Environmental Science and Engineering, Hebei University of Science and Technology, Shijiazhuang 050018, China

^b Institute for Ecological Research and Pollution Control of Plateau Lakes, School of Ecology and Environmental Science, Yunnan University, Kunming 650504, China

^c Department of Physics, Umeå University, Umeå 901 87, Sweden

The NiCo₂O₄/PMS system could decolor rhodamine B in 40 min, with 80% TOC removal. The influence factors and mechanism were discussed.

Chinese Chemical Letters 32 (2021) 2495



Stainless steel cloth modified by carbon nanoparticles of Chinese ink as scalable and high-performance anode in microbial fuel cell

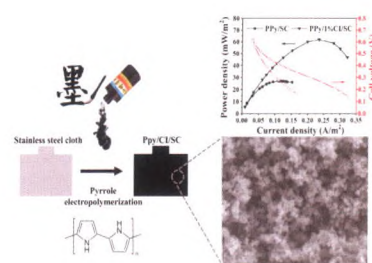
Haoliang Wu^a, Hao Tan^a, Luye Chen^a, Bin Yang^{a,b}, Yang Hou^{a,b}, Lecheng Lei^{a,b}, Zhongjian Li^{a,b}

^a College of Chemical and Biological Engineering, Key Laboratory of Biomass Chemical Engineering of Ministry of Education, Zhejiang University, Hangzhou 310027, China

^b Institute of Zhejiang University-Quzhou, Quzhou 32400, China

In this study, a novel and scalable microbial fuel cell (MFC) anode was developed by modifying stainless steel cloth (SC) with carbon nanoparticles of Chinese ink (CI). Polypyrrole (PPy) was used as a building block through electropolymerization.

Chinese Chemical Letters 32 (2021) 2499



Intercalation modification of FeOCl and its application in dye wastewater treatment

Jiaqiang Wu^{a,b}, Yanfang Liu^{a,b}, Xuejing Yang^b, Jinling Wang^b, Jie Yang^{a,c}

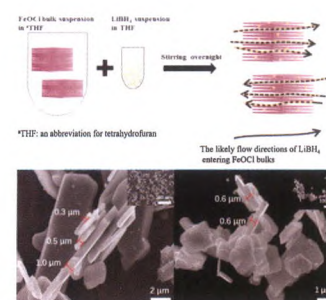
^a School of Energy and Power Engineering, University of Shanghai for Science and Technology, Shanghai 200093, China

^b School of Mechanical and Power Engineering, East China University of Science and Technology, Shanghai 200237, China

^c Centre for Environmental Sciences, Hasselt University, Martelarenlaan 42, Hasselt 3500, Belgium

Lithium borohydride (LiBH₄) was introduced into the layers of two-dimensional iron oxychloride (FeOCl) nanosheets to prepare the intercalation modified LiBH₄-FeOCl with a smaller layered crystal structure, that was found to electrostatically adsorb dye pollutant molecules with a high efficiency.

Chinese Chemical Letters 32 (2021) 2503



Activity enhancement of acetate precursor prepared on MnO_x-CeO₂ catalyst for low-temperature NH₃-SCR: Effect of gaseous acetone addition

Lyumeng Ye^{a,b}, Peng Lu^{b,c}, Dingsheng Chen^{b,c}, Dongyao Chen^{b,c}, Haiwen Wu^{b,c}, Wenjing Dai^a, Yanling Gan^a, Jiayong Xiao^d, Zongwei Xie^e, Zengwang Li^d, Haibao Huang^a

^a School of Environmental Science and Engineering, Sun Yat-sen University, Guangzhou 510275, China

^b The Key Laboratory of Water and Air Pollution Control of Guangdong Province, South China Institute of Environmental Sciences, The Ministry of Ecology and Environment of PRC, Guangzhou 510655, China

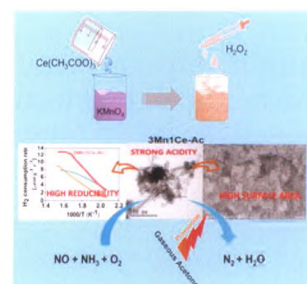
^c Guangdong Province Engineering Laboratory for Air Pollution Control, South China Institute of Environmental Sciences, The Ministry of Ecology and Environment of PRC, Guangzhou 510655, China

^d Zhuhai Jinwan Liangang Foundation Investment Co., Ltd., Zhuhai 519090, China

^e Human Construction Engineering Group, Changsha 410000, China

Acetate (Ac) precursor enhances SCR performance of MnO_x-CeO₂ catalyst synthesized by hydrolysis driving redox method (3Mn1Ce-Ac). Gaseous acetone improves the NO_x conversion and N₂ selectivity over 3Mn1Ce-Ac catalyst above 150 °C.

Chinese Chemical Letters 32 (2021) 2509



Compared catalytic properties of OMS-2-based nanocomposites for the degradation of organic pollutants

Wenxin Hou^a, Shuhui Wang^a, Xiuru Bi^b, Xu Meng^b, Peiqing Zhao^b, Xiang Liu^{a,c}

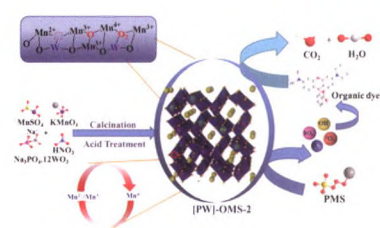
^a College of Materials and Chemical Engineering, Key Laboratory of Inorganic Nonmetallic Crystalline and Energy Conversion Materials, Analysis and Testing Center, China Three Gorges University, Yichang 443002, China

^b State Key Laboratory for Oxo Synthesis and Selective Oxidation, Suzhou Research Institute of LICP, Lanzhou Institute of Chemical Physics (LICP), Chinese Academy of Sciences, Lanzhou 730000, China

^c Engineering Research Center of Eco-Environment in Three Gorges Reservoir Region, Ministry of Education, China Three Gorges University, Yichang 443002, China

Mn catalysts have been designed based on OMS-2 support to optimize the catalytic activity in the degradation of organic pollutants.

Chinese Chemical Letters 32 (2021) 2513



Extremely efficient electro-Fenton-like Sb(III) detoxification using nanoscale Ti-Ce binary oxide: An effective design to boost catalytic activity via non-radical pathway

Yifan Ren^a, Yanbiao Liu^{a,b}, Fuqiang Liu^a, Fang Li^{a,b}, Chensi Shen^{a,b}, Zhuangchun Wu^c

^a Textile Pollution Controlling Engineering Center of Ministry of Environmental Protection, College of Environmental Science and Engineering, Donghua University, Shanghai 201620, China

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

^c Institute of Functional Materials, Donghua University, Shanghai 201620, China

A nonradical-mediated continuous-flow electro-Fenton-like system, based on a functional electroactive carbon nanotube (CNT) filter functionalized with Ti-Ce binary oxide was developed. This system exhibited rapid and selective detoxification of Sb(III).

Chinese Chemical Letters 32 (2021) 2519



Tuning the concentration of surface/bulk oxygen vacancies in CeO₂ nanorods to promote highly efficient photodegradation of organic dyes

Zhen Shen^{a,b}, Yipeng Zhou^a, Yue Guo^b, Jie Zhao^{a,b}, Jianhua Song^a, Yu Xie^a, Yun Ling^a, Wei Zhang^c

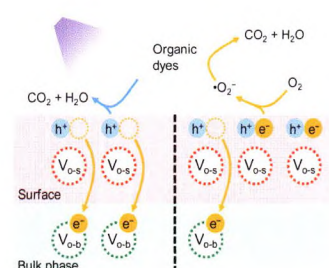
^a Department of Material Chemistry, Nanchang Hangkong University, Nanchang 330063, China

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

^c School of Ecology and Environment Science, Zhengzhou University, Zhengzhou 450001, China

We used a hydrothermal method to regulate the concentration ratio of surface/bulk oxygen vacancies in CeO₂ nanorods. This study provides guidance to develop advanced metal-oxide semiconductor photocatalysts for the photodegradation of organic dyes.

Chinese Chemical Letters 32 (2021) 2524



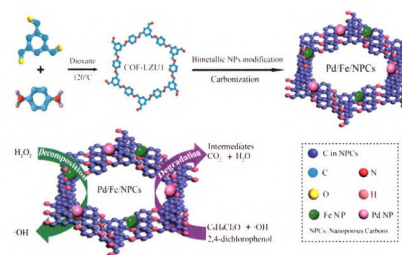
Fabrication of bimetallic nanoparticles modified hollow nanoporous carbons derived from covalent organic framework for efficient degradation of 2,4-dichlorophenol

Yanshu Zhang, Gongke Li, Yufei Hu

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

Schematic presentation of bimetallic Pd/Fe nanoparticles modified nanoporous carbons derived from COF-LZU1 via one-step carbonizing method. The Pd/Fe/NPCs was successfully used for highly efficient degradation of 2,4-dichlorophenol.

Chinese Chemical Letters 32 (2021) 2529



Facile defect engineering in ZnIn₂S₄ coupled with carbon dots for rapid diclofenac degradation

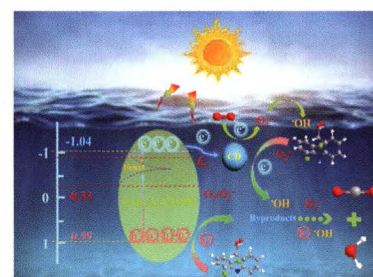
Dongxu Yang^{a,b}, Jialiang Liang^{a,b}, Liang Luo^{a,b}, Ruoyu Deng^{a,b}, Guo Li^{a,b}, Qiang He^{a,b}, Yi Chen^{a,b}

^a Key Laboratory of the Three Gorges Reservoir Region's Eco-Environment, Ministry of Education, Chongqing University, Chongqing 400045, China

^b College of Environment and Ecology, Chongqing University, Chongqing 400045, China

The development of defects and implantation of CD contribute interstitial states to extend the carriers' recombination pathways and provide a charge-transfer channel to migrate e⁻ from ZnIn₂S₄ to CD, thereby achieving rapid diclofenac (DCF) degradation.

Chinese Chemical Letters 32 (2021) 2534



In-situ construction of amorphous/crystalline contact Bi₂S₃/Bi₄O₇ heterostructures for enhanced visible-light photocatalysis

Feihu Mu^a, Benlin Dai^a, Wei Zhao^a, Xiaofan Yang^a, Xiaolong Zhao^b, Xujiing Guo^c

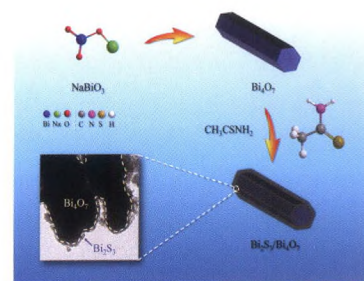
^a Jiangsu Key Laboratory for Chemistry of Low-Dimensional Materials, Jiangsu Collaborative Innovation Center of Regional Modern Agriculture and Environmental Protection, School of Chemistry and Chemical Engineering, Huaiyin Normal University, Huaian 223300, China

^b Department of Mechanical Engineering, The University of Hong Kong, Hong Kong, China

^c College of Resources and Environment, Chengdu University of Information Technology, Chengdu 610225, China

Herein, a novel amorphous/crystalline contact Bi₂S₃/Bi₄O₇ heterostructure was constructed by *in-situ* sulfidation and proved to be an effective photocatalytic Cr(VI) reduction and RhB oxidation.

Chinese Chemical Letters 32 (2021) 2539



Effects of exogenic chloride on oxidative degradation of chlorinated azo dye by UV-activated peroxodisulfate

Wenya Peng^a, Yu Fu^a, Lingli Wang^a, Yifan Wang^a, Yongxia Dong^a, Ying Huang^b, Zhaohui Wang^{a,c,d,e}

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

^b School of Civil and Environmental Engineering, Ningbo University, Ningbo 315211, China

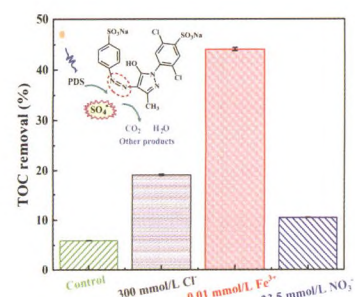
^c Technology Innovation Center for Land Spatial Eco-Restoration in Metropolitan Area, Ministry of Natural Resources, Shanghai 200062, China

^d Shanghai Engineering Research Center of Biotransformation of Organic Solid Waste, Shanghai 200241, China

^e Jiangsu Provincial Key Laboratory of Environmental Science and Engineering, Suzhou University of Science and Technology, Suzhou 215009, China

The chromophore and chlorine group of AY-17 dye are effectively attacked by sulfate radicals. Addition of exogenic Cl⁻ can improve the mineralization rate, but leads to the formation of several polychlorinated organic by-products.

Chinese Chemical Letters 32 (2021) 2544



Oxoarylation of ynamides with N-aryl hydroxamic acids

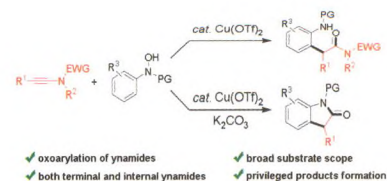
Changwei Chen^b, Hongyu Zhang^a, Gang Xu^a, Sunliang Cui^b

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

^b College of Pharmaceutical Sciences, Zhejiang University, Hangzhou 310058, China

An oxoarylation of ynamides with *N*-aryl hydroxamic acids has been developed for selective entry to (*ortho*-amino)arylacetamides and oxindoles.

Chinese Chemical Letters 32 (2021) 2551



Synthesis of 2-aminothiazoles via rhodium-catalyzed carbenoid insertion/annulation of sulfoxonium ylides with thioureas

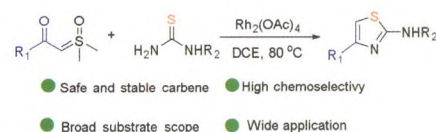
Yuncan Chen^a, Shan Lv^a, Ruizhi Lai^a, Yingying Xu^a, Xin Huang^a, Jianglian Li^a, Guanghui Lv^b, Yong Wu^a

^a Key Laboratory of Drug-Targeting and Drug Delivery System of the Education Ministry and Sichuan Province, Sichuan Engineering Laboratory for Plant-Sourced Drug and Sichuan Research Center for Drug Precision Industrial Technology, West China School of Pharmacy, Sichuan University, Chengdu 610041, China

^b Department of Pharmacy, Taihe Hospital, Hubei University of Medicine, Shiyan 442000, China

Sulfoxonium ylides as carbene precursors couple smoothly with thioureas in the presence of 5 mol% of rhodium(II) acetate dimer via carbenoid insertion to afford the corresponding 2-aminothiazoles with high chemoselectivity, providing a facile and efficient approach to access a variety of 2-aminothiazole derivatives with good functional groups tolerance.

Chinese Chemical Letters 32 (2021) 2555



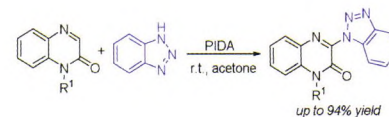
Hypervalent iodine mediated C-H amination of quinoxalinones with heteroaromatic amines under metal-free conditions

Chinese Chemical Letters 32 (2021) 2559

Qing-Qing Han, De-Mao Chen, Zu-Li Wang, Yuan-Yuan Sun, Shao-Hui Yang, Jing-Cheng Song, Dao-Qing Dong

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

An efficient and facile method for C-H amination of quinoxalinones with heteroaromatic amines under metal-free conditions has been described. In the presence of hypervalent PIDA reagent, the desired products with various groups were obtained with moderate to high yields.



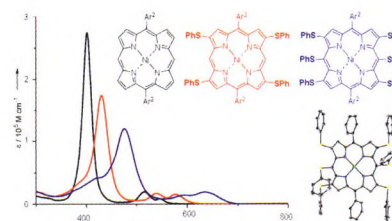
Multi-(phenylthio)porphyrinato Ni(II) compounds: Synthesis, structures and properties

Chinese Chemical Letters 32 (2021) 2562

Peipei Jiang, Tingting Zhao, Jian Rong, Bangshao Yin, Yutao Rao, Mingbo Zhou, Ling Xu, Jianxin Song

College of Chemistry and Chemical Engineering, Key Laboratory of Chemical Biology and Traditional Chinese Medicine Research (Ministry of Education of China), Key Laboratory of the Assembly and Application of Organic Functional Molecules of Hunan Province, Hunan Normal University, Changsha 410081, China

A series of multi-(phenylthio)porphyrinato Ni(II) compounds were synthesized without the participation of transition metal catalysts. All of these compounds were characterized by NMR and mass spectra; three typical structures were further characterized by X-ray single crystal diffraction. UV-vis spectra and electrochemical data revealed that HOMO-LUMO gaps of these compounds were significantly influenced by these phenylthio groups, which was further confirmed by DFT calculation.



NHC-catalysed retro-aldol/aldol cascade reaction enabling solvent-controlled stereodivergent synthesis of spirooxindoles

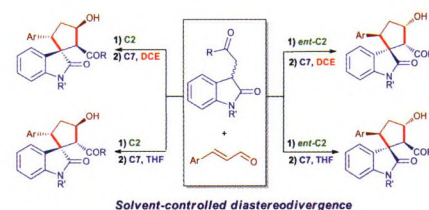
Chinese Chemical Letters 32 (2021) 2567

Haijun Leng^{a,b}, Qian Zhao^a, Qing Mao^a, Shuaijiang Liu^a, Menglan Luo^a, Rui Qin^a, Wei Huang^a, Gu Zhan^a

^a State Key Laboratory of Southwestern Chinese Medicine Resources, School of Pharmacy and School of Basic Medical Sciences, Chengdu University of Traditional Chinese Medicine, Chengdu 611137, China

^b Antibiotics Research and Re-evaluation Key Laboratory of Sichuan Province, Sichuan Industrial Institute of Antibiotics, School of Pharmacy, Chengdu University, Chengdu 610052, China

An *N*-heterocyclic carbene (NHC)-catalysed retro-aldol/aldol cascade reaction of spirooxindole-based β -hydroxyaldehyde has been developed. The Michael/aldol/retro-aldol/aldol sequential process enables the stereodivergent synthesis of spirocyclopentaneoxindole products with four consecutive stereocenters by using different combinations of a chiral secondary amine and a solvent (THF or DCE).



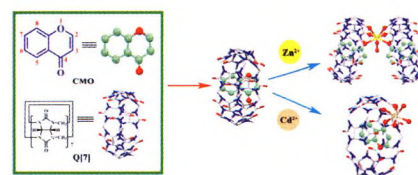
Selective detection of Zn²⁺ and Cd²⁺ ions in water using a host-guest complex between chromone and Q[7]

Chinese Chemical Letters 32 (2021) 2572

Zhishu Zeng, Yunqian Zhang, Xiaodong Zhang, Guangyan Luo, Jun Xie, Zhu Tao, Qianjun Zhang

Key Laboratory of Macrocyclic and Supramolecular Chemistry of Guizhou Province, Guizhou University, Guiyang 550025, China

CMO and Q[7] can form a 1:1 inclusion complex, which can selectively recognize Zn²⁺ and Cd²⁺ in an aqueous solution.



Visible light and base promoted O-H insertion/cyclization of *para*-quinone methides with aryl diazoacetates: An approach to 2,3-dihydrobenzofuran derivatives

Shuangjing Zhou^a, Baogui Cai^a, Chuxia Hu^a, Xu Cheng^a, Lei Li^a, Jun Xuan^{a,b,c}

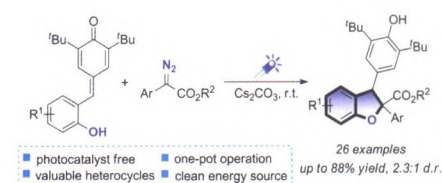
^a Anhui Province Key Laboratory of Chemistry for Inorganic/Organic Hybrid Functionalized Materials, College of Chemistry & Chemical Engineering, Anhui University, Hefei 230601, China

^b Key Laboratory of Structure and Functional Regulation of Hybrid Materials (Anhui University), Ministry of Education, Hefei 230601, China

^c Key Laboratory of Precise Synthesis of Functional Molecules of Zhejiang Province, School of Science, Westlake University, Hangzhou 310024, China

A visible light and base promoted O-H insertion/cyclization of *para*-quinone methides with aryl diazoacetates is developed. This one-pot two-step reaction offers a mild and efficient approach for the synthesis of biologically important 2,3-dihydrobenzofuran derivatives in good yields and moderate diastereoselectivities.

Chinese Chemical Letters 32 (2021) 2577



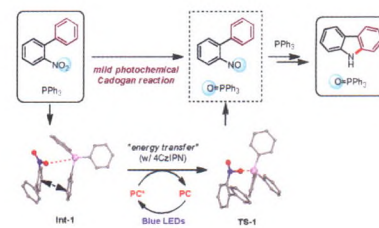
Visible-light-driven Cadogan reaction

Zhonghua Qu, Pu Wang, Xing Chen, Guo-Jun Deng, Huawen Huang

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

Mild visible-light-driven photochemical Cadogan-type cyclization has been developed with broad functional group tolerance. 4CzIPN was found to be an efficient mediator to transfer energy from photons to the transient intermediate that breaks the barriers of deoxygenation in Cadogan reaction.

Chinese Chemical Letters 32 (2021) 2582



Preparation of selenofunctionalized heterocycles via iodosobenzene-mediated intramolecular selenocyclizations of olefins with diselenides

Peng-Fei Wang, Wei Yi, Yong Ling, Liang Ming, Gong-Qing Liu, Yu Zhao

School of Pharmacy, Nantong University, Nantong 226001, China

The cyclization of alkenes with easily accessible diselenides promoted by PhIO is reported. Notably, the striking features of this new protocol include easy operation (open flask to air and moisture), mild reaction conditions, good yields, excellent functional group compatibility and large-scale application.

Chinese Chemical Letters 32 (2021) 2587



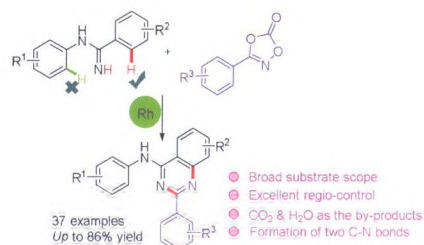
Rhodium(III)-catalyzed [4 + 2] annulation of *N*-arylbenzamides with 1,4,2-dioxazol-5-ones: Easy access to 4-aminoquinazolines via highly selective C—H bond activation

Jie Ren, Yanzhen Huang, Chao Pi, Xiuling Cui, Yangjie Wu

Henan Key Laboratory of Chemical Biology and Organic Chemistry, Key Laboratory of Applied Chemistry of Henan Universities, Green Catalysis Center and College of Chemistry, Zhengzhou University, Zhengzhou 450052, China

A novel approach for the synthesis of 4-aminoquinazolines has been developed via rhodium(III)-catalyzed [4 + 2] annulation of *N*-arylbenzamides with 1,4,2-dioxazol-5-ones. This reaction features excellent regioselectivity, broad substrate scope and high step economy, which would provide the reference for the construction of the fused 4-aminoquinazolines with biologically and pharmacologically active compounds.

Chinese Chemical Letters 32 (2021) 2592



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