

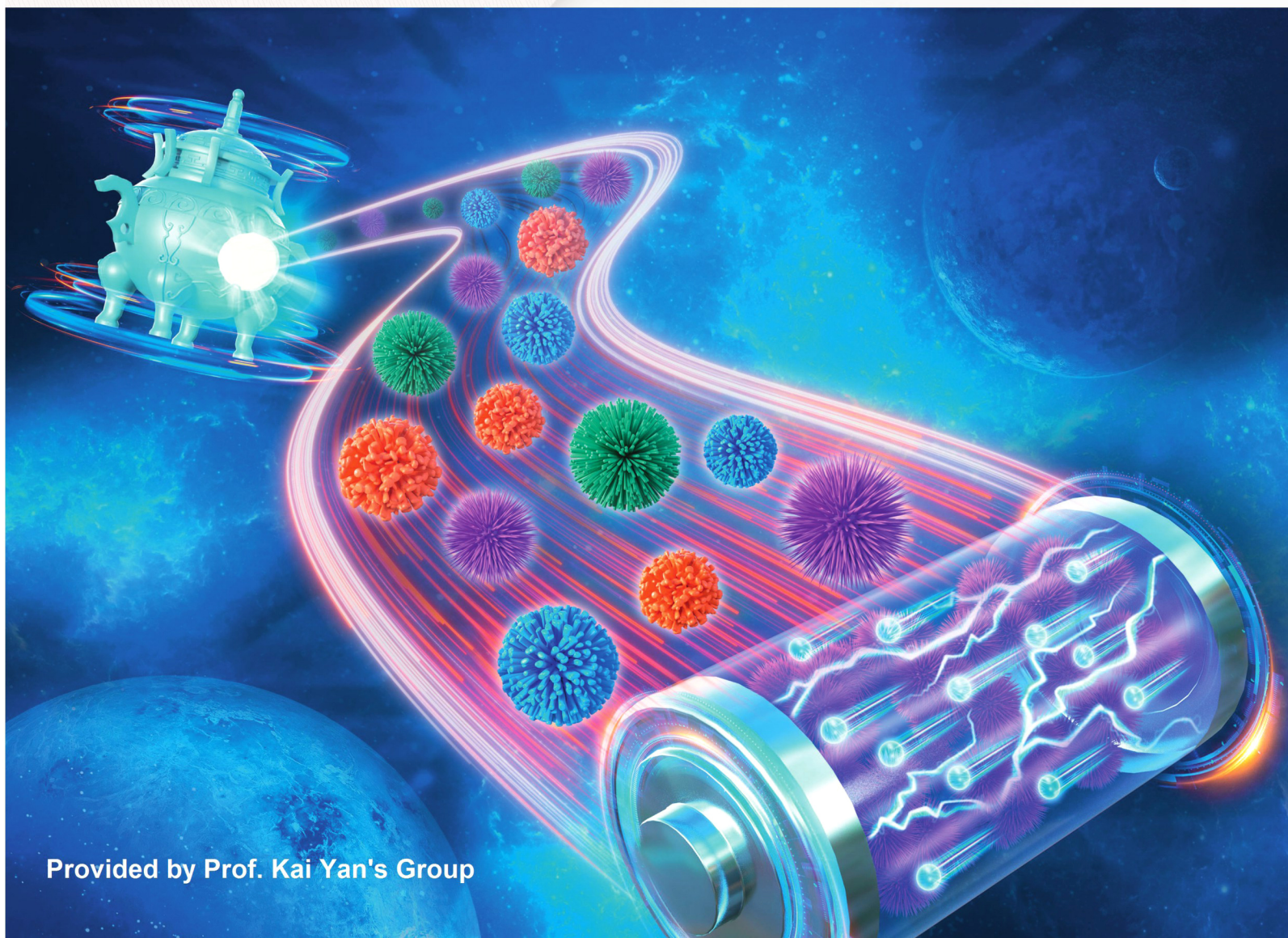
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Chinese Chemical Letters (中国化学快报)

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Provided by Prof. Kai Yan's Group



REVIEW

Zhaohui Wang et al.
A chronological review of photochemical reactions of ferrioxalate at the molecular level: New insights into an old story

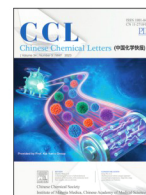
COMMUNICATION

Gang Wu et al.
Multifunctional robust aerogel separator towards high-temperature, large-rate, long-cycle lithium-ion batteries

Chinese Chemical Society

Institute of Materia Medica, Chinese Academy of Medical Sciences

万方数据



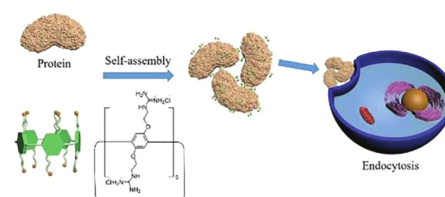
Graphical Abstracts/Chin Chem Lett 34 (2023) 108390

Editorial

Preorganized cationic pillararene as efficient carriers for intracellularly delivering native proteinsHong-Mei Yu^{a,b}, Xiao-Yong Yu^c, Yong Chen^c^aSchool of Materials Science and Engineering, University of Science and Technology Beijing, Beijing 100083, China^bCosmetics Tech Center, Chinese Academy of Inspection and Quarantine Cosmetics Tech Center, Beijing 100176, China^cCollege of Chemistry, State Key Laboratory of Elemento-Organic Chemistry, Nankai University, Tianjin 300071, China

A supramolecular carrier based on preorganized cationic pillararene is constructed to mimic cell-penetrating peptide, showing good and universal capability of intracellularly delivering positively charged or negatively charged native proteins with different isoelectric points and sizes.

Chinese Chemical Letters 34 (2023) 108037

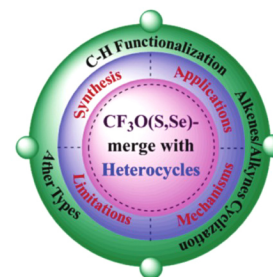


Reviews

Trifluoromethoxylation/trifluoromethylthiolation/trifluoromethylselenolation strategy for the construction of heterocyclesXin Wang^a, Zhichuan Wang^a, Zhenjian Li^b, Kai Sun^a^aCollege of Chemistry and Chemical Engineering, Yantai University, Yantai 264005, China^bState Key Laboratory of Tree Genetics and Breeding, Research Institute of Forestry, Chinese Academy of Forestry, Beijing 100091, China

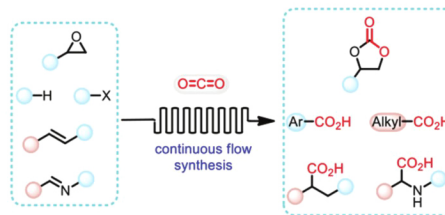
In this review, the synthesis of trifluoromethoxylated, trifluoromethylthiolated, and trifluoromethylselenolated heterocyclic compounds, classified as (i) direct C–H trifluoromethoxylation/trifluoromethylthiolation/trifluoromethylselenolation of heterocycles; (ii) cyclization of alkenes/alkynes to synthesize F₃CO(S, Se)-containing heterocycles, as well as other types, is described.

Chinese Chemical Letters 34 (2023) 108045

**Recent advances in chemical fixation of CO₂ based on flow chemistry**Hui Luo^a, Jing Ren^a, Ying Sun^a, Yunlin Liu^b, Feng Zhou^{a,c}, Guoyue Shi^a, Jian Zhou^{a,d}^aSchool of Chemistry and Molecular Engineering, East China Normal University, Shanghai 200062, China^bSchool of Chemistry and Chemical Engineering, Guangzhou University, Guangzhou 510006, China^cInstitute of Eco-Chongming, Shanghai 202162, China^dState Key Laboratory of Organometallic Chemistry, Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, Shanghai 200032, China

This review summarizes the recent advances in the chemical fixation of CO₂ under flow conditions, introduces major synthetic strategies and discusses their advantages and limitations, highlights the application of known protocols, and outlines the synthetic opportunities.

Chinese Chemical Letters 34 (2023) 107782



Responsive switchable deep eutectic solvents: A review

Jingyu Zhang^a, Shang Li^b, Liping Yao^a, Yuexing Yi^a, Lingqi Shen^a, Zuguang Li^a, Hongdeng Qiu^c

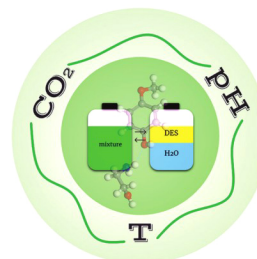
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^c CAS key laboratory of Chemistry of Northwestern Plant Resources/Key Laboratory for Natural Medicine of Gansu Province, Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, Lanzhou 730000, China

Responsive switchable deep eutectic solvents with three external factors (CO₂, pH, temperature) as driving force for phase switching (e.g., aqueous system).

Chinese Chemical Letters 34 (2023) 107750



A chronological review of photochemical reactions of ferrioxalate at the molecular level: New insights into an old story

Xiaodie Li^a, Meiru Hou^a, Yu Fu^a, Lingli Wang^a, Yifan Wang^a, Dagang Lin^a, Qingchao Li^a, Dongdong Hu^a, Zhaohui Wang^{a,b,c}

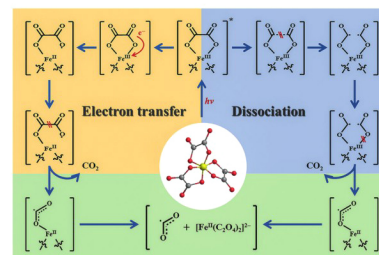
^a Shanghai Key Lab for Urban Ecological Processes and Eco-Restoration, School of Ecological and Environmental Sciences, East China Normal University, Shanghai 200241, China

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

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

This review presents the advance in photochemical reactions of ferrioxalate with special focus on two controversial views about the initial photolysis mechanism at the molecular level.

Chinese Chemical Letters 34 (2023) 107752



Modification and application of Fe₃O₄ nanozymes in analytical chemistry: A review

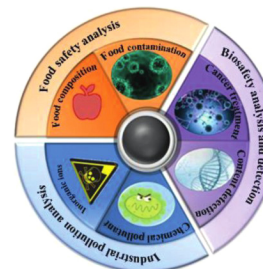
Jiahe Ju^a, Yitong Chen^a, Zhiqiang Liu^a, Cheng Huang^a, Yaqi Li^b, Dezhaoh Kong^b, Wei Shen^a, Sheng Tang^a

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

^b School of Grain Science and Technology, Jiangsu University of Science and Technology, Zhenjiang 212003, China

This review mainly introduces several common synthetic methods of Fe₃O₄ nanozyme, and summarizes the modification strategies for Fe₃O₄ nanozyme to improve the peroxidase-like activity. The recent application of Fe₃O₄ nanozyme in analytical chemistry also has been reviewed, including analysis of food, industrial pollutant analysis and biological samples.

Chinese Chemical Letters 34 (2023) 107820



Bioremediation strategies of palm oil mill effluent and landfill leachate using microalgae cultivation: An approach contributing towards environmental sustainability

Imran Ahmad^a, Natasha Nabila Binti Ibrahim^a, Norhayati Abdullah^a, Iwamoto Koji^a, Shaza Eva Mohamad^a, Kuan Shiong Khoo^b, Wai Yan Cheah^c, Tau Chuan Ling^d, Pau Loke Show^{b,e,f}

^a Algae and Biomass, Research Laboratory Malaysia-Japan International Institute of Technology (MJIIT) Universiti Teknologi Malaysia (UTM), Jalan Sultan Yahya Petra, 54100, Kuala Lumpur, Malaysia

^b Department of Chemical and Environmental Engineering, Faculty of Science and Engineering, University of Nottingham Malaysia, Jalan Broga, Semenyih 43500, Selangor Darul Ehsan, Malaysia

^c Centre of Research in Development, Social and Environment (SEEDS), Faculty of Social Sciences and Humanities, Universiti Kebangsaan Malaysia, 43600 UKM Bangi, Selangor Darul Ehsan, Malaysia

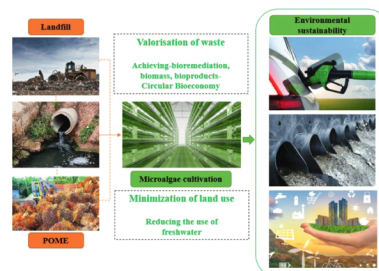
^d Institute of Biological Sciences, Faculty of Science, University of Malaya, 50603, Kuala Lumpur, Malaysia

^e Zhejiang Provincial Key Laboratory for Subtropical Water Environment and Marine Biological Resources Protection, Wenzhou University, Wenzhou 325035, China

^f Department of Sustainable Engineering, Saveetha School of Engineering, SIMATS, Chennai 602105, India

Microalgae cultivation for waste valorisation and environmental sustainability are reviewed and discussed.

Chinese Chemical Letters 34 (2023) 107854



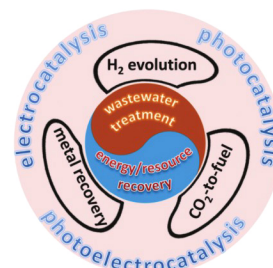
Advanced municipal wastewater treatment and simultaneous energy/resource recovery via photo(electro)catalysis

Dengke Wang, Siqi Chen, Shiqin Lai, Weili Dai, Lixia Yang, Lanqing Deng, Mengjuan Suo, Xuyang Wang, Jian-Ping Zou, Sheng-Lian Luo

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

The recent advancements in photo(electro)catalytic process for wastewater treatment and simultaneous energy/resource recovery are summarized in this review. The fundamentals of photo(electro)catalysis, the influencing factors and the perspectives in such synergistic process are presented.

Chinese Chemical Letters 34 (2023) 107861



Design of portable electrochemiluminescence sensing systems for point-of-care-testing applications

Shuqi Xia^a, Jiangfei Pan^a, Deshen Dai^a, Zong Dai^a, Mengsu Yang^c, Changqing Yi^{a,b}

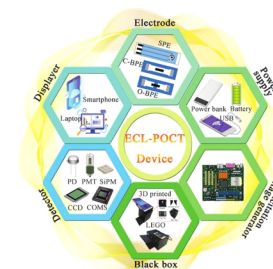
^aGuangdong Provincial Engineering and Technology Center of Advanced and Portable Medical Devices, School of Biomedical Engineering, Sun Yat-sen University, Shenzhen 518107, China

^bResearch Institute of Sun Yat-sen University in Shenzhen, Shenzhen 518057, China

^cDepartment of Biomedical Sciences & Tung Biomedical Sciences Centre, City University of Hong Kong, Hong Kong, China

This review focus on how to develop a portable ECL device by summarizing recent examples and analyzing their key components part by part. Then the possible solutions to the existing challenges in the development and applications of portable ECL devices are summarized and discussed in detail, followed by offering future perspectives.

Chinese Chemical Letters 34 (2023) 107799



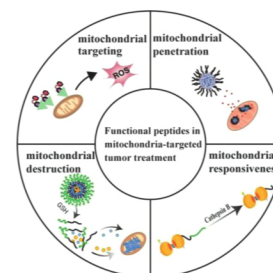
Mitochondria-targeted cancer therapy based on functional peptides

Yuhan Sun, He Zhang, Guangzhao Lu, Huan Wang, Ying Lu, Li Fan

Department of Pharmaceutical Sciences, School of Pharmacy, Naval Medical University, Shanghai 200433, China

This review focuses on the direction of cancer therapy and mainly summarizes the application of different functional peptides in the mitochondria-targeted tumor treatments reported in recent years.

Chinese Chemical Letters 34 (2023) 107817



3D skin models along with skin-on-a-chip systems: A critical review

Wenxuan Sun^a, Zijia Liu^a, Jian Xu^b, Ya Cheng^b, Ruixue Yin^a, Lei Ma^c, Honglin Li^c, Xuhong Qian^{c,d}, Hongbo Zhang^a

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

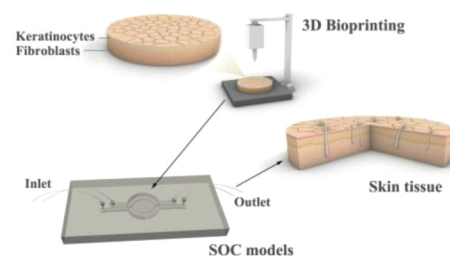
^bSchool of Physics and Electronic Science, East China Normal University, Shanghai 200062, China

^cSchool of Pharmacy, East China University of Science and Technology, Shanghai 200237, China

^dSchool of Chemistry and Molecular Engineering, East China Normal University, Shanghai 200062, China

Owing to the emerging of organ-on-chips and 3D bioprinting technologies, 3D skin models have been fast evolving. The advances in 3D skin models along with skin-on-a-chip (SOC) are reviewed. The collaboration of 3D bioprinting and SOC might hold the promise in creation of fully functional skin models.

Chinese Chemical Letters 34 (2023) 107819



Carrier-free supramolecular nanomedicines assembled by small-molecule therapeutics for cancer treatment

Jianhui Zuo^a, Xin Gao^{b,c}, Jianru Xiao^{b,c}, Yiyun Cheng^b

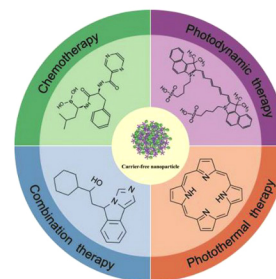
^a Department of Thoracic Surgery, The First Affiliated Hospital of Anhui Medical University, Hefei 230022, China

^b Shanghai Changzheng Hospital Joint Research Center for Orthopedic Oncology, East China Normal University, Shanghai 200241, China

^c Department of Orthopedics Oncology, Changzheng Hospital, Navy Medical University, Shanghai 200003, China

Carrier-free nanomedicines produced by supramolecular assembly of small-molecule therapeutic functionalities and their conjugates avoid carrier-related safety problems and achieve high drug loading, enhanced tumor accumulation and improved therapeutic efficiency.

Chinese Chemical Letters 34 (2023) 107827



Treatment of Alzheimer's disease with small-molecule photosensitizers

Yefei Jiang^a, Zhiyong Zeng^a, Jianhua Yao^b, Ying Guan^b, Peipei Jia^{a,c}, Xiaoli Zhao^a, Lin Xu^{a,c}

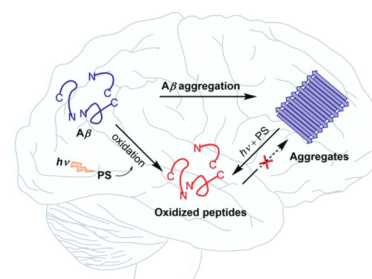
^a Shanghai Key Laboratory of Green Chemistry and Chemical Processes, School of Chemistry and Molecular Engineering, East China Normal University, Shanghai 200062, China

^b Joint Institute of Tobacco and Health, Yunnan Academy of Tobacco Science, Kunming 650024, China

^c Wuhu Hospital Affiliated to East China Normal University (The Second People's Hospital of Wuhu), Wuhu 241001, China

This review summarizes the progress of small-molecule photosensitizers in the treatment of Alzheimer's disease in recent years and outlines existing tactics and potential obstacles.

Chinese Chemical Letters 34 (2023) 107966



Recent advances in polyoxometalates acid-catalyzed organic reactions

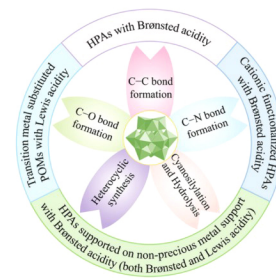
Yu-Feng Liu^a, Chang-Wen Hu^b, Guo-Ping Yang^a

^a Jiangxi Province Key Laboratory of Synthetic Chemistry, Jiangxi Key Laboratory for Mass Spectrometry and Instrumentation, East China University of Technology, Nanchang 330013, China

^b Key Laboratory of Cluster Science of Ministry of Education, Beijing Key Laboratory of Photoelectronic/Electrophotonic Conversion Materials, School of Chemistry and Chemical Engineering, Beijing Institute of Technology, Beijing 100081, China

This review summarized recent progress in the POMs acid-catalyzed organic reactions including the C-C bond formation, C-N bond formation, C-O bond formation, heterocyclic synthesis, cyanosilylation and hydrolysis reactions.

Chinese Chemical Letters 34 (2023) 108097



Advances in component and operation optimization of solid oxide electrolysis cell

Xiaoxin Zhang^a, Bo Liu^b, Yanling Yang^a, Jianhui Li^d, Jian Li^b, Yingru Zhao^a, Lichao Jia^b, Yifei Sun^{a,c,e,f}

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^b School of Materials Science and Engineering, State Key Lab of Materials Processing and Die & Mould Technology, Huazhong University of Science and Technology, Wuhan 430074, China

^c Innovation Laboratory for Sciences and Technologies of Energy Materials of Fujian Province (IKKEM), Xiamen 361005, China

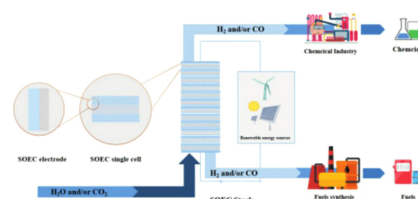
^d National Engineering Laboratory for Green Chemical Productions of Alcohols, Ethers and Esters, College of Chemistry and Chemical Engineering, Xiamen University, Xiamen 361005, China

^e State Key Laboratory of Physical Chemistry of Solid Surfaces, College of Chemistry and Chemical Engineering, Xiamen University, Xiamen 361005, China

^f Shenzhen Research Institute of Xiamen University, Shenzhen 518057, China

In this review article, we focus on the recent development of solid oxide electrolysis cell (SOEC) both at cell level and stack level. On the other hand, we also discuss the next generation SOEC operated with the assistant of other fuels to further reduce the energy consumption and enhance the productivity of the electrolyzer. Finally, the challenges and future research direction in SOECs are included.

Chinese Chemical Letters 34 (2023) 108035



Clusteroluminescence: A gauge of molecular interaction

Bin Liu^a, Bo Chu^b, Lixun Zhu^d, Haoke Zhang^b, Wang-Zhang Yuan^c, Zheng Zhao^d, Wen-Ming Wan^e, Xing-Hong Zhang^b

^a School of Energy and Power Engineering, North University of China, Taiyuan 030051, China

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

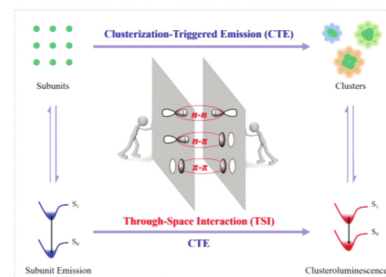
^c School of Chemistry and Chemical Engineering, Frontiers Science Center for Transformative Molecules, Shanghai Key Lab of Electrical Insulation and Thermal Aging, Shanghai Electrochemical Energy Devices Research Center, Shanghai Jiao Tong University, Shanghai 200240, China

^d School of Science and Engineering, The Chinese University of Hong Kong, Shenzhen 518172, China

^e State Key Laboratory of Structural Chemistry, Key Laboratory of Coal to Ethylene Glycol and Its Related Technology, Center for Excellence in Molecular Synthesis, Fujian Institute of Research on the Structure of Matter, Chinese Academy of Sciences, Fuzhou 350002, China

The CTE process is achieved by the aggregation of atoms or groups under the action of external forces (e.g., crystallization, hydrogen bonding and polymerization) to generate TSI, thereby causing orbital splitting and further luminescence emission.

Chinese Chemical Letters 34 (2023) 107909



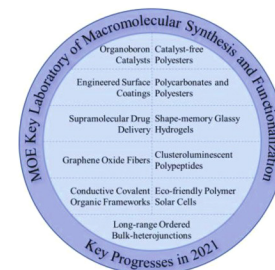
Key progresses of MOE key laboratory of macromolecular synthesis and functionalization in 2021

Quan Wen, Qiuquan Cai, Ping Fu, Dan Chang, Xiaoyi Xu, Tian-jiao Wen, Guang-Peng Wu, Weipu Zhu, Ling-Shu Wan, Chengjian Zhang, Xing-Hong Zhang, Qiao Jin, Zi-Liang Wu, Chao Gao, Haoke Zhang, Ning Huang, Chang-Zhi Li, Hanying Li

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

This paper provides a brief review of the key progresses in 2021 of MOE Key Laboratory of Macromolecular Synthesis and Functionalization in Zhejiang University, China.

Chinese Chemical Letters 34 (2023) 107592



Recent advances for Zn-gas batteries beyond Zn-air/oxygen battery

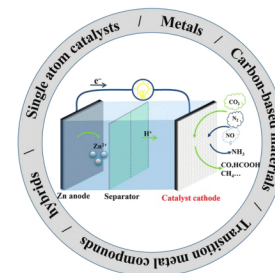
Rong Zhang^a, Zhuoxi Wu^a, Zhaodong Huang^a, Ying Guo^a, Shaoce Zhang^a, Yuwei Zhao^a, Chunyi Zhi^{a,b}

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^b Centre for Functional Photonics, City University of Hong Kong, Hong Kong 999077, China

This review summarizes recent achievements in typical Zn-gas batteries beyond Zn-air battery, including Zn-CO₂, Zn-N₂ and Zn-NO batteries, aiming to shed light on how these gases works for electrochemical conversion in Zn-gas batteries. The produced value-added chemicals and the design of cathodic catalyst materials are introduced. The remaining challenges and possible directions of these Zn-gas batteries in the future are further discussed.

Chinese Chemical Letters 34 (2023) 107600



Communications

Structure-property relationship on aggregation-induced emission properties of simple azine-based AIEgens and its application in metal ions detection

Xiao-Mei Sun^a, Juan Liu^b, Zhao-Hui Li^c, Yong-Peng Fu^d, Ting-Ting Huang^a, Zhong-Di Tang^a, Bingbing Shi^a, Hong Yao^a, Tai-Bao Wei^a, Qi Lin^a

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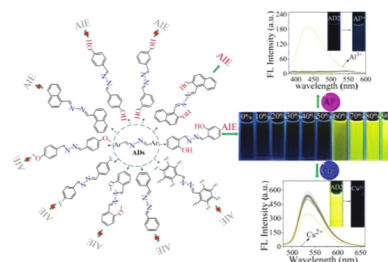
^b Key Laboratory of Environment-Friendly Composite Materials of the State Ethnic Affairs Commission, College of Chemical Engineering, Northwest Minzu University, Lanzhou 730000 China

^c Department of Pharmacy Jiangxi Medical College, Shangrao 334000, China

^d Longnan Ecological and Environmental Monitoring Centre of Gansu Province, Longnan 746000, China

The AIE mechanism and structure-property relationship of azine derivatives were studied. The *o*-hydroxyl aryl substituted azine compounds could show good AIE properties and can act as Al³⁺ and Cu²⁺ sensor in different conditions.

Chinese Chemical Letters 34 (2023) 107792



Reactive oxygen specie-induced photodynamic therapy activation by supramolecular strategy

Shuyi Wang^{a,b}, Zizhen Zhao^a, Jiayang Yao^c, Siyang Jiang^a, Zhan-Ting Li^a, Da Ma^b

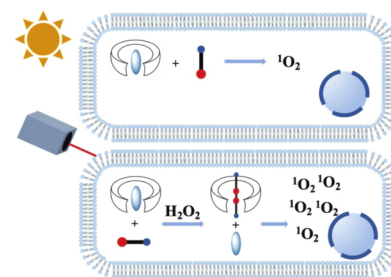
^aDepartment of Chemistry, Fudan University, Shanghai 200438, China

^bSchool of Pharmaceutical Engineering and Institute for Advanced Studies, Taizhou University, Taizhou 318000, China

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Supramolecular strategy based on pro-guest inhibits photodynamic therapy in normal tissues, and activates it in reactive oxygen specie-overexpressed pathological tissues.

Chinese Chemical Letters 34 (2023) 107805



Synthesis of a conjugable hexasaccharide corresponding to the capsular polysaccharide of *Campylobacter jejuni* strain BH0142

Zijiao Hou^a, Jianjun Wang^a, Xinxin Zhang^a, Peng Wang^a, Ni Song^a, Ming Li^{a,b,c}

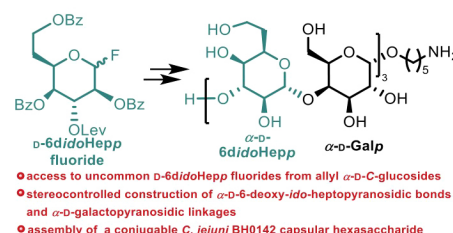
^aMolecular Synthesis Center, Key Laboratory of Marine Medicine, Chinese Ministry of Education, Shandong Key Laboratory of Glycoscience and Glycotechnology, School of Medicine and Pharmacy, Ocean University of China, Qingdao 266003, China

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^cShandong Key Laboratory of Glycoscience and Glycotechnology, School of Medicine and Pharmacy, Ocean University of China, Qingdao 266003, China

The first assembly of a conjugation-ready hexasaccharide from the capsular glycan of *C. jejuni* strain BH0142 has been accomplished. The synthesis features the efficient preparation of 6-deoxy- α -D-ido-heptopyranosyl fluoride donors proceeding from allyl α -D-C-glucopyranoside by a C1-to-C5 switch strategy with radical dehydroxymethylative fluorination as a key step, stereocontrolled construction of 1,2-*trans*- α -D-ido-heptopyranosidic bonds and of 1,2-*cis*- α -D-galactopyranosidic linkages.

Chinese Chemical Letters 34 (2023) 107804



Chemical protein synthesis elucidates key modulation mechanism of the tyrosine-*O*-sulfation in inducing strengthened inhibitory activity of hirudin

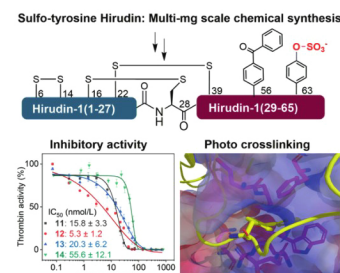
Ye Yang^a, Mingchan Liang^b, Rui Wang^b, Chunmao He^a

^aSchool of Chemistry and Chemical Engineering, South China University of Technology, Guangzhou 510640, China

^bPingshan translational medicine center, Shenzhen Bay Laboratory, Shenzhen 518118, China

A facile synthetic strategy was reported herein for the synthesis of sulfated hirudins with up to three modifications and in multi-milligram scales. Through these synthetic proteins, a novel type of modulation mechanism exhibited by tyrosine *O*-sulfation was proposed.

Chinese Chemical Letters 34 (2023) 107806



Aryldiazonium salts can serve as nitrogen-based Lewis acid catalysts and their applications in the formation of photoactive charge transfer complexes

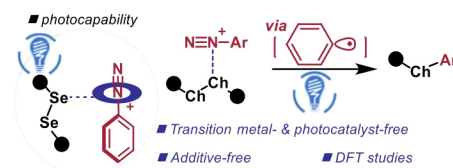
Xiaojuan Ren^b, Qiang Liu^b, Zhusheng Yang^{a,b}, Zhixiang Wang^b, Xiangyu Chen^b

^aSchool of Materials and Architectural Engineering, Guizhou Normal University, Guiyang 550025, China

^bSchool of Chemical Sciences, University of the Chinese Academy of Sciences, Beijing 100049, China

We report the Lewis acid catalysis of aryl diazonium salts, and their Lewis acidity applications in photogeneration of aryl radicals under additive-, photocatalyst- and transition metal-free conditions.

Chinese Chemical Letters 34 (2023) 107821



Photoredox-neutral ring-opening pyridylation of cyclic oximes *via* phosphoranyl radical-mediated N–O/C–C bond cleavages and sequential radical-radical coupling

Ting Zou^a, Yishu He^a, Rui Liu^a, Yihao Zhang^a, Siping Wei^{a,c}, Ji Lu^a, Jun Wang^a, Lin Wang^a, Qiang Fu^a, Dong Yi^{a,b}

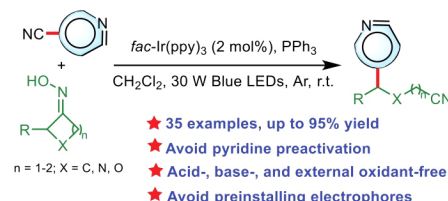
^aDepartment of Medicinal Chemistry, School of Pharmacy, Southwest Medical University, Luzhou 646000, China

^bNuclear Medicine and Molecular Imaging Key Laboratory of Sichuan Province, Luzhou 646000, China

^cState Key Laboratory of Natural and Biomimetic Drugs, Peking University, Beijing 100191, China

We report a novel photoredox-neutral ring-opening pyridylation strategy of non-prefunctionalized cyclic oximes, providing distally pyridylated alkynitriles as well as benzonitriles *via* phosphoranyl radical-mediated N–O/C–C bond cleavages followed by radical-radical coupling under acid-, base-, and oxidant-free conditions.

Chinese Chemical Letters 34 (2023) 107822



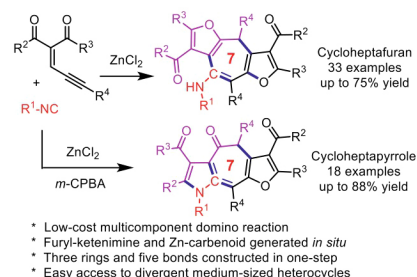
[4 + 3] Cycloaddition of ketenimines with furocarbenoids: Divergent and efficient synthesis of fused cycloheptatriene and tropone scaffolds

Jin Wang, Zhaoyang Li, Shengxin Bai, Qinghua Zhou, Tengting Wu, Zhongyan Hu, Xianxiu Xu

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

A zinc-promoted highly efficient and divergent synthesis of fused cycloheptatriene and tropone scaffolds from simple ene-yne-ketones and isocyanides is herein disclosed. Mechanistic investigation revealed this reaction underwent a [4 + 3] cycloaddition between the *in-situ* generated furyl-ketenimine and furyl-carbenoid intermediates. Three rings and five bonds are constructed in this three-component one-pot domino reaction with perfect atom economy.

Chinese Chemical Letters 34 (2023) 107823



Low-molecular-weight supramolecular adhesive with resistance to low temperatures

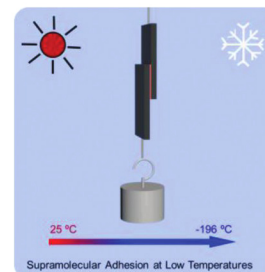
Shuanggen Wu^a, Wenbo Wang^a, Changyong Cai^a, Fenfang Li^b, Shengyi Dong^a

^aCollege of Chemistry and Chemical Engineering, Hunan University, Changsha 410082, China

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

Supramolecular adhesive with tough adhesion capacity at low temperatures was serendipitously developed.

Chinese Chemical Letters 34 (2023) 107830



C–H···X–C bonds in alkyl halides drive reverse selectivities in confined spaces

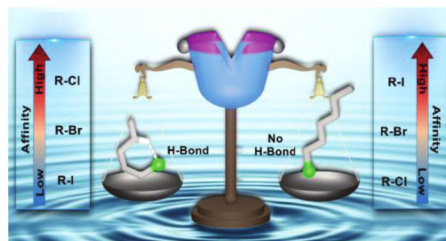
Manuel Petroselli^a, Yong-Qing Chen^a, Ming-Kai Zhao^a, Julius Rebek Jr.^{a,b}, Yang Yu^a

^aCenter for Supramolecular Chemistry and Catalysis and Department of Chemistry, College of Science, Shanghai University, Shanghai 200444, China

^bSkaggs Institute for Chemical Biology and Department of Chemistry, The Scripps Research Institute, La Jolla, CA 92037, United States

Higher affinity of alkyl iodides towards hydrophobic cavity is commonly observed in water with respect to bromides and chlorides, due to their lower-water solubility. Here, we report extremely rare selectivity towards alkyl chlorides in presence of iodides in water in an open-ended container (host 1), pointing out the importance of size and nature of the halogen atom (Cl, Br or I) in the formation of intramolecular C–H hydrogen bonds on non-activated alkyl halides.

Chinese Chemical Letters 34 (2023) 107834



Selective inhibition of resistant bacterial pathogens using a β -lactamase-activatable antimicrobial peptide with significantly reduced cytotoxicity

Weipan Xu^a, Zheng Ma^a, Geetika Dhanda^b, Jayanta Halder^{b,c}, Hexin Xie^a

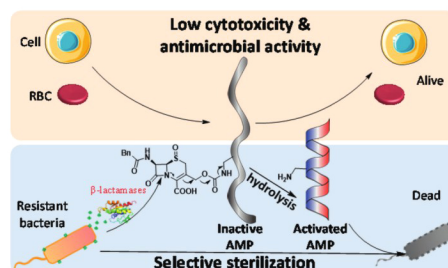
^a State Key Laboratory of Bioreactor Engineering, Shanghai Key Laboratory of New Drug Design, Frontiers Science Center for Materiobiology and Dynamic Chemistry, Shanghai Frontier Science Research Base of Optogenetic Techniques for Cell Metabolism, School of Pharmacy, East China University of Science and Technology, Shanghai 200237, China

^b Antimicrobial Research Laboratory, New Chemistry Unit, Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Jakkur, Bengaluru 560064, India

^c School of Advanced Materials, Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Jakkur, Bengaluru 560064, India

A novel β -lactamase-activatable antimicrobial peptide with significantly reduced cytotoxicity to mammalian cells has been reported for the specific inhibition of resistant bacteria.

Chinese Chemical Letters 34 (2023) 107847



Pillar[5]arene-modified peptide-guanidiniocarbonylpyrrol amphiphiles with gene transfection properties

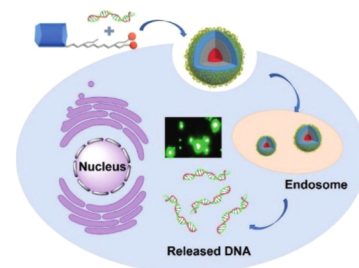
Kaiya Wang^a, Minzan Zuo^a, Tao Zhang^a, Huilan Yue^b, Xiao-Yu Hu^{a,b}

^a College of Materials Science and Technology, Nanjing University of Aeronautics and Astronautics, Nanjing 211106, China

^b Qinghai Provincial Key Laboratory of Tibetan Medicine Research and Key Laboratory of Tibetan Medicine Research, Northwest Institute of Plateau Biology, Chinese Academy of Sciences, Xining 810008, China

Pillar[5]arene-modified amphiphilic peptides with guanidiniocarbonylpyrrol moiety could self-assembled into multivalent cationic superstructures and demonstrated great potential for gene transfection.

Chinese Chemical Letters 34 (2023) 107848



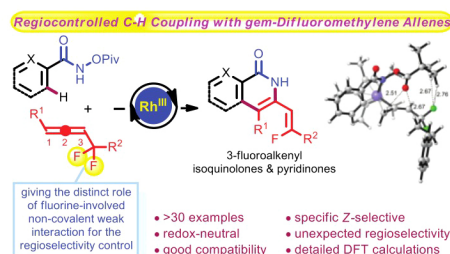
Regiocontrolled Rh(III)-catalyzed C–C coupling/C–N cyclization mediated by distinctive 1,2-migratory insertion of gem-difluoromethylene allenes: Reaction development and mechanistic insight

Zhi Zhou, Kaifeng Chen, Yi Wang, Xiuhua Zhong, Shuang Lin, Hui Gao, Wei Yi

Guangzhou Municipal and Guangdong Provincial Key Laboratory of Molecular Target & Clinical Pharmacology, NMPA and State Key Laboratory of Respiratory Disease, School of Pharmaceutical Sciences and the Fifth Affiliated Hospital, Guangzhou Medical University, Guangzhou 511436, China

Distinct fluorine-involved non-covalent weak interaction fulfills the Rh(III)-catalyzed regioselective C–H functionalization with newly developed gem-difluoromethylene allenes, leading to the facile construction of 3-fluoroalkenyl isoquinolone and pyridinone derivatives. Detailed mechanistic studies clarify the distinctive fluorine-effect and the origin of the unconventional selectivity.

Chinese Chemical Letters 34 (2023) 107849



In silico design of anti-tumor mini-protein targeting MDM2

Jinghui Zhang^{a,b,c}, Huixin Xu^{a,b,c}, Baishi Wang^a, Xuekai Zhang^d, Lei Fu^a, Yannan Li^a, Guanzhao Wu^a, Zitong Zhao^a, Lu Liu^a, Ting Yang^a, Zheyu Zhang^a, Jinbo Yang^{a,c}, Tao Jiang^{a,b}, Peiju Qiu^{a,c}, Rilei Yu^{a,b,c}

^a Key Laboratory of Marine Drugs, Chinese Ministry of Education, School of Medicine and Pharmacy, Ocean University of China, Qingdao 266003, China

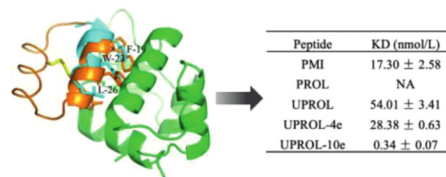
^b Laboratory for Marine Drugs and Bioproducts of Qingdao National Laboratory for Marine Science and Technology, Qingdao 266237, China

^c Innovation Center for Marine Drug Screening & Evaluation Pilot National Laboratory for Marine Science and Technology (Qingdao), Qingdao 266003, China

^d Department of Biological Engineering, College of Chemical and Biological Engineering, Shandong University of Science and Technology, Qingdao 266590, China

We designed a stable disulfide-crosslinked mini-protein with a two-helical topology that possess high binding affinity with MDM2.

Chinese Chemical Letters 34 (2023) 107871



Palladium-catalyzed carbonylative cyclization of alkene-tethered indoles with phenols or arylboronic acids: Construction of carbonyl-containing indolo[2,1-*a*]isoquinoline derivatives

Siqi Wang^a, Jian-Shu Wang^a, Jun Ying^a, Xiao-Feng Wu^{b,c}

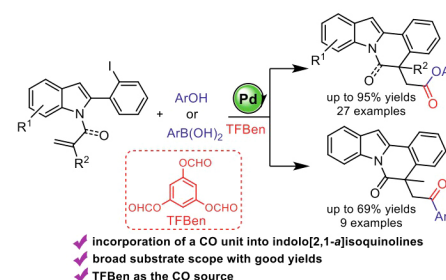
^a Department of Chemistry, Key Laboratory of Surface & Interface Science of Polymer Materials of Zhejiang Province, Zhejiang Sci-Tech University, Hangzhou 310018, China

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

^c Leibniz-Institut für Katalyse e. V., Albert-Einstein-Straße 29a, Rostock 18059, Germany

A novel palladium-catalyzed carbonylative cyclization of alkene-tethered indoles with phenols or arylboronic acids has been developed for the expedite construction of indolo[2,1-*a*]isoquinoline scaffolds. By using TFBen as the CO source, this protocol enables the incorporation of a carbonyl group into indolo[2,1-*a*]isoquinoline scaffolds, producing various carbonyl-containing indolo[2,1-*a*]isoquinoline derivatives in good yields.

Chinese Chemical Letters 34 (2023) 107873



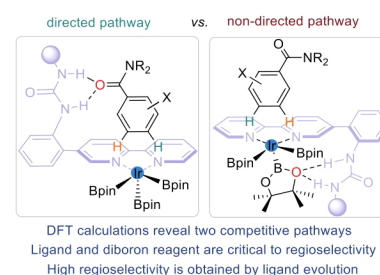
Control of *meta*-selectivity in the Ir-catalyzed aromatic C-H borylation directed by hydrogen bond interaction: A combined computational and experimental study

Wenju Chang, Yajun Wang, Yu Chen, Jiawei Ma, Yong Liang

State Key Laboratory of Coordination Chemistry, Jiangsu Key Laboratory of Advanced Organic Materials, Chemistry and Biomedicine Innovation Center, School of Chemistry and Chemical Engineering, Nanjing University, Nanjing 210023, China

A non-directed pathway is discovered in the hydrogen bond interaction directed *meta*-selective C-H borylation of benzamides, in which the urea moiety in ligand recognizes the O atom of Bpin instead of the C=O group of substrate. It competes with the directed pathway and erodes the *meta*-selectivity. Computational studies indicate that this non-directed pathway can be impeded by introducing a bulky substituent into the urea moiety, which is validated by experiments.

Chinese Chemical Letters 34 (2023) 107879



Synthesis of stimuli-responsive pillararene-based supramolecular polymer materials for the detection and separation of metal ions

Yongfu Li^a, Xinyue Lou^a, Chunyu Wang^b, Yan Wang^a, Yu Jia^c, Qi Lin^c, Yingwei Yang^a

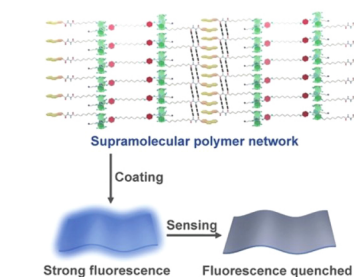
^a International Joint Research Laboratory of Nano-Micro Architecture Chemistry, College of Chemistry, Jilin University, Changchun 130012, China

^b State Key Laboratory of Supramolecular Structure and Materials, Institute of Theoretical Chemistry, Laboratory of Theoretical and Computational Chemistry, College of Chemistry, Jilin University, Changchun 130012, China

^c Key Laboratory of Eco-Functional Polymer Materials of the Ministry of Education, Key Laboratory of Eco-Environmental Polymer Materials of Gansu Province, College of Chemistry and Chemical Engineering, Northwest Normal University, Lanzhou 730070, China

Stimuli-responsive pillararene-based supramolecular polymer materials were constructed for the detection and separation of metal ions, and the resulting xerogel was successfully used to remove Fe³⁺ from water with high adsorption efficiency.

Chinese Chemical Letters 34 (2023) 107877



Methylselenized glucose: An efficient organoselenium fertilizer enhancing the selenium content in wheat grains

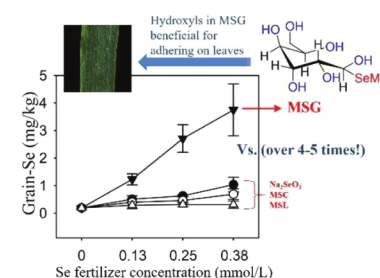
Limei Xian^a, Qianru Li^a, Tao Li^a, Lei Yu^b

^a Key Laboratory of Plant Functional Genomics of the Ministry of Education/Jiangsu Key Laboratory of Crop Genomics and Molecular Breeding/Collaborative Innovation of Modern Crops and Food Crops in Jiangsu/Jiangsu Key Laboratory of Crop Genetics and Physiology, College of Agriculture, Yangzhou University, Yangzhou 225009, China

^b School of Chemistry and Chemical Engineering, Yangzhou University, Yangzhou 225002, China

Methylselenized glucose (MSG) was surprisingly found to be a preferable fertilizer for selenium biofortification in wheat, and its effect was far stronger than methylselenized selenocysteine (MSC), the structure unit of the selenium-containing proteins in wheat grains. MSG is easy to prepare and is now commercially available at relatively low cost, thus MSG can be used as a potential organic selenium fertilizer to provide a source of selenium for agronomic biofortification.

Chinese Chemical Letters 34 (2023) 107878



Phosphine oxide directing-group-enabled atroposelective C–H bond acyloxylation *via* an eight-membered palladacycle intermediate

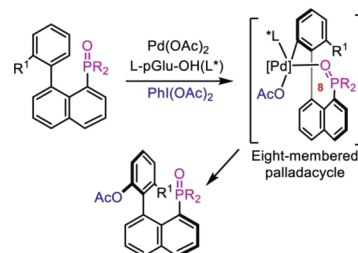
Peng-Bo Bai^a, Ming-Ying Wu^a, Xin-Xin Yang^a, Gang-Wei Wang^a, Shang-Dong Yang^{a,b}

^aState Key Laboratory of Applied Organic Chemistry, Lanzhou University, Lanzhou 730000, China

^bState Key Laboratory for Oxo Synthesis and Selective Oxidation, Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, Lanzhou 730000, China

An atroposelective C(sp²)-H bond acyloxylation reaction was enabled by a phosphine oxide directing-group, and likely proceeds through a unique eight-membered palladacycle intermediate, as opposed to a kinetically and thermodynamically favored five-membered palladacycle intermediate.

Chinese Chemical Letters 34 (2023) 107894



Efficient synthesis of cyclic imides by the tandem N-arylation-acylation and rearrangement reaction of cyanoesters with diaryliodonium salts

Zhiyuan Bao, Chao Chen

MOE Key Laboratory of Bioorganic Phosphorus Chemistry & Chemical Biology, Department of Chemistry, Tsinghua University, Beijing 100084, China

An efficient method for the synthesis of multi-substituted cyclic imides was developed with cyanoesters and diaryliodonium salts. This method proceeds through a cascade of *N*-arylation-acylation and rearrangement to give target heterocycles in good yields (up to 99%). This method has the major advantages of a broad substrate scope, excellent functional group compatibility. The strategy was also extended to the fused cyclic imides, such as malonimides, succinimides and glutarimides.

Chinese Chemical Letters 34 (2023) 107913



Effectively arsenic(V) and fluoride removal in geothermal water using magnetic Fe₃O₄@MgO nanoparticles

Qiangying Zhang^a, Xin Tan^{a,b}, Tao Yu^c

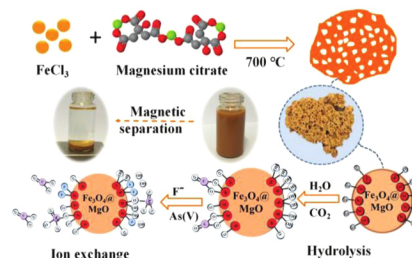
^aSchool of Science, Tibet University, Lhasa 850000, China

^bSchool of Environmental Science and Engineering, Tianjin University, Tianjin 300350, China

^cSchool of Chemical Engineering and Technology, Tianjin University, Tianjin 300350, China

A unique simple, convenient, and scalable chemical route to synthesize Fe₃O₄@MgO adsorbent, aiming for simultaneous removal of arsenic and fluoride from geothermal water system.

Chinese Chemical Letters 34 (2023) 107748



Coupling of sulfur and boron in carbonaceous material to strengthen persulfate activation for antibiotic degradation: Active sites, mechanism, and toxicity assessment

Feng Ye^a, Wei Sun^a, Kangfeng Pang^a, Wenchao Yang^b, Mengjie Pu^c, Qichun Zhang^d

^aResearch Center for Eco-environmental Engineering, Dongguan University of Technology, Dongguan 523830, China

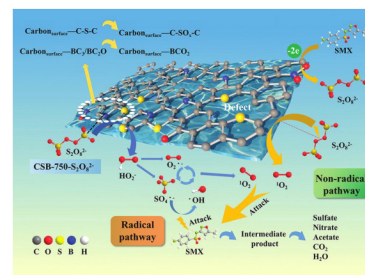
^bGuangling College and School of Horticulture and Plant Protection, Yangzhou University, Yangzhou 225009, China

^cCollege of Life and Environmental Science, Wenzhou University, Wenzhou 325035, China

^dCenter of Super-Diamond and Advanced Films (COSDAF), City University of Hongkong, Hong Kong, China

Coupling effect of sulfur and boron promotes the catalytic activity, and the radical and non-radical pathways jointly participate in the sulfamethoxazole degradation.

Chinese Chemical Letters 34 (2023) 107755



Highly efficient electrocatalytic deuteration of acetylene to deuterated ethylene using deuterium oxide

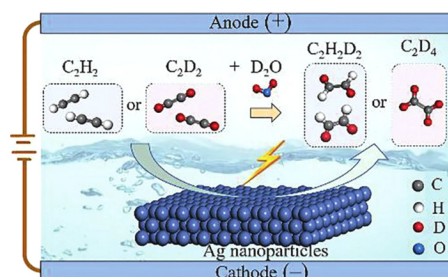
Siyu Chang^a, Jun Bu^a, Jinjin Li^a, Jin Lin^a, Zhenpeng Liu^b, Wenxiu Ma^a, Jian Zhang^{a,b}

^aKey Laboratory of Special Functional and Smart Polymer Materials of Ministry of Industry and Information Technology, School of Chemistry and Chemical Engineering, Northwestern Polytechnical University, Xi'an 710129, China

^bState Key Laboratory of Solidification Processing and School of Materials Science and Engineering, Northwestern Polytechnical University, Xi'an 710072, China

An efficient electrocatalytic deuteration approach with deuterium oxide as deuteration source is developed for continuous production of deuterated ethylene from acetylene. For deuterated ethylene, Ag nanoparticles exhibit a high Faradic efficiency of 99.3% and a record production rate of $3.72 \times 10^3 \text{ mmol h}^{-1} \text{ g}_{\text{cat}}^{-1}$, which opens a new window for the synthesis of deuterated alkenes and other chemicals.

Chinese Chemical Letters 34 (2023) 107765



Ce-doped MIL-125-NH₂ coupled Ce⁴⁺/Ce³⁺ and Ti⁴⁺/Ti³⁺ redox mediators for thermo-enhanced photocatalytic oxidative desulfurization

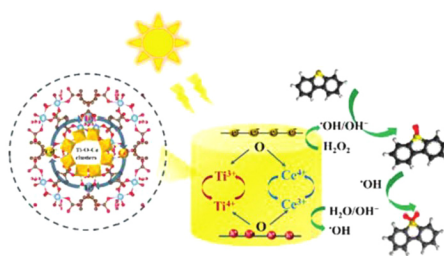
Kaiyue Zhang^a, Feng Chu^a, Yezi Hu^b, Xiubing Huang^a, Guixia Zhao^b, Ge Wang^a

^aBeijing Key Laboratory of Function Materials for Molecule & Structure Construction, School of Materials Science and Engineering, University of Science and Technology Beijing, Beijing 100083, China

^bCollege of Environmental Science and Engineering, North China Electric Power University, Beijing 102206, China

Ce-doped MIL-125-NH₂ is effective in photocatalytic oxidative desulfurization under mild conditions due to the large surface area, and the formation of Ce-Ti-oxo clusters with Ce⁴⁺/Ce³⁺ and Ti⁴⁺/Ti³⁺ redox mediators.

Chinese Chemical Letters 34 (2023) 107766



Promotion effect of bulk sulfates over CeO₂ for selective catalytic reduction of NO by NH₃ at high temperatures

Jiawei Ji^a, Li Han^a, Wang Song^a, Jingfang Sun^d, Weixin Zou^b, Changjin Tang^c, Lin Dong^{a,b,d}

^aLaboratory of Mesoscopic Chemistry of MOE, School of Chemistry and Chemical Engineering, Nanjing University, Nanjing 210023, China

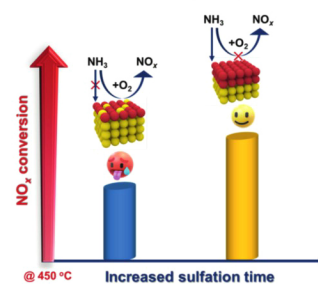
^bSchool of the Environment, Nanjing University, Nanjing 210023, China

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

^dJiangsu Key Laboratory of Vehicle Emission Control, Center of Modern Analysis, Nanjing University, Nanjing 210023, China

With the extension of sulfation treatment, sulfates are gradually diffused into the bulk phase of CeO₂ and form bulk sulfates. Bulk sulfates promote NH₃ adsorption and inhibit NH₃ oxidation at high temperatures, thus ensuring remarkable high-temperature catalytic activity.

Chinese Chemical Letters 34 (2023) 107769



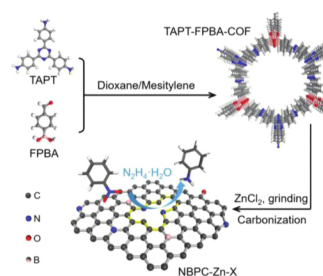
Tuning electron delocalization and surface area in COFs derived N, B co-doped carbon materials for efficient selective hydrogenation of nitroarenes

Hao Hu, Chunlei Song, Di Wang, Yinglong Tao, Shijian Zhou, Yan Kong

State Key Laboratory of Materials-Oriented Chemical Engineering, College of Chemical Engineering, Nanjing Tech University, Nanjing 210009, China

A novel N, B co-doped carbon material derived by pre-designed COFs and molten salts achieves the regulation of doped N species and surface areas in carbon network, which accelerates the selective hydrogenation of nitroarenes.

Chinese Chemical Letters 34 (2023) 107770



Cell mechanics and energetic costs of collective cell migration under confined microchannels

Xiao-Hong Wang^{a,b}, Yu Liu^a, Bin Kang^a, Jing-Juan Xu^a, Hong-Yuan Chen^a

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

^bDepartment of Chemical and Chemical Engineering, Hefei Normal University, Hefei 230601, China

In this study, we designed microchannels with different widths to confine cells. The effects of confinement on the collective cell migration behavior were analyzed by measuring the intercellular tension and energetic costs.

Chinese Chemical Letters 34 (2023) 107789



An integrated microfluidic chip-mass spectrometry system for rapid antimicrobial resistance analysis of bacteria producing β -lactamases

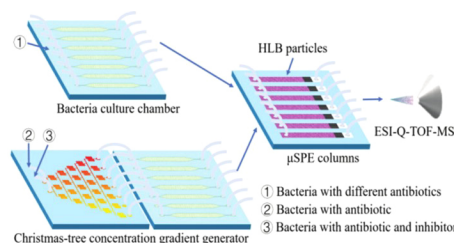
Zhaochen Su^a, Wanting Hu^a, Lizhen Ye^a, Dan Gao^a, Jin-Ming Lin^b

^aState Key Laboratory of Chemical Oncogenomics, Key Laboratory of Chemical Biology, Tsinghua Shenzhen International Graduate School, Tsinghua University, Shenzhen 518055, China

^bDepartment of Chemistry, Beijing Key Laboratory of Microanalytical Methods and Instrumentation, Key Laboratory of Bioorganic Phosphorus Chemistry & Chemical Biology (Ministry of Education), Tsinghua University, Beijing 100084, China

Here, we report a multi-channel microfluidic chip coupled with mass spectrometry to identify bacteria producing β -lactamases and carry out corresponding antimicrobial susceptibility test. This system for the analysis of bacteria producing β -lactamases is rapid, precise and high-throughput and has great potential for clinical application.

Chinese Chemical Letters 34 (2023) 107790



Optimizing oxygen redox kinetics of M-N-C electrocatalysts via an *in-situ* self-sacrifice template etching strategy

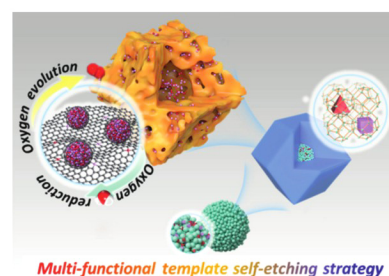
Yang Yuan^a, Jingwen Wang^a, Wenbo Shi^a, Xinyi Bai^a, Ge Li^b, Zhengyu Bai^a, Lin Yang^a

^aSchool of Chemistry and Chemical Engineering, Key Laboratory of Green Chemical Media and Reaction, Ministry of Education, Collaborative Innovation Center of Henan Province for Fine Chemicals Green Manufacturing, Xinlian College, Henan Normal University, Xinxiang 453007, China

^bDepartment of Mechanical Engineering, University of Alberta, 10-348 Donadeo Innovation Centre for Engineering, Edmonton, AB T6G 1H9, Canada

We present an “*in-situ* self-etching strategy” for reconstructing MOF-derived M-N-C catalysts, which can introduce micro-meso-macro pores with continuous apertures in a wide range and a central hollow-out structure towards optimized ORR kinetics in zinc-air battery. It is realized through that the self-sacrifice template of the inside ZnO sphere *in-situ* etches the M-N-C shell during precursor pyrolysis without specific template removal.

Chinese Chemical Letters 34 (2023) 107807



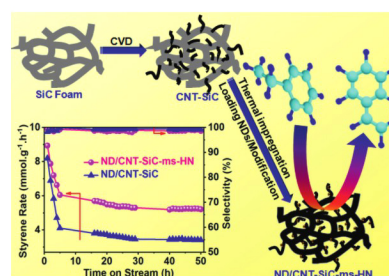
An efficient nanodiamond-based monolithic foam catalyst prepared by a facile thermal impregnation strategy for direct dehydrogenation of ethylbenzene to styrene

Guifang Ge, Xiaojing Wei, Hongchen Guo, Zhongkui Zhao

State Key Laboratory of Fine Chemicals, Department of Catalysis Chemistry and Engineering, School of Chemical Engineering, Dalian University of Technology, Dalian 116024, China

In this work, a thermal impregnation strategy was reported to prepare novel nanodiamond-based foam monolithic catalyst with high dispersion, exhibiting excellent catalytic performance for direct dehydrogenation of ethylbenzene. It could be a practical metal-free carbocatalyst for energy-saving styrene production.

Chinese Chemical Letters 34 (2023) 107808



Density functional theory calculations on 2H-MoS₂ monolayer for HCHO degradation: Piezoelectric-photocatalytic synergy

Yushan Zhu^a, Weina Zhao^a, Binghua Jing^{a,b}, Junhui Zhou^c, Bihai Cai^a, Didi Li^a, Zhimin Ao^{a,c}

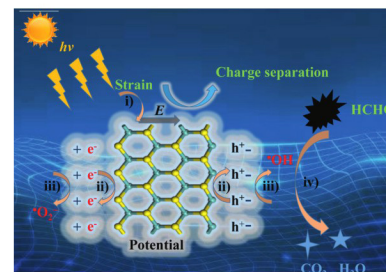
^aGuangzhou Key Laboratory Environmental Catalysis and Pollution Control, Guangdong Key Laboratory of Environmental Catalysis and Health Risk Control, School of Environmental Science and Engineering, Institute of Environmental Health and Pollution Control, Guangdong University of Technology, Guangzhou 510006, China

^bDepartment of Civil and Environmental Engineering, The Hong Kong University of Science and Technology, Kowloon, Hong Kong 99977, China

^cAdvanced Interdisciplinary Institute of Environment and Ecology, Beijing Normal University, Zhuhai 519087, China

In this work, piezoelectric and photocatalytic synergy was systemically investigated based on DFT calculations on HCHO degradation by 2H-MoS₂.

Chinese Chemical Letters 34 (2023) 107816



Highly dispersed L1₂-Pt₃Fe intermetallic particles supported on single atom Fe-N_x-C_y active sites for enhanced activity and durability towards oxygen reduction

Tuo Zhao^{a,b}, Yang Li^{a,b}, Jie Liu^{a,b}, Xian Wang^{a,b}, Jiayi Zhang^c, Changpeng Liu^{a,b}, Wei Xing^{a,b}, Junjie Ge^{a,b}

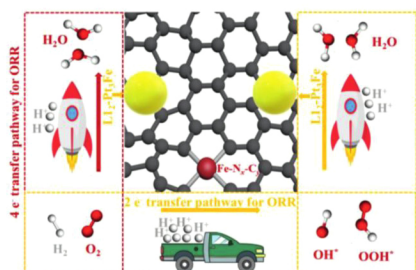
^aState Key Laboratory of Electroanalytical Chemistry, Jilin Province Key Laboratory of Low Carbon Chemical Power, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, Changchun 130022, China

^bSchool of Applied Chemistry and Engineering, University of Science and Technology of China, Hefei 230026, China

^cFuyuan British American School, Shenzhen 518126, China

A composite catalyst comprising of ordered L1₂-Pt₃Fe intermetallic nanoparticles interacted with single atom Fe-N_x-C_y active sites, the catalyst showed enhanced activity (1.010 A/mg_{Pt}) and durability (11 mV E_{1/2} loss after 30,000 cycles) toward oxygen reduction reaction (ORR).

Chinese Chemical Letters 34 (2023) 107824



A non-two-dimensional van der Waals InSe semispherical array grown by vapor-liquid-solid method for hydrogen evolution

Jun Wang^{a,b}, Tao Liang^b, Huihui Li^{a,b}, Junjie Xiong^{b,c}, Bowen Liu^{b,c}, Xiaohui Xu^{b,c}, Yang Gao^b, Zhongliang Yu^b, Qiang Zheng^{b,c}, Shouting Zhang^a, Bin Wang^{b,c}

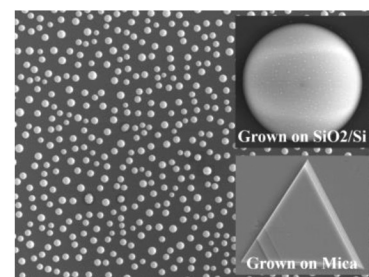
^aTianjin Key Laboratory of Molecular Optoelectronic Sciences, Department of Chemistry, School of Sciences, Tianjin University, Tianjin 300072, China

^bCAS Key Laboratory of Nanosystem and Hierarchical Fabrication, National Center for Nanoscience and Technology (NCNST), Beijing 100190, China

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

A controlled synthesis of the layered InSe with a novel semispherical array structure was achieved, which showed enhanced electrocatalytic hydrogen evolution performance than the 2D InSe materials.

Chinese Chemical Letters 34 (2023) 107826



Diagnosis and subtype classification on serum peptide fingerprints by mesoporous polydopamine with built-in metal-organic framework

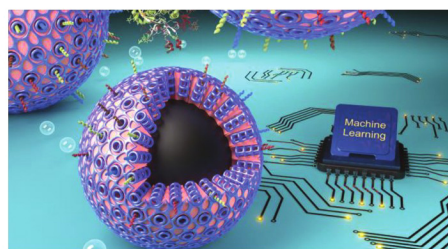
Zixing Xu^a, Haolin Chen^a, Huimin Chu^a, Xizhong Shen^b, Chunhui Deng^{a,b}, Nianrong Sun^b, Hao Wu^b

^aDepartment of Gastroenterology and Hepatology, Zhongshan Hospital, Department of Chemistry, Institute of Metabolism & Integrative Biology (IMIB), Fudan University, Shanghai 200433, China

^bDepartment of Gastroenterology and Hepatology, Zhongshan Hospital, Fudan University, Shanghai 200032, China

A mesoporous polydopamine with built-in metal-organic framework is designed and prepared. By further combining MALDI-TOF MS and machine learning, serum peptide fingerprints from Crohn's disease and healthy control are acquired and eight specific peptide features are eventually screened out, which realize the diagnosis and subtype classification of Crohn's disease.

Chinese Chemical Letters 34 (2023) 107829



Efficient degradation of sulfacetamide by CoFe PBAs and PBA@PVDF composite membrane activating peroxymonosulfate

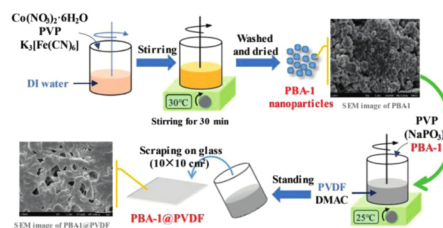
Ruonan Guo^a, Ying Chen^a, Ying Yang^a, Jiangwei Shang^{a,b}, Xiuwen Cheng^{a,b}

^aKey Laboratory for Environmental Pollution Prediction and Control, Gansu Province, College of Earth and Environmental Sciences, Lanzhou University, Lanzhou 730000, China

^bKey Laboratory of Pollutant Chemistry and Environmental Treatment, College of Chemistry and Environmental Science, Yili Normal University, Yining 835000, China

Co-Fe PBAs were synthesized for peroxymonosulfate (PMS) activation to degrade sulfacetamide. Besides, a PBA-1@polyvinylidene fluoride (PVDF) catalytic membrane was further prepared to expand the application potential of PBA nanoparticles.

Chinese Chemical Letters 34 (2023) 107837



In-situ assembly of 2D/3D porous nickel cobalt sulfide solid solution as superior pre-catalysts to boost multi-functional electrocatalytic oxidation

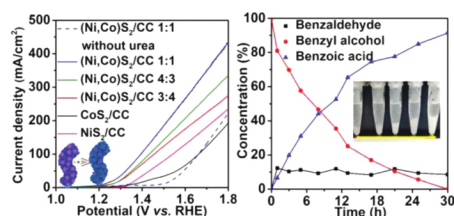
Pin Hao^a, Xu Dong^a, Houguang Wen^a, Ruirui Xu^a, Junfeng Xie^a, Qian Wang^a, Guanwei Cui^a, Jian Tian^b, Bo Tang^a

^aCollege of Chemistry, Chemical Engineering and Materials Science, Collaborative Innovation Center of Functionalized Probes for Chemical Imaging in Universities of Shandong, Key Laboratory of Molecular and Nano Probes, Ministry of Education, Shandong Provincial Key Laboratory of Clean Production of Fine Chemicals, Shandong Normal University, Ji'nan 250014, China

^bSchool of Materials Science and Engineering, Shandong University of Science and Technology, Qingdao 266590, China

The interaction between Ni and Co, the 2D/3D hierarchical architecture as well as the high porosity of (Ni, Co)₂S₃ pre-catalyst contribute to the satisfied catalytic performance, in which a high conversion of benzyl alcohol (97.50%), a good selectivity to benzoic acid (93.78%) and a satisfied faraday efficiency (91.86%) can be achieved.

Chinese Chemical Letters 34 (2023) 107843



Lower oxygen vacancy concentration in BiPO₄ with unexpected higher photocatalytic activity

Jun Xiong^a, Haoxue Huang^a, Bo Lin^c, Jiexiang Xia^a, Jun Di^b

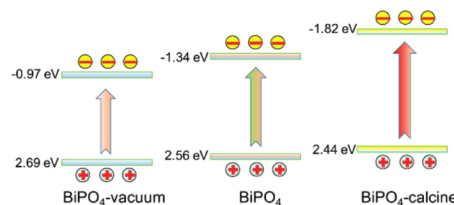
^aSchool of Chemistry and Chemical Engineering, Institute for Energy Research, Jiangsu University, Zhenjiang 212013, China

^bSchool of Chemistry and Chemical Engineering, National Special Superfine Powder Engineering Research Center, Nanjing University of Science and Technology, Nanjing 210094, China

^cSchool of Chemical Engineering and Technology, Xi'an Jiaotong University, Xi'an 710049, China

Can higher defect concentration bring about higher photocatalytic activity? This is an open question. In this work, we surprisingly found that lower defect concentration in BiPO₄ shows better photocatalytic performance.

Chinese Chemical Letters 34 (2023) 107844



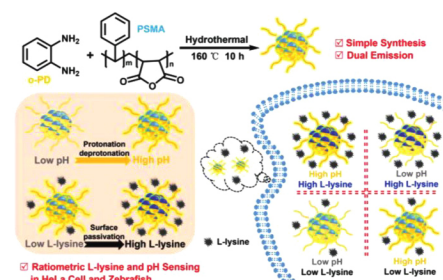
Dual-emission carbonized polymer dots for ratiometric sensing and imaging of L-lysine and pH in live cell and zebrafish

Xiaoxiao Hu, Hongjing Wu, Qiang Zhang, Feng Gao

Laboratory of Functionalized Molecular Solids, Ministry of Education, Anhui Key Laboratory of Chemo/Biosensing, College of Chemistry and Materials Science, Anhui Normal University, Wuhu 241002, China

Ratiometric sensing and imaging of L-lysine and pH in HeLa cells and zebrafish are successfully achieved with the dual-emission carbonized polymer dots at 470 nm in blue region and 558 nm in yellow region, which are facilely prepared using o-phenylenediamine and poly(styrene-co-maleic anhydride) as precursors through one-step hydrothermal amide reaction.

Chinese Chemical Letters 34 (2023) 107846



Facile preparation of hierarchical Ni@Mn-doped NiO hybrids for efficient and durable oxygen evolution reaction

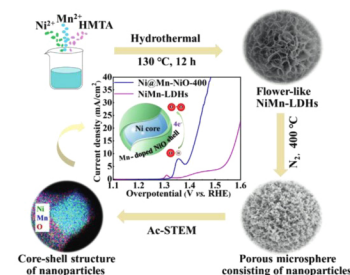
Yi Liu^a, Liang Bai^a, Qiqi Jia^a, Peitong Li^a, Yao Yan^a, Ningkai Yuan^a, Xiaodong Hao^b

^aSchool of Materials Science and Engineering, Shaanxi Key Laboratory of Green Preparation and Functionalization for Inorganic Materials, Institute of Frontier Science and Technology Transfer, Shaanxi University of Science and Technology, Xi'an 710021, China

^bMaterials Institute of Atomic and Molecular Science, Shaanxi University of Science and Technology, Xi'an 710021, China

The Ni@Mn-doped NiO hybrids are synthesized via simple hydrothermal and calcination methods, exhibit porous and core-shell structures combined with nanocrystals and element doping, as well as achieve outstanding OER performance and durable stability in water splitting.

Chinese Chemical Letters 34 (2023) 107855



Selective electroreduction of nitrate to ammonia via NbWO₆ perovskite nanosheets with oxygen vacancy

Tao Feng^a, Fengting Li^{b,c}, Xiaojun Hu^a, Ying Wang^{b,c}

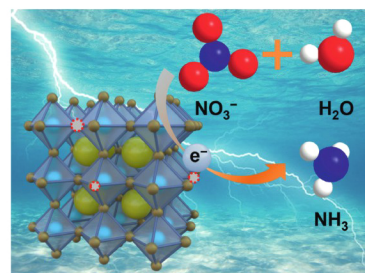
^aSchool of Chemical and Environmental Engineering, Shanghai Institute of Technology, Shanghai 201418, China

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

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

NbWO_{6-x} nanosheets with OV_s exhibited the high activity and excellent durability toward NRA. Experimental data and computational studies revealed OV_s were beneficial to electron transitions and lower NO₃⁻ adsorption as well activation energy. DEMS measurements were introduced to detect the production of NO and NH₂OH during the NRA which demonstrated the reaction mechanism and pathway.

Chinese Chemical Letters 34 (2023) 107862



Construction of nanoreactors on TiO₂ nanotube arrays as a POCT device for sensitive colorimetric detection

Jingwen Xu, Chenchen Liang, Zhida Gao, Yan-Yan Song

College of Sciences, Northeastern University, Shenyang 110004, China

Hydrophilic patterns were designed on TiO₂-nanotube arrays (TiNTs) as nanoreactors for a naked-eye colorimetric assay. Nano test tubes in TiNTs provide a long observation length, and indicator/analyte are further limited in a confined void by hydrophilic nanoreactors, thus allowing signal amplification for colorimetric sensing.

Chinese Chemical Letters 34 (2023) 107863



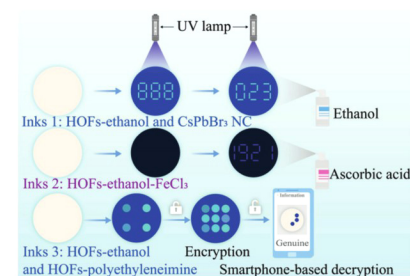
Information encryption with a high information-carrying capacity based on a stimulus-responsive hydrogen-bonded organic framework and a smartphone

Tianran Lin, Chunsuo Tian, Ying Sun, Shendong Liu, Di Wang, Li Hou, Shulin Zhao

State Key Laboratory for Chemistry and Molecular Engineering of Medicinal Resources, School of Chemistry and Pharmaceutical Sciences, Guangxi Normal University, Guilin 541004, China

Owing to the changes of decryption reagents, RGB thresholds, and key figures, an encryption method with high information-carrying capacity and high-level security by an easy operation was constructed based on a HOF-PyTTA and a self-written smartphone APP.

Chinese Chemical Letters 34 (2023) 107864



Design and characterizing of robust probes for enhanced mass spectrometry imaging and spatially resolved metabolomics

Jianpeng Huang^{a,b}, Shanshan Gao^{a,b}, Kai Wang^c, Jin Zhang^{a,b}, Xuechao Pang^{a,b}, Junwen Shi^c, Jiuming He^{a,b}

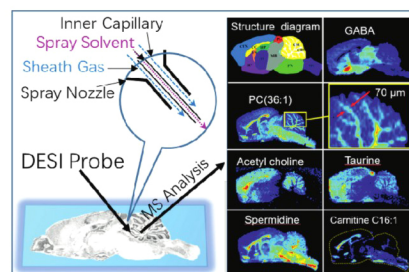
^aState Key Laboratory of Bioactive Substance and Function of Natural Medicines, Institute of Materia Medica, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing 100050, China

^bNMPA Key Laboratory of Safety Research and Evaluation of Innovative Drug, Institute of Materia Medica, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing 100050, China

^cViktor Technology Co., Ltd., Beijing 101100, China

Fine probe (P-100) and large probe (P-200) were designed and characterized to perform reliable and repeatable air-flow assisted desorption electrospray ionization mass spectrometry imaging for spatially resolved metabolomics analysis.

Chinese Chemical Letters 34 (2023) 107865



Activation of hydrogen peroxide by molybdenum disulfide as Fenton-like catalyst and cocatalyst: Phase-dependent catalytic performance and degradation mechanism

Yue Li^a, Bo Yu^{a,b}, Huimin Li^{a,b}, Bo Liu^a, Xiang Yu^a, Kewei Zhang^a, Gang Qin^b, Jiahao Lu^a, Lihui Zhang^a, Longlu Wang^c

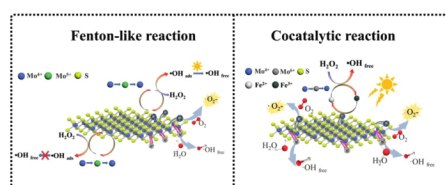
^aSchool of Chemical and Printing-Dyeing Engineering, Henan International Joint Laboratory of Rare Earth Composite Materials, Henan University of Engineering, Xinzheng 451191, China

^bSchool of Material Science and Engineering, Henan Polytechnic University, Jiaozuo 454001, China

^cCollege of Electronic and Optical Engineering & College of Microelectronics, Institute of Flexible Electronics (Future Technology), Nanjing University of Posts & Telecommunications, Nanjing 210023, China

Phase-mediated activation of H_2O_2 and different mechanism of generating $\cdot\text{OH}$ were found in $\text{MoS}_2/\text{H}_2\text{O}_2$ and $\text{MoS}_2/\text{Fe}^{2+}/\text{H}_2\text{O}_2$ systems under light or dark conditions. $\cdot\text{OH}_{\text{free}}$ radicals were mainly responsible for degradation.

Chinese Chemical Letters 34 (2023) 107874



Heterogeneous catalytic ozonation by amorphous boron for degradation of atrazine in water

Zirong Song^a, Jie Li^a, Hongxin Xu^b, Yu Li^a, Yaxiong Zeng^c, Baohong Guan^a

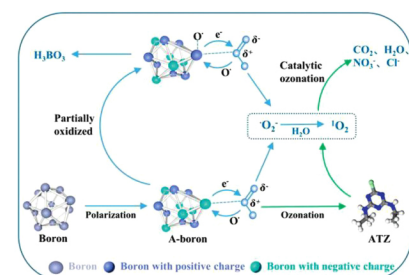
^aCollege of Environmental and Resource Sciences, Zhejiang University, Hangzhou 320058, China

^bYiwu Water Construction Group Co., Ltd., Yiwu 322000, China

^cCollege of Chemical and Biological Engineering, Zhejiang University, Hangzhou 320013, China

The B-B bonds and internal suboxide B in A-boron act as active sites to donate electrons for molecular ozone decomposition to generate ROS of $\cdot\text{O}_2^-$ and $^1\text{O}_2$, and further promote ATZ degradation through ROS reactions.

Chinese Chemical Letters 34 (2023) 107876



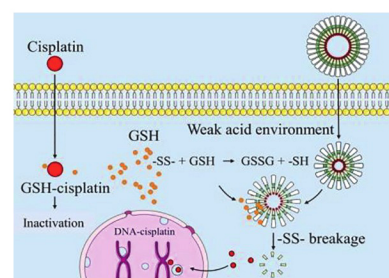
Switchable nanoparticles complexing cisplatin for circumventing glutathione depletion in breast cancer chemotherapy

Ming Chen, Ying Xie, Qian Luo, Jiarui Xu, Yuxin Ren, Rui Liu, Huihui Zhao, Yuling Chen, Hexuan Feng, Yafei Du, Jianwei Li, Guiling Wang, Wanliang Lu

State Key Laboratory of Natural and Biomimetic Drugs, Beijing Key Laboratory of Molecular Pharmaceutics and New Drug Delivery Systems, and School of Pharmaceutical Sciences, Peking University, Beijing 100191, China

Cisplatin reacts with glutathione (GSH) in cancer cells, leading to inactivation of cisplatin. The disulfide bond (-SS-) of switchable nanoparticles complexing cisplatin (switch NPs-cisplatin) are able to deplete intracellular GSH, thereby counteracting the consumption of cisplatin in cancer cells.

Chinese Chemical Letters 34 (2023) 107744



Integrated and dual-responsive lipopeptide nanovector with parallel effect to tumor and micro-environment regulation by efficient gene and drug co-delivery

Xiaobing Chen^a, Huan Yang^a, Xu Song^a, Hong Liang^{a,c}, Yu Wei^a, Jiao Lu^a, Matthias Barz^b, Rongrong Jin^a, Yu Nie^a

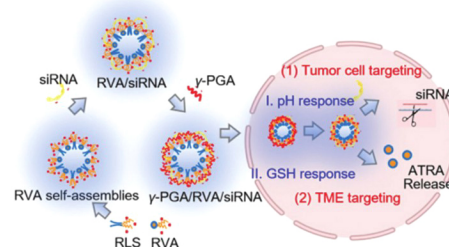
^a National Engineering Research Center for Biomaterials, Sichuan University, Chengdu 610064, China

^b Leiden Academic Center for Drug Research (LACDR), Leiden University, Leiden 2333 CC, The Netherlands

^c Department of Pharmacy, Sichuan Academy of Medical Sciences & Sichuan Provincial People's Hospital, School of Medicine, University of Electronic Science and Technology of China, Chengdu 610072, China

Poly(γ -glutamic acid) (γ -PGA)/RVA/siRNA complexes with pH & redox response have parallel effect on tumor and microenvironment regulation and can be used for tumor gene therapy.

Chinese Chemical Letters 34 (2023) 107753



Fabrication of microwave-sensitized nanospheres of covalent organic framework with apatinib for tumor therapy

Qijun Du^{a,c}, Jian Zou^a, Zhongbing Huang^a, Shimei Li^a, Longfei Tan^b, Xiangling Ren^b, Guangfu Yin^a, Yongfa Zheng^d, Xianwei Meng^b

^a College of Biomedical Engineering, Sichuan University, Chengdu 610065, China

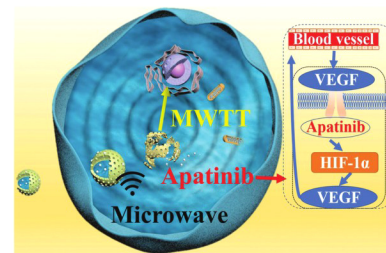
^b Laboratory of Controllable Preparation and Application of Nanomaterials, CAS Key Laboratory of Cryogenics, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing 100190, China

^c Sichuan Kangcheng Biotechnology Co., Ltd., Chengdu 610041, China

^d Department of Oncology, Renmin Hospital of Wuhan University, Wuhan 430060, China

Apatinib and microwave-sensitizer-loaded COF hollow nanosphere promote drug release under acidic conditions, and perform microwave ablation and drug therapy at the same time, achieving good tumor treatment.

Chinese Chemical Letters 34 (2023) 107763



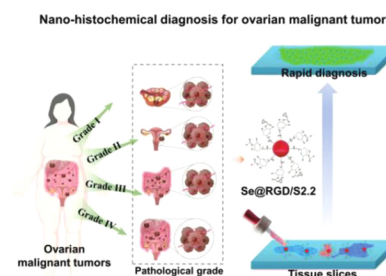
Highly specific selenium nanosystems for fluorescent image-guided rapid diagnosis and pathological grading of ovarian malignant tumors

Shaolie Zheng, Wei Huang, Nan Li, Yuan Shen, Xiaoyu Wang, Tianfeng Chen

Department of Obstetrics & Gynecology, The First Affiliated Hospital of Jinan University, Guangzhou 510630, China

Herein our study not only provides a strategy for the facile synthesis of nanoparticle diagnostic agents but also sheds light on their application in the clinical diagnosis and intraoperative visualization of malignant ovarian tumors.

Chinese Chemical Letters 34 (2023) 107764



Design, synthesis, and evaluation of PD-L1 degraders to enhance T cell killing activity against melanoma

Yang Liu^a, Mengzhu Zheng^c, Zhilu Ma^c, Yirong Zhou^c, Junfeng Huo^c, Wenbo Zhang^a, Yu Liu^c, Yuanyuan Guo^a, Xuechen Zhou^c, Hua Li^{a,b,c}, Lixia Chen^a

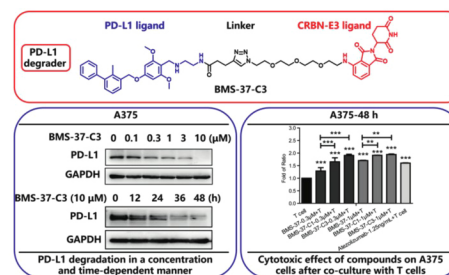
^a Wuya College of Innovation, Key Laboratory of Structure-Based Drug Design & Discovery, Ministry of Education, Shenyang Pharmaceutical University, Shenyang 110016, China

^b College of Pharmacy, Fujian University of Traditional Chinese Medicine, Fuzhou 350122, China

^c School of Pharmacy, Tongji-Rongcheng Center for Biomedicine, Tongji Medical College, Huazhong University of Science and Technology, Wuhan 430030, China

A novel PD-L1 degrader BMS-37-C3 could efficiently induce the degradation of PD-L1 in different cancer cell lines in dose-dependent and time-dependent manners. In a co-culture model of A375 and T cells, by degrading intracellular PD-L1, the direct killing effect of T cells on tumor cells was enhanced significantly.

Chinese Chemical Letters 34 (2023) 107762



Ultrabroad-band, white light emission from carbon dot-based materials with hybrid fluorescence/phosphorescence for single component white light-emitting diodes

Yuchen Li^a, Qijun Li^b, Shuai Meng^a, Yukun Qin^c, Dengke Cheng^a, Hailing Gu^a, Zifei Wang^d, Yunxia Ye^a, Jing Tan^a

^aInstitute of Micro-nano Optoelectronics and Terahertz Technology, School of Mechanical Engineering, Jiangsu University, Zhenjiang 212013, China

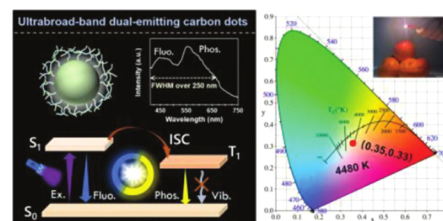
^bSchool of Mechanical Engineering, Yangzhou University, Yangzhou 225009, China

^cInstitute for Energy Research, Jiangsu University, Zhenjiang 212013, China

^dSchool of Materials Science & Engineering, Qilu University of Technology (Shandong Academy of Sciences), Ji'nan 250300, China

Pure white light emissive CD-based materials with FWHM over 250 nm were prepared based on fluorescence/phosphorescence dual-emission and were applied to single-component WLEDs.

Chinese Chemical Letters 34 (2023) 107794



Leveraging nano-engineered mesenchymal stem cells for intramedullary spinal cord tumor treatment

Lu Tang^{a,b}, Mengying Xie^{a,b}, Jing Li^{a,b}, Yijun Mei^{a,b}, Yuqi Cao^{a,b}, Qiaqia Xiao^{a,b}, Haijuan Dong^c, Yuhui Zhang^d, Wei Wang^{a,b}

^aDepartment of Pharmaceutics, State Key Laboratory of Natural Medicines, School of Pharmacy, China Pharmaceutical University, Nanjing 210009, China

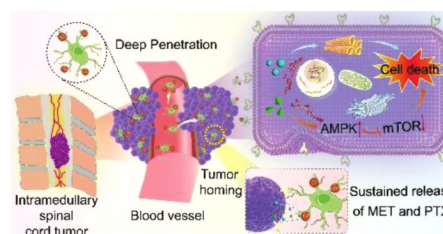
^bNMPA Key Laboratory for Research and Evaluation of Pharmaceutical Preparations and Excipients, China Pharmaceutical University, Nanjing 210009, China

^cThe Public Laboratory Platform, China Pharmaceutical University, Nanjing 210009, China

^dDepartment of Spine Surgery, Renji Hospital, School of Medicine, Shanghai Jiao Tong University, Shanghai 200127, China

Paclitaxel and metformin co-encapsulated nano-engineered mesenchymal stem cells for targeted intramedullary spinal cord tumor treatment.

Chinese Chemical Letters 34 (2023) 107801



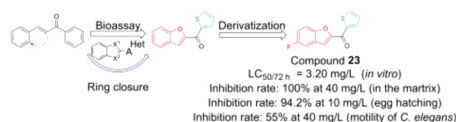
Synthesis, nematocidal evaluation, and SAR study of benzofuran derivatives containing 2-carbonyl thiophene

Xiaofeng Cao, Die Qiu, Ruifeng Zhang, Zhong Li, Xiaoyong Xu

Shanghai Key Laboratory of Chemical Biology, School of Pharmacy, East China University of Science and Technology, Shanghai 200237, China

Based on chalcone scaffold with various pesticide activity, a series of benzofuran compounds with 2-carbonyl thiophene were designed via ring closure and synthesized. The nematocidal activity, SAR, and effects on egg hatching, motility and feeding behavior of *C. elegans* of title compounds were investigated.

Chinese Chemical Letters 34 (2023) 107800



QM/MM study on the O₂ activation reaction of 4-hydroxylphenyl pyruvate dioxygenase reveals a common mechanism for α -ketoglutarate dependent dioxygenase

Linhui Li^a, Suitian Lai^c, Hongyan Lin^b, Xinyun Zhao^a, Xin Li^a, Xi Chen^a, Junjun Liu^c, Guangfu Yang^b, Changguo Zhan^d

^aCollege of Chemistry and Material Science, South-Central Minzu University, Wuhan 430074, China

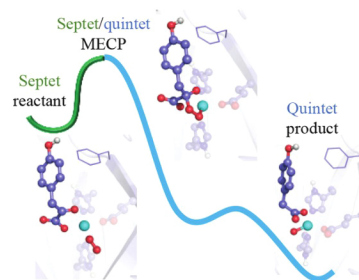
^bKey Laboratory of Pesticide & Chemical Biology of Ministry of Education, College of Chemistry, Central China Normal University, Wuhan 430079, China

^cSchool of Pharmacy, Tongji Medical College, Huazhong University of Science and Technology, Wuhan 430030, China

^dDepartment of Pharmaceutical Sciences, College of Pharmacy, University of Kentucky, Lexington, KY 40536, United States

The HPPD-catalyzed O₂ activating reaction runs on a septet-quintet potential energy surface (PES) instead of a pure quintet PES. This mechanism may apply for other α -keto dependent dioxygenases.

Chinese Chemical Letters 34 (2023) 107803



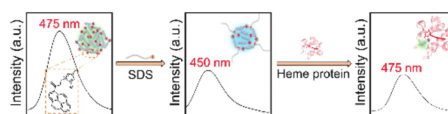
Surfactant-regulated acetylpyrene assemblies as fluorescent probes for identifying heme proteins in an aqueous solution

Binbin Yuan, Shuangshuang Long, Huamin Wang, Qing Luo, Ke Zeng, Shuqin Gao, Yingwu Lin

School of Chemistry and Chemical Engineering, University of South China, Hengyang 421001, China

A simple fluorescent ensemble sensor for identifying heme proteins was reported. Based on environmentally sensitive acetylpyrene fluorophores encapsulated by surfactant assemblies, the binding with heme proteins changed the microenvironment, which shifts the fluorophore fluorescence signals.

Chinese Chemical Letters 34 (2023) 107802



Spiropyran isomerization triggering ESIPT for visualization of pH fluctuations during oxidative stress in living cells

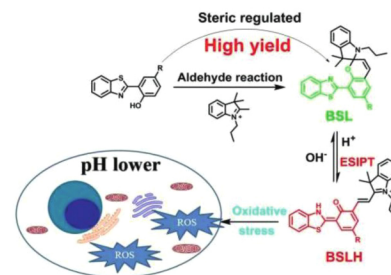
Jingdong Wang^a, Fangjun Huo^b, Yongbin Zhang^b, Caixia Yin^a

^aInstitute of Molecular Science, Key Laboratory of Chemical Biology and Molecular Engineering of Ministry of Education, Shanxi University, Taiyuan 030006, China

^bResearch Institute of Applied Chemistry, Shanxi University, Taiyuan 030006, China

An ESIPT-based NIR pH fluorescence probe BSL was synthesized to achieve ratio fluorescence changes under single-wavelength excitation and successfully detect pH fluctuations in a model of oxidative stress in living cells.

Chinese Chemical Letters 34 (2023) 107818



Iron-based metal–organic framework as a dual cooperative release system for enhanced vascularization and bone regeneration

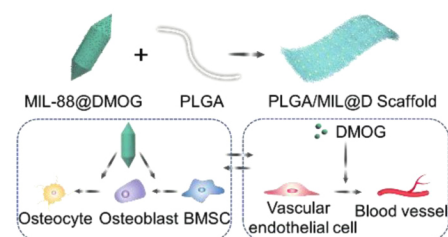
Chang Xu^a, Yue Kang^b, Shiqiang Guan^a, Xufeng Dong^a, Daqing Jiang^b, Min Qi^a

^aSchool of Materials Science and Engineering, Dalian University of Technology, Dalian 116024, China

^bDepartment of Breast Surgery, Cancer Hospital of China Medical University, Shenyang 110042, China

A novel iron-based MOF-embedded nanofibrous scaffold was fabricated for a dual cooperative release of therapeutic iron ions and DMOG for the first time, to enrich vascularization and powerful bone regeneration *in vitro* and *in vivo*.

Chinese Chemical Letters 34 (2023) 107825



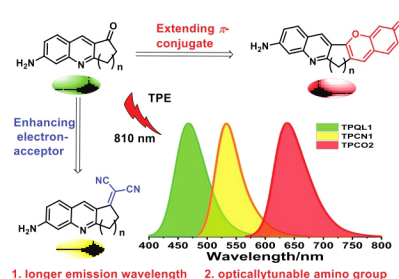
Evolving a novel red-emitting two-photon dye with optically tunable amino group for monitoring the degree of hypoxia during liver fibrosis

Xingxing Zhang, Feiyu Yang, Tianbing Ren, Yingxin Zheng, Xiao-Bing Zhang, Lin Yuan

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

In this work, by introduced strong electron acceptor and large conjugated group to the TPQL dye, we designed and synthesized two long-emission TP fluorophores (TPCN1 and TPCO2) with an optically tunable amino group. By using probe TPCO-NO₂, we not only successfully distinguished the expression of NTR in cells under different hypoxic conditions, but also sensitively imaged the NTR expression levels in liver fibrosis, further realizing diagnosis of the degree of hypoxia during liver fibrosis.

Chinese Chemical Letters 34 (2023) 107835



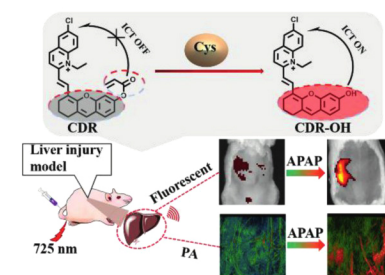
Cysteine-activated fluorescence/photoacoustic integrated probe for non-invasive diagnosis of drug-induced liver injury

Rui Chen, Wenxiu Li, Rong Li, Sixin Ai, Huayong Zhu, Weiying Lin

Guangxi Key Laboratory of Electrochemical Energy Materials, Institute of Optical Materials and Chemical Biology, School of Chemistry and Chemical Engineering, Guangxi University, Nanning 530004, China

We developed a novel probe CDR for diagnosing drug-induced early liver injury *in vivo* by NIRF and PA dual-mode imaging.

Chinese Chemical Letters 34 (2023) 107845



Sequentially responsive size reduction and drug release of core-satellite nanoparticles to enhance tumor penetration and effective tumor suppression

Jiayi Sun^a, Jingyang Li^a, Xi Li^b, Lu Yang^a, Yitong Liu^c, Huile Gao^d, Li Xiang^a

^aState Key Laboratory of Southwestern Chinese Medicine Resources, Innovative Institute of Chinese Medicine and Pharmacy, Chengdu University of Traditional Chinese Medicine, Chengdu 611137, China

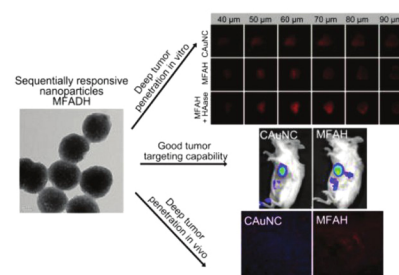
^bPublic Health Clinical Center of Chengdu, Chengdu 610061, China

^cThe Third Affiliated Hospital of Chengdu University of TCM/Chengdu Pidu District Hospital of Traditional Chinese Medicine, Chengdu 611730, China

^dWest China School of Pharmacy, Sichuan University, Chengdu 610041, China

A core-satellite structure nano-system MSN-Fe-CAuNC-DOX@HA (MFADH) could respond to various stimuli in tumor microenvironment to achieve size reduction, so as to endow the nano-system better tumor retention and penetration to improve the effectiveness of antitumor therapy.

Chinese Chemical Letters 34 (2023) 107891



A mild phenoxysilyl linker for self-immolative release of antibody-drug conjugates

Ding Wei^{a,b,c}, Yurong Mao^{b,c}, Huihui Wang^{b,c}, Siqi Qu^{b,c}, Jiakang Chen^b, Jiusheng Li^a, Biao Jiang^b, Hongli Chen^b

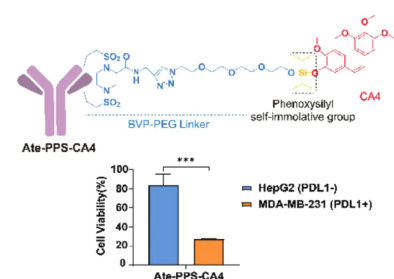
^aShanghai Advanced Research Institute, Chinese Academy of Sciences, Shanghai 201210, China

^bShanghai Institute for Advanced Immunochemical Studies, ShanghaiTech University, Shanghai 201210, China

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

A phenoxysilyl linker has been developed to construct antibody-drug conjugates, which displayed the ability to self-immolative release and targeted delivery.

Chinese Chemical Letters 34 (2023) 108091



Indocyanine green-/TLR7 agonist-constructed thermosensitive liposome for low-temperature PTT induced synergistic immunotherapy of colorectal cancer

Xiang Sun^a, Yanmin Wang^a, Tao Du^a, Qiang Zhang^a, Shuo Li^b, Qinda Chen^c, Miao Wang^a, Xiumin Wang^c, Lei Ren^{a,d}, Xueqin Zhao^b

^aDepartment of Biomaterials, Higher Educational Key Laboratory for Biomedical Engineering of Fujian Province, Research Center of Biomedical Engineering of Xiamen, College of Materials, Xiamen University, Xiamen 361005, China

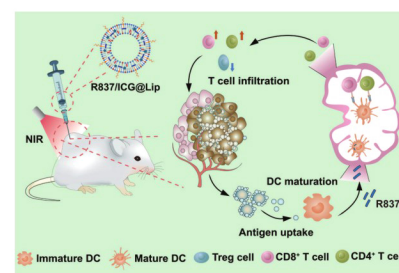
^bZhejiang Provincial Key Laboratory of Silkworm Bioreactor and Biomedicine, College of Life Science and Medicine, Zhejiang Sci-Tech University, Hangzhou 310018, China

^cSchool of Pharmaceutical Sciences, Xiamen University, Xiamen 361102, China

^dState Key Laboratory of Physical Chemistry of Solid Surfaces, College of Chemistry and Chemical Engineering, Xiamen University, Xiamen 361005, China

R837/ICG@Lip mediated low-temperature photothermal therapy can kill local tumor tissues and subsequently released tumor-associated antigens. These tumor-associated antigens, along with R837 as an adjuvant, facilitate dendrite cell maturation. R837/ICG@Lip is combined with the indoleamine 2,3-dioxygenase inhibitor NLG919 to trigger a powerful cell-mediated immune response, thereby it is helping to eliminate residual tumor cells.

Chinese Chemical Letters 34 (2023) 108201



Surface modification of Li₃InCl₆ provides superior electrochemical performance for LiMn₂O₄ cathode materials

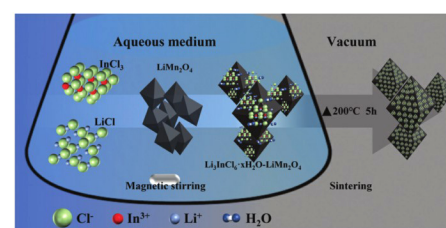
Yixun Gu^a, Kuan Yang^a, Hongbin Yao^a, Weijian Li^b, Haiqing Zhan^b, Xianquan Ming^b, Guanhan Huang^b, Guiliang Li^b, Feng Zhan^a

^aSchool of Resources Environment and Materials, Guangxi University, Nanning 530004, China

^bSouth Manganese Group Limited, Nanning 530000, China

The structure of LiMn₂O₄ is stabilized by the synthesis of uniform Li₃InCl₆ on the surface of LiMn₂O₄ by InCl₃ and LiCl in the aqueous phase, which enables the LiMn₂O₄ to have high cycling performance.

Chinese Chemical Letters 34 (2023) 108047



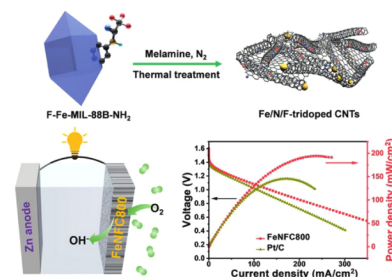
Transformation of postsynthesized F-MOF to Fe/N/F-tridoped carbon nanotubes as oxygen reduction catalysts for high power density Zn-air batteries

Ao Yu, Wangtao Long, Longtao Zhu, Yinan Zhao, Ping Peng, Fang-Fang Li

State Key Laboratory of Materials Processing and Die & Mould Technology, School of Materials Science and Engineering, Huazhong University of Science and Technology, Wuhan 430074, China

Fe/N/F-tridoped carbon nanotubes were grown from the postsynthesized F-Fe-MIL-88B-NH₂ microcrystals through a self-catalyzed process. The synergistic effect of Fe, N, F doping and the carbon nanotube structure enhanced the ORR catalytic performance. A Zn-air battery assembled with FeNFC800 shows a high peak power density of 196 mW/cm², outperforming the benchmark 20% Pt/C.

Chinese Chemical Letters 34 (2023) 107860



Temperature-controlled fabrication of hydrophilic manganese oxide microspheres as high-performance electrode materials for supercapacitors

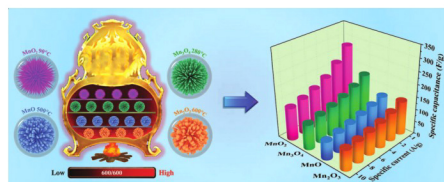
Yuchen Wang^a, Yaoyu Liu^a, Ahsan Ejaz^b, Kai Yan^a

^aGuangdong Provincial Key Laboratory of Environmental Pollution Control and Remediation Technology, School of Environmental Science and Engineering, Sun Yat-sen University, Guangzhou 510275, China

^bDepartment of Civil Engineering, Mirpur University of Science and Technology, AJK, Mirpur 10250, Pakistan

A temperature-controlled fabrication method is developed to achieve MnOx microspheres with various crystal structure as high-performance electrode materials for supercapacitors.

Chinese Chemical Letters 34 (2023) 107538



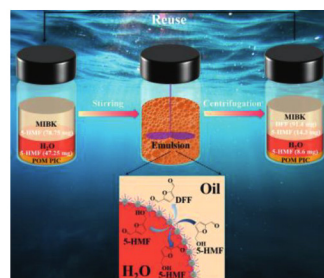
PIC catalysis based on polyoxometalates promoting 5-HMF oxidation in H₂O/MIBK biphasic

Qiwen Wang, Wenwen Bu, Zonghang Li, Yu Qi, Xiaohong Wang

Key Lab of Polyoxometalate Science of Ministry of Education, Faculty of Chemistry, Northeast Normal University, Changchun 130024, China

New polyoxometalate Pickering interfacial catalyst (POM PIC) was fabricated to stabilize the H₂O/MIBK biphasic to form emulsion hence to promote the oxidation of 5-HMF to DFF under atmospheric O₂. The PIC catalyst was easily separated through centrifugation, while DFF was isolated from MIBK.

Chinese Chemical Letters 34 (2023) 107548



Revealing milling durations and sintering temperatures on conductivity and battery performances of Li_{2.25}Zr_{0.75}Fe_{0.25}Cl₆ electrolyte

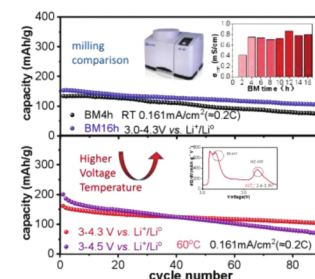
Shuai Chen^{a,b}, Chuang Yu^a, Chaochao Wei^a, Linfeng Peng^a, Shijie Cheng^a, Jia Xie^a

^aState Key Laboratory of Advanced Electromagnetic Engineering and Technology, School of Electrical and Electronic Engineering, Huazhong University of Science and Technology, Wuhan 430074, China

^bSchool of Materials, Huazhong University of Science and Technology, Wuhan 430074, China

Revealing the milling parameters on the conductivity and electrochemical performances of Li_{2.25}Zr_{0.75}Fe_{0.25}Cl₆ electrolyte. Researching their application in all-solid-state batteries under high temperature and high voltage conditions.

Chinese Chemical Letters 34 (2023) 107544



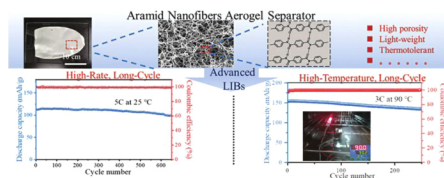
Multifunctional robust aerogel separator towards high-temperature, large-rate, long-cycle lithium-ion batteries

Mei-Chen Liu, Hui-Jun Chen, Gang Wu, Xiu-Li Wang, Yu-Zhong Wang

The Collaborative Innovation Center for Eco-Friendly and Fire-Safety Polymeric Materials (MoE), National Engineering Laboratory of Eco-Friendly Polymeric Materials (Sichuan), State Key Laboratory of Polymer Materials Engineering, College of Chemistry, Sichuan University, Chengdu 610064, China

A multifunctional robust aramid nanofibers aerogel separator is designed, and it exhibits excellent long-term cycling performance at high rates and high temperature.

Chinese Chemical Letters 34 (2023) 107546



Switching the coordination geometry to enhance erbium(III) single-molecule magnets

Qian-Cheng Luo^a, Ning Ge^a, Yuan-Qi Zhai^a, Tengbo Wang^b, Lin Sun^c, Qi Sun^d, Fanni Li^e, Zhendong Fu^f, Yan-Zhen Zheng^a

^aFrontier Institute of Science and Technology, School of Chemistry and School of Physics, Xi'an Jiaotong University, Xi'an 710054, China

^bThe School of Automation Science and Technology, Xi'an Jiaotong University, Xi'an 712000, China

^cInstitute of Molecular and Crystal Engineering, College of Chemistry and Chemical Engineering, Henan University, Kaifeng 475004, China

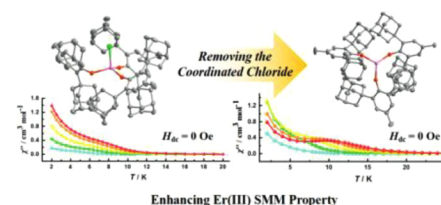
^dDepartment of General Surgery, The First Affiliated Hospital of Xi'an Jiaotong University, Xi'an 710061, China

^eDepartment of Talent Highland, The First Affiliated Hospital of Xi'an Jiaotong University, Xi'an 710061, China

^fNeutron Platform, Songshan Lake Materials Laboratory, Dongguan 523808, China

Removing the coordinated chloride in the erbium(III) complex: $[\text{ErCl}(\text{OAr}^{\text{Ad}})_3]^-$ results in a neutral molecule: $\text{Er}(\text{OAr}^{\text{Ad}})_3$ and such alternation significantly enhances the single-molecule magnet (SMM) behavior for the latter. Together with theoretical calculations, this study shows that strong equatorial ligand field and high local symmetry are critical to achieve high-performance erbium(III) based SMMs.

Chinese Chemical Letters 34 (2023) 107547



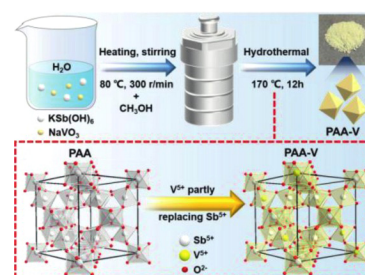
V-substituted pyrochlore-type polyantimonic acid for highly enhanced lithium-ion storage

Haoyu Fang, Kai Yong, Boya Wang, Kaipeng Wu, Yun Zhang, Hao Wu

College of Materials Science and Engineering, Sichuan University, Chengdu 610064, China

An element substitution strategy of V^{5+} over Sb^{5+} is developed for improving the electrochemical energy storage performance of polyantimonic acid (PAA), which demonstrates V^{5+} -substitution endows the PAA with smaller crystal size and boosted electronic conductivity, thus realizing the PAA from totally irreversible to highly reversible for lithium-ion storage.

Chinese Chemical Letters 34 (2023) 107548



Pressure-stabilized hexagonal perovskite-related isolated tetrahedral anion silicate $\text{La}_6\text{Sr}_3\text{Si}_6\text{O}_{24}$

Jie Feng^a, Lei Zhao^a, Wenda Zhang^a, Cheng Li^b, Congling Yin^a, Xiaojun Kuang^{a,c}

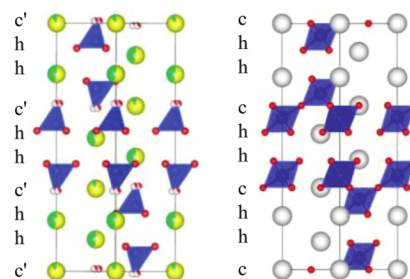
^aGuangxi Key Laboratory of Optic and Electronic Materials and Devices, MOE Key Laboratory of New Processing Technology for Nonferrous Metals and Materials, College of Materials Science and Engineering, Guilin University of Technology, Guilin 541004, China

^bNeutron Scattering Division, Oka Ridge National Laboratory, Oak Ridge 37831, United States

^cGuangxi Key Laboratory of Electrochemical and Magnetochemical Functional Materials, College of Chemistry and Bioengineering, Guilin University of Technology, Guilin 541004, China

High pressure stabilizes $\text{La}_6\text{Sr}_3\text{Si}_6\text{O}_{24}$ silicate as a hexagonal perovskite-related phase with isolated tetrahedra SiO_4 anions showing ionic conduction.

Chinese Chemical Letters 34 (2023) 107551



Bifunctional separator with high thermal stability and lithium dendrite inhibition toward high safety lithium-ion batteries

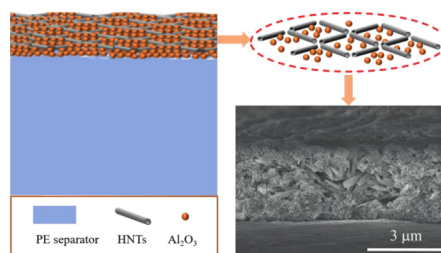
Miaomiao Su^a, Yifu Chen^a, Suqing Wang^a, Haihui Wang^b

^aSchool of Chemistry & Chemical Engineering, South China University of Technology, Guangzhou 510640, China

^bSchool of Chemical Engineering, Tsinghua University, Beijing 100084, China

A bifunctional separator with high thermal stability and lithium dendrite inhibition was successfully fabricated. The dual-pore structure provided abundant channels to regulate homogenous Li^+ migration and deposition, while nano-sized alumina particles filled empty space of the matrix to form a tightly stacked coating which improved the thermal stability of AH-PE separator.

Chinese Chemical Letters 34 (2023) 107553



Large negative thermal expansion in $\text{GdFe}(\text{CN})_6$ driven by unusual low-frequency modes

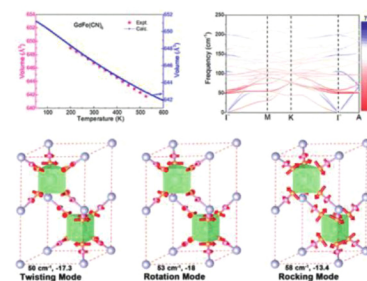
Qilong Gao^a, Yixin Jiao^a, Andrea Sanson^b, Erjun Liang^a, Qiang Sun^a

^aKey Laboratory of Materials Physics of Ministry of Education, and School of Physics and Microelectronics, Zhengzhou University, Zhengzhou 450052, China

^bDepartment of Physics and Astronomy, University of Padova, Padova I-35131, Italy

A new large NTE compound of $\text{GdFe}(\text{CN})_6$ was prepared, whose NTE was motivated by the low-frequency phonons especially the twisting, rotation, and rocking modes.

Chinese Chemical Letters 34 (2023) 107564



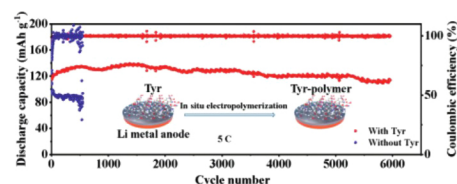
In-situ electro-polymerization of L-tyrosine enables ultrafast, long cycle life for lithium metal battery

Zihao Chu, Sidong Zhuang, Jiahui Lu, Jiabao Li, Chengyin Wang, Tianyi Wang

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

In situ electropolymerization of tyrosine to protect the lithium metal anode was first proposed and applied to the $\text{Li}|\text{LLTO}$ fast-charging battery system.

Chinese Chemical Letters 34 (2023) 107563



Frustrated Lewis pairs in situ formation in B-based porous aromatic frameworks for efficient o-phenylenediamine cyclization

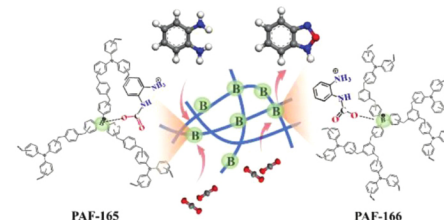
Anqi Dai, Shulin Li, Tienan Wang, Yuting Yang, Yuyang Tian, Xiaofei Jing, Guangshan Zhu

Key Laboratory of Polyoxometalate and Reticular Material Chemistry of Ministry of Education, Faculty of Chemistry, Northeast Normal University, Changchun 130024, China

Introduction of sterically hindered B building units in porous aromatic frameworks (PAFs) could act as Lewis acid sites and take part in frustrated Lewis pairs in situ formation for catalyzing o-phenylenediamine cyclization with CO_2 as carbon source.

Chinese Chemical Letters 34 (2023) 107559

FLPs in situ formation in B-based PAFs



Electroreduction NO to NH_3 over single metal atom anchored on pyrrole type defective graphene: A DFT study

Jiazhi Wang^{a,b}, Kai Li^a, Qi Hao^{a,c}, Dongxue Liu^c, Xinbo Zhang^{a,b}

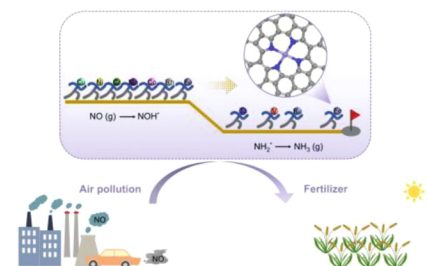
^aState Key Laboratory of Rare Earth Resource Utilization, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, Changchun 130022, China

^bUniversity of Science and Technology of China, Hefei 230026, China

^cKey Laboratory of Automobile Materials, Ministry of Education, Jilin University, Changchun 130022, China

NO is one of the main components of environmental pollution, which can be reduced to ammonia via pyrrole-type N-anchored single-atom catalysts and further applied to nitrogen fertilizer and other fields.

Chinese Chemical Letters 34 (2023) 107567



Room-temperature synthesis of layered open framework cathode for sodium-ion batteries

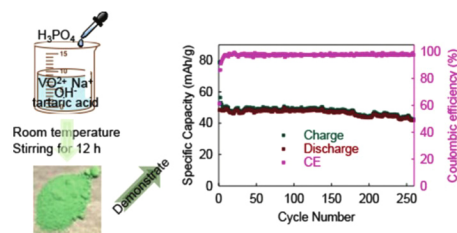
Ruding Zhang^{a,b}, Huixin Chen^{a,b}, Hongjun Yue^{a,b}

^aCAS Key Laboratory of Design and Assembly of Functional Nanostructures, and Fujian Provincial Key Laboratory of Nanomaterials, Fujian Institute of Research on the Structure of Matter, Chinese Academy of Sciences, Fuzhou 350002, China

^bXiamen Key Laboratory of Rare Earth Photoelectric Functional Materials, Xiamen Institute of Rare Earth Materials, Haixi Institutes, Chinese Academy of Sciences, Xiamen 361021, China

A layered cathode with open framework structure was successfully prepared via mild solution method at room temperature under ambient condition.

Chinese Chemical Letters 34 (2023) 107580



A DFT study of two-dimensional P₂Si monolayer modified by single transition metal (Sc-Cu) atoms for efficient electrocatalytic CO₂ reduction

Chaozheng He^a, Houyong Yang^a, Xi Fu^{b,c}, Xiaoli Cheng^c, Jiyuan Guo^d, Ling Fu^e

^aInstitute of Environmental 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 Science, Hunan University of Science and Engineering, Yongzhou 425199, China

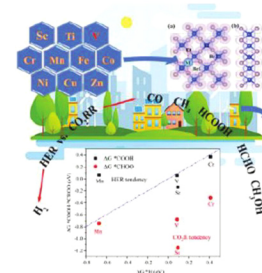
^cDepartment of Physics, Jishou University, Jishou 416000, China

^dSchool of Science, Jiangsu University of Science and Technology, Zhenjiang 212003, China

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

Within the range of transition metal atom-loaded P₂Si electrocatalysts, V@P₂Si showed the best CRR catalytic performance compared to HER, with HCOOH being the most likely product among the possible products CO, CH₄, HCOOH, HCHO, CH₃OH.

Chinese Chemical Letters 34 (2023) 107579



A promising controllable CO₂ capture and separation materials for CO₂/CH₄/H₂ under electric field

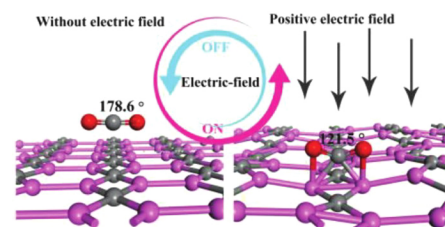
Chaozheng He^a, Houyong Yang^a, Ling Fu^b

^aShaanxi Key Laboratory of Optoelectronic Functional Materials and Devices, Institute of Environment and Energy Catalysis, 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

With a positive electric field of 0.0033 a.u. applied, Al₂C nanosheet material possesses ultra-high CO₂ adsorption capacities and remarkable separation performances over CO₂/CH₄/H₂O. And a gas separation strategy was designed based on the response of adsorption energy of different gases towards electric field intensity, with the intrinsic mechanism elaborated through the changes of molecular structure, electronic structure and chemical bonding.

Chinese Chemical Letters 34 (2023) 107581



Heterogeneous photocatalytic borylation of aryl iodides mediated by isorecticular 2D covalent organic frameworks

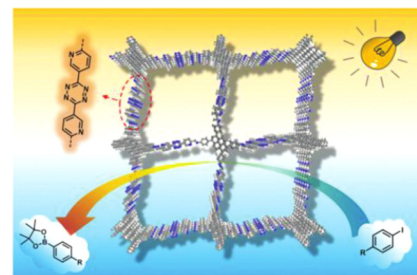
Pengna Shang^a, Xiaoli Yan^a, Yang Li^a, Junji Liu^a, Guang Zhang^a, Long Chen^{a,b}

^aDepartment of Chemistry and Tianjin Key Laboratory of Molecular Optoelectronic Science, Tianjin University, Tianjin 300072, China

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

Four isorecticular nitrogen-rich 2D covalent organic frameworks (COFs) as photocatalysts are developed to mediate borylation of aryl halides.

Chinese Chemical Letters 34 (2023) 107584



Charge state modulation on boron site by carbon and nitrogen localized bonding microenvironment for two-electron electrocatalytic H₂O₂ production

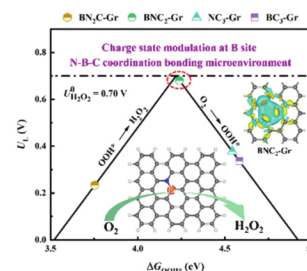
Tingting Zhang^a, Yin Wang^a, Xiangyang Li^a, Quan Zhuang^a, Zixuan Zhang^a, Hong Zhou^a, Qin Ding^a, Yingqi Wang^b, Yuxin Dang^a, Limei Duan^a, Jinghai Liu^a

^aInner Mongolia Key Laboratory of Carbon Nanomaterials, College of Chemistry and Materials Science, Nano Innovation Institute, Inner Mongolia Minzu University, Tongliao 028000, China

^bTongliao Center for Disease Control and Prevention, Tongliao 028000, China

The chemical bonding of N-B-C and C-B-C in configurations of BN₃, BN₂C, BNC₂ and BC₃ coordination bonding microenvironment affects the charge state at B site and corresponding adsorption energy of OOH* (ΔG_{OOH^*}) in rate-determining step and its electrocatalytic 2eORR activity for H₂O₂ production.

Chinese Chemical Letters 34 (2023) 107596



CoS₂/N,S co-doped mesoporous carbon with 3D micro-nano crosslinked structure as efficient bifunctional oxygen electrocatalysts for zinc-air batteries

Wei Wang^{a,b,c}, Liqin Li^a, Jie Ouyang^{a,d}, Jialin Gong^a, Jie Tian^a, Liang Chen^a, Junlin Huang^a, Binhong He^a, Zhaohui Hou^a

^aKey Laboratory of Hunan Province for Advanced Carbon-based Functional Materials, School of Chemistry and Chemical Engineering, Hunan Institute of Science and Technology, Yueyang 414006, China

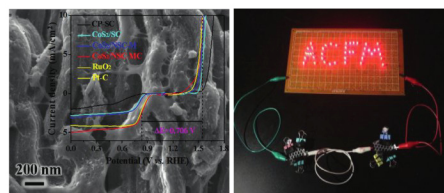
^bGuangxi Key Laboratory of Low Energy Material, Guangxi Normal University, Guilin 541004, China

^cHubei Key Laboratory of Pollutant Analysis & Reuse Technology, Hubei Normal University, Huangshi 435002, China

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

3D micro-nano crosslinked structure composed of CoS₂ nanocrystals encapsulated in N,S co-doped mesoporous carbon delivers superior half-wave potential and overpotential for ORR and OER process, respectively, as well as excellent performances in Zn-air batteries.

Chinese Chemical Letters 34 (2023) 107597



Ultralong-life lithium metal batteries enabled by decorating robust hybrid interphases on 3D layered frameworks

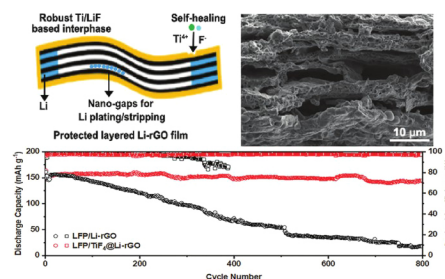
Qiongjie Ke^a, Qingshuai Xu^a, Xuejun Lai^a, Xianfeng Yang^a, Huichun Gao^b, Zaisheng Wang^a, Yongcai Qiu^a

^aSchool of Environment and Energy, State Key Laboratory of Luminescent Materials and Device, Guangdong Provincial Key Laboratory of Atmospheric Environment and Pollution Control, South China University of Technology, Guangzhou 510000, China

^bEVE Energy Co., Ltd., Huizhou 516000, China

A TiF₄@Li-rGO anode was fabricated by pre-formation of artificial robust hybrid interphase on a 3D layered graphene/lithium metal framework, in which is constructed by LiF associates with Li₂TiF₆. The as-formed 3D-structured electrode can provide fast Li ions transfer channel due to its ordered nano-gaps structure and suppress lithium dendrites.

Chinese Chemical Letters 34 (2023) 107602



Facile synthesis of defect-rich Fe-N-C hybrid from fullerene/ferrotetraphenylporphyrin as efficient oxygen reduction electrocatalyst for Zn-air battery

Hai Wang^a, Liyun Cao^a, Yongqiang Feng^a, Junsheng Chen^a, Weihang Feng^a, Tianmi Luo^a, Yuzhu Hu^a, Chengke Yuan^a, Yajuan Zhao^a, Yong Zhao^c, Koji Kajiyoshi^b, Yijun Liu^c, Zhenjiang Li^d, Jianfeng Huang^a

^aSchool of Material Science and Engineering, International S&T Cooperation Foundation of Shaanxi Province, Shaanxi University of Science and Technology, Xi'an 710021, China

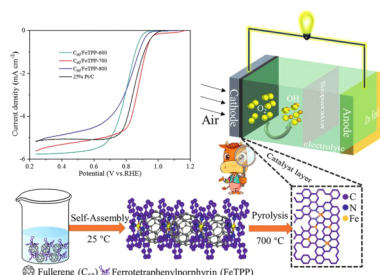
^bKochi University, Research Laboratory of Hydrothermal Chemistry, Kochi 780-8520, Japan

^cGuangdong Mona Lisa Group Co., Ltd., Foshan 528211, China

^dCollege of Materials Science and Engineering, Qingdao University of Science and Technology, Qingdao 266042, China

A non-noble metal-based ORR electrocatalyst (C₆₀/FeTPP-700) with synergistic effect between Fe_N sites, Fe₃C/Fe nanoparticles and the structure defects was synthesized which could serve as efficient oxygen reduction reaction for Zn-air battery.

Chinese Chemical Letters 34 (2023) 107601



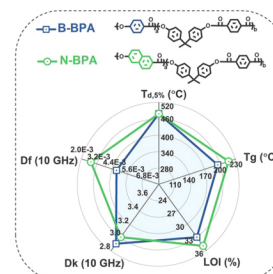
Design and synthesis of liquid crystal copolyesters with high-frequency low dielectric loss and inherent flame retardancy

Shi-Yu Zhang, Teng Fu, Yue Gong, De-Ming Guo, Xiu-Li Wang, Yu-Zhong Wang

State Key Laboratory of Polymer Materials Engineering, The Collaborative Innovation Center for Eco-Friendly and Fire-Safety Polymeric Materials, National Engineering Laboratory of Eco-Friendly Polymeric Materials (Sichuan), College of Chemistry, Sichuan University, Chengdu 610064, China

This study proposes a new strategy for designing liquid crystal polymer materials with low dielectric constant and low dielectric loss at high frequency.

Chinese Chemical Letters 34 (2023) 107615



Study on carbon matrix composite bipolar plates with balance of conductivity and flexural strength

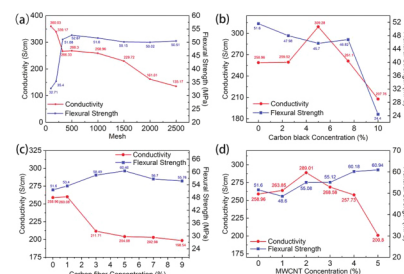
Junsheng Zheng^{a,b}, Yuhang Peng^{a,b}, Runlin Fan^{a,b}, Jing Chen^{a,b}, Zize Zhan^{a,b}, Dongmei Yao^{a,b}, Pingwen Ming^{a,b}

^aNew Energy Automotive Engineering Center, Tongji University, Shanghai 200029, China

^bSchool of Automotive Studies, Tongji University, Shanghai 200092, China

The main problem of graphite bipolar plates is difficult to balance electrical conductivity and flexural strength. In this study, the effects of auxiliary fillers and varied graphite particle sizes are investigated to achieve the best overall performance. And we also studied the optimal concentration of auxiliary filler by using the graphite particle size under the condition of the best comprehensive performance.

Chinese Chemical Letters 34 (2023) 107616



Reducing obesity and inflammation in mice with organically-derivatized polyoxovanadate clusters

Kun Chen^{a,c}, Guoyong Dai^{b,d}, Shengqiu Liu^{a,c}, Yongge Wei^{b,d}

^aSouth China Advanced Institute for Soft Matter Science and Technology, School of Emergent Soft Matter, South China University of Technology, Guangzhou 510641, China

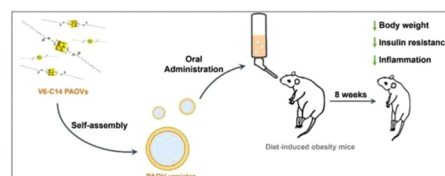
^bKey Lab of Organic Optoelectronics & Molecular Engineering of Ministry of Education, Department of Chemistry, Tsinghua University, Beijing 100084, China

^cGuangdong Provincial Key Laboratory of Functional and Intelligent Hybrid Materials and Devices, South China University of Technology, Guangzhou 510641, China

^dState Key Laboratory of Natural and Biomimetic Drugs, Peking University, Beijing 100191, China

Long-chain aliphatic acid-modified polyoxovanadates confer protection against diet-induced obesity in mice. Oral administration of the organically-derivatized polyoxovanadates for 8 weeks significantly reduces the body weight of mice fed a high-fat diet and especially reduces adipose tissue accumulation and inflammation, both of which are known to contribute to obesity and its complicating disease.

Chinese Chemical Letters 34 (2023) 107638



Lanthanide coordinated multicolor fluorescent polymeric hydrogels for bio-inspired shape/color switchable actuation through local diffusion of Tb³⁺/Eu³⁺ ions

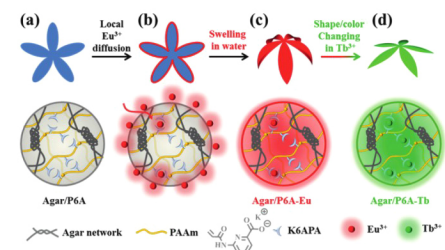
Ruijia Wang^{a,b}, Wei Lu^b, Yi Zhang^b, Wanning Li^b, Wenqin Wang^a, Tao Chen^b

^aFaculty of Materials Science and Chemical Engineering, Ningbo University, Ningbo 315211, China

^bKey Laboratory of Marine Materials and Related Technologies, Zhejiang Key Laboratory of Marine Materials and Protective Technologies, Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences, Ningbo 315201, China

A general approach to realize spatial control of fluorescence color changing and shape deforming behaviors of the lanthanide coordinated polymeric hydrogel sheet was reported through the local diffusion of Tb³⁺/Eu³⁺ ions. On this basis, bio-inspired synergistic color/shape changeable actuators were then demonstrated.

Chinese Chemical Letters 34 (2023) 108086



A fluorogenic probe for SNAP-tag protein based on ESPT ratiometric signals

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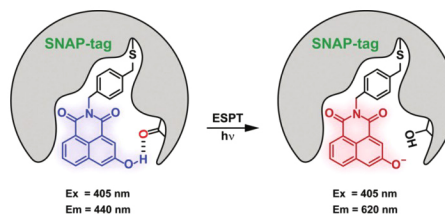
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The hydroxyl group on the 3-hydroxy-1,8-naphthalimide fluorophore formed a hydrogen bond with the functional group near the SNAP-tag protein cavity, and the excited state proton transfer occurred after illumination, so as to obtain the ratio fluorescence signal from blue emission to red emission, realizing the wash-free fluorescence imaging of the target proteins.

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Machine learning accelerated DFT research on platinum-modified amorphous alloy surface catalysts

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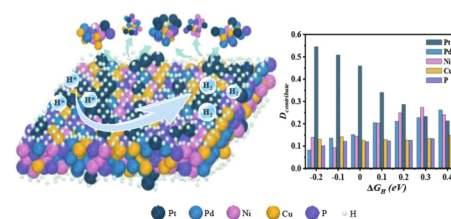
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A machine learning accelerated DFT method based on a distance contribution descriptor was proposed to reveal the physical origin of the excellent HER catalytic activity of Pt@PdNiCuP. The atomic ratio for the best catalytic performance is Pt: Pd: Ni: Cu: P = 0.33: 0.17: 0.155: 0.16: 0.185.

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