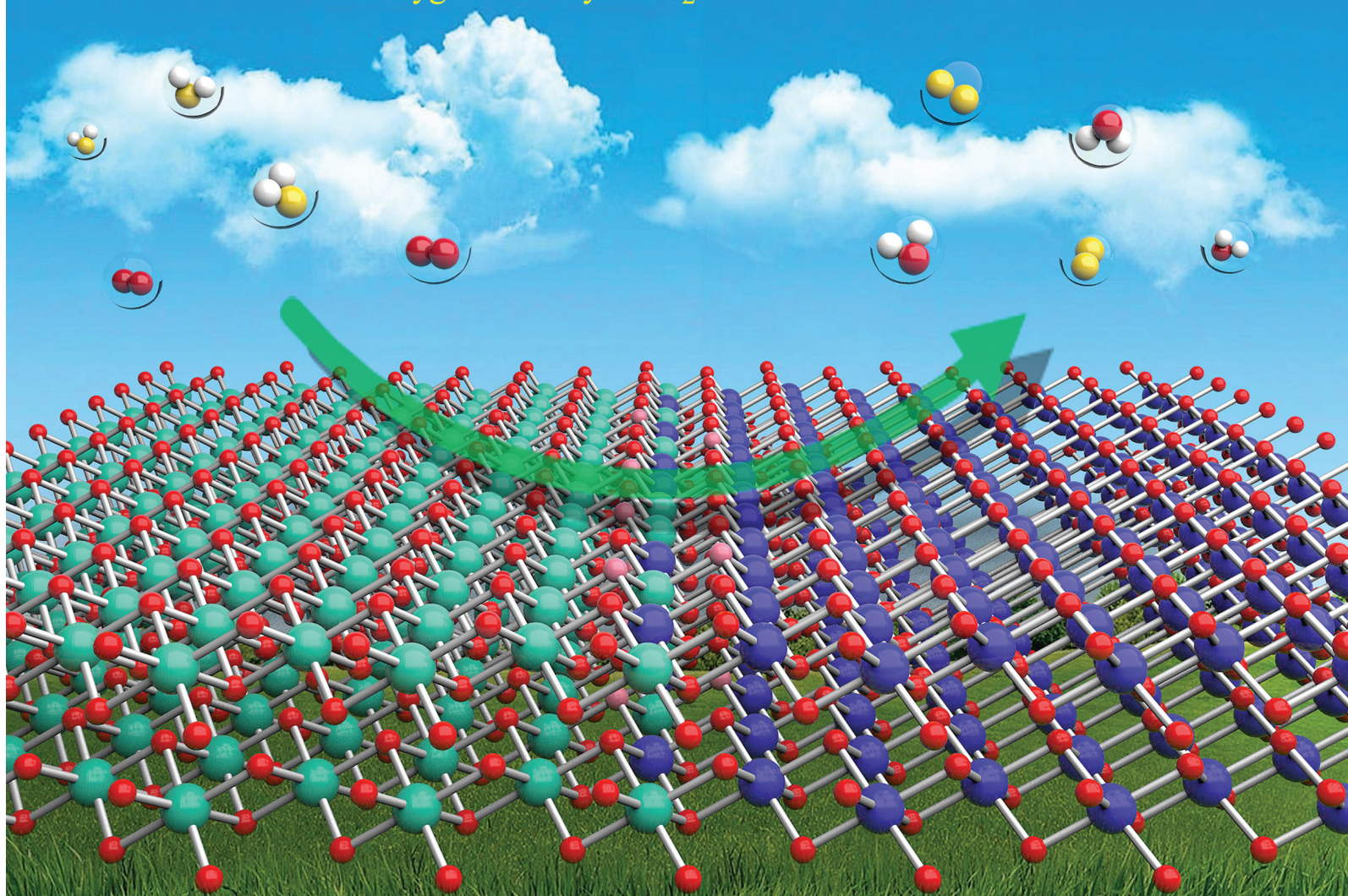


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Porous α -Fe₂O₃/SnO₂ nanoflower with abundant
oxygen vacancy for H₂S selective oxidation





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

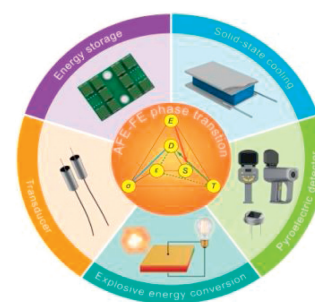
Perspective

Perspective on antiferroelectrics for energy storage and conversion applications

Fangping Zhuo^{a,b}, Huimin Qiao^c, Jiaming Zhu^d, Shuize Wang^a, Yang Bai^a, Xinping Mao^a, Hong-Hui Wu^a^a Beijing Advanced Innovation Center for Materials Genome Engineering, University of Science and Technology Beijing, Beijing 100083, China^b Department of Materials and Earth Science, Technical University of Darmstadt, Darmstadt 64287, Germany^c School of Advanced Materials and Engineering, Sungkyunkwan University (SKKU), Suwon 16419, Republic of Korea^d Department of Mechanical Engineering, The Hong Kong Polytechnic University, Hong Kong, China

Antiferroelectric materials have attracted growing attention for their potential applications in high energy storage capacitors, digital displacement transducers, pyroelectric detectors and sensors, solid-state cooling devices, and explosive energy conversion, and so on, because of their novel field-induced phase transitions between antiferroelectric and ferroelectric.

Chinese Chemical Letters 32 (2021) 2097

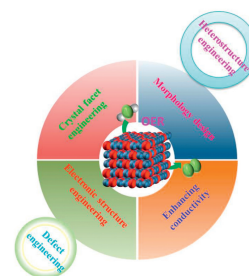


Reviews

Advances in engineering RuO₂ electrocatalysts towards oxygen evolution reactionCheng Wang^a, Liu Jun Jin^a, Hongyuan Shang^a, Hui Xu^a, Yukihide Shiraishi^b, Yukou Du^a^a College of Chemistry, Chemical Engineering and Materials Science, Soochow University, Suzhou 215123, China^b Department of Applied Chemistry, Sanyo-Onoda City University, Sanyo-Onoda, Yamaguchi 756-0884, Japan

RuO₂ electrocatalysts have garnered enormous interest for OER owing to their optimal oxygen binding energy close to the top of volcano plot and inherently robust anticorrosion ability in electrolytes with a wide range of pH values. Collectively, an overview and discussion of the fabrication and activity promotion of RuO₂-based electrocatalysts, along with the application toward OER, is also provided.

Chinese Chemical Letters 32 (2021) 2108



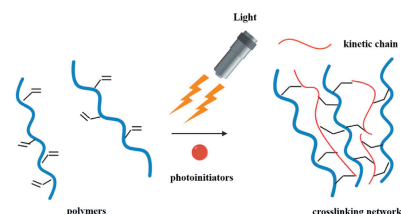
Current research progress of photopolymerized hydrogels in tissue engineering

Ao Sun, Xinye He, Xiao Ji, Danrong Hu, Meng Pan, Linghong Zhang, Zhiyong Qian

State Key Laboratory of Biotherapy/Collaborative Innovation Center for Biotherapy, West China Hospital, West China Medical School, Sichuan University, Chengdu 610041, China

The review article summarizes the applications of photopolymerized hydrogels in tissue engineering. In this article, we discussed the types and advantages of different photoinitiators, as well as the advantages of manufacturing technologies for photopolymerized hydrogels and the materials used in tissue engineering.

Chinese Chemical Letters 32 (2021) 2117



Hydrogen peroxide-generating nanomedicine for enhanced chemodynamic therapy

Peng Yu^a, Xiaodong Li^c, Guohui Cheng^a, Xu Zhang^a, Dan Wu^b, Jin Chang^a, Sheng Wang^a

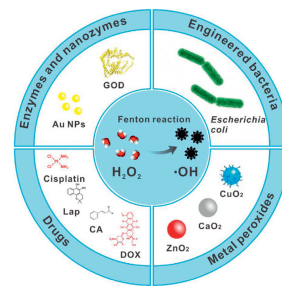
^a School of Life Sciences, Tianjin University, Tianjin 300072, China

^b College of Chemical and Biological Engineering, Zhejiang University of Technology, Hangzhou 310014, China

^c The Second Hospital, Tianjin Medical University, Tianjin 300211, China

Chemodynamic therapy (CDT) is an emerging tumor treatment approach that exploiting Fenton reaction to convert hydrogen peroxide (H_2O_2) into toxic hydroxyl radical ($\cdot OH$). As an important substrate of Fenton reaction, H_2O_2 plays critical role in $\cdot OH$ generation. In this review, we summarize recently developed H_2O_2 -generating nanomedicines that can promote the production of H_2O_2 in tumor for enhanced CDT.

Chinese Chemical Letters 32 (2021) 2127



Communications

In-situ and one-step preparation of protein film in capillary column for open tubular capillary electrochromatography enantioseparation

Ling Li^a, Xuqi Xue^a, Huige Zhang^a, Wenjuan Lv^a, Shengda Qi^a, Hongying Du^b, Anne Manyande^c, Hongli Chen^a

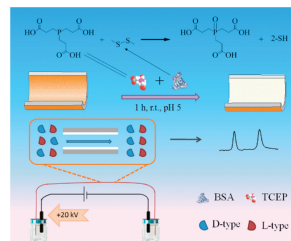
^a State Key Laboratory of Applied Organic Chemistry, College of Chemistry and Chemical Engineering, Lanzhou University, Lanzhou 730000, China

^b Key Laboratory of Environment Correlative Dietology, Ministry of Education, College of Food Science and Technology, Huazhong Agricultural University, Wuhan 430071, China

^c School of Human and Social Sciences, University of West London, Middlesex TW89GA, United Kingdom

The phase-transitioned BSA (PTB) film-coated capillary column was in-situ and one-step fabricated, and applied to realize the open tubular capillary electrochromatography (OT-CEC) enantioseparation for eight pairs of chiral analytes.

Chinese Chemical Letters 32 (2021) 2139



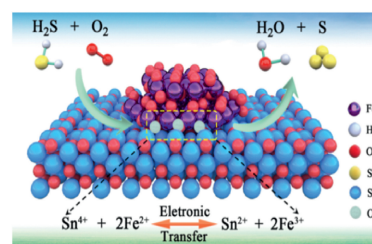
Porous $\alpha\text{-Fe}_2\text{O}_3/\text{SnO}_2$ nanoflower with enhanced sulfur selectivity and stability for H_2S selective oxidation

Xiaohai Zheng, Jiaming Cai, Wentao Zhao, Shijing Liang, Yong Zheng, Yanning Cao, Lijuan Shen, Yihong Xiao, Lilong Jiang

National Engineering Research Center of Chemical Fertilizer Catalyst, Fuzhou University, Fuzhou 350002, China

Porous $\alpha\text{-Fe}_2\text{O}_3/\text{SnO}_2$ composites with hierarchical nanoflower exhibits high activity for H_2S selective oxidation due to the high concentration of oxygen vacancies, active oxygen and redox properties resulted from the synergy between Fe_2O_3 and SnO_2 .

Chinese Chemical Letters 32 (2021) 2143



Amorphous carbon-linked TiO_2 /carbon nanotube film composite with enhanced photocatalytic performance: The effect of interface contact and hydrophilicity

Zekun Xin^a, Xiaodong Zhao^a, Huiming Ji^a, Tianyi Ma^d, Hui Li^c, Shuhui Zhong^b, Zhurui Shen^{a,c}

^a School of Materials Science and Engineering, Key Laboratory of Advanced Ceramics and Machining Technology, Ministry of Education, Tianjin University, Tianjin 300350, China

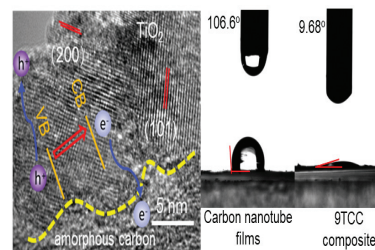
^b School of Mathematics, Tianjin University, Tianjin 300350, China

^c School of Materials Science and Engineering, Nankai University, Tianjin 300350, China

^d Centre for Translational Atomaterials, Faculty of Science, Engineering & Technology, Swinburne University of Technology, Hawthorn, Victoria 3122, Australia

The excellent photocatalytic performance of TCC composite is attributed to the enhanced electron transport capacity of TiO_2 with good interfacial contact with amorphous carbon and the superhydrophilicity of TCC composite, which improves the contact between dye and photocatalyst.

Chinese Chemical Letters 32 (2021) 2151



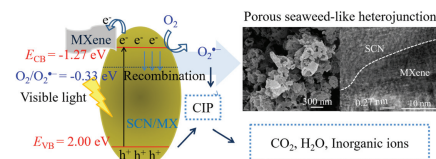
Sm-doped g-C₃N₄/Ti₃C₂ MXene heterojunction for visible-light photocatalytic degradation of ciprofloxacin

Mingchuan Yu, Huanjing Liang, Ruonan Zhan, Lei Xu, Junfeng Niu

Research Center for Eco-environmental Engineering, Dongguan University of Technology, Dongguan 523808, China

A hollow porous seaweed-like heterojunction of Sm-doped g-C₃N₄/Ti₃C₂ MXene (SCN/MX) was constructed via prepolymerization and solid mixture-calcination method, which achieved an efficiently photocatalytic degradation efficiency (> 99%) of ciprofloxacin under visible light irradiation.

Chinese Chemical Letters 32 (2021) 2155



A fast on-demand preparation of injectable self-healing nanocomposite hydrogels for efficient osteoinduction

Panpan Pan^{a,c}, Xiao Chen^b, Huaran Xing^d, Yonghui Deng^{a,f}, Jingdi Chen^d, Fahad A. Alharthi^e, Abdulaziz A. Alghamdi^e, Jiacan Su^b

^a Department of Chemistry, Department of Gastroenterology, Zhongshan Hospital of Fudan University, State Key Laboratory of Molecular Engineering of Polymers, Fudan University, Shanghai 200433, China

^b Department of Orthopaedics Trauma, Changhai Hospital, Second Military Medical University, Shanghai 200433, China

^c Institute of Biomedical and Pharmaceutical Technology, Fuzhou University, Fuzhou 350002, China

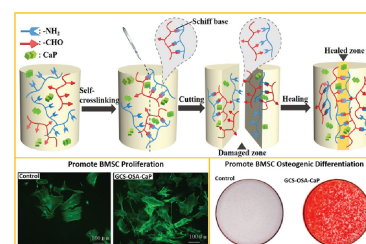
^d Marine College, Shandong University, Weihai 264209, China

^e Department of Chemistry, College of Science, King Saud University, P.O. Box 2455, Riyadh 11451, Saudi Arabia

^f State Key Lab of Transducer Technology, Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, Shanghai 200050, China

By using the strong chelating capability of natural chitosan toward Ca²⁺ ions, a biocompatible injectable and self-healing hybrid hydrogel was efficiently fabricated within 30 s via reversible Schiff base formed between -CH=O of the oxidized sodium alginate (OSA) and -NH₂ of glycol chitosan (GCS) mixed with calcium phosphate nanoparticles (CaP NPs). The hydrogel as the matrix for MSCs can significantly induce the proliferation, differentiation and osteoinduction *in vitro*, making this hydrogel an ideal candidate for applications in bone tissue regeneration and drug delivery.

Chinese Chemical Letters 32 (2021) 2159



An integrated quantitative proteomics strategy reveals the dual mechanisms of celastrol against acute inflammation

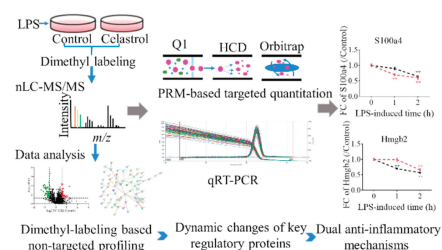
Guangshan Xie^a, Lin Zhu^{a,b}, Yuanyuan Song^a, Wei Huang^a, Di Hu^a, Zongwei Cai^a

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

^b Shenzhen Research Institute and Continuing Education, Hong Kong Baptist University, Shenzhen 518000, China

An integrated quantitative proteomics strategy to investigate the anti-inflammation effect of celastrol in a rat macrophage cell line against the LPS-induced acute response. The stable-isotopic based non-targeted quantitative profiling was performed to identify key regulatory proteins of celastrol response to LPS challenge. The dynamic changes of candidate proteins were then monitored by PRM quantitation and qPCR assay at corresponding time points to reveal the dual anti-inflammatory mechanisms of Celastrol against the LPS-induced acute inflammation.

Chinese Chemical Letters 32 (2021) 2164



Booting the electrochemical properties of Fe-based anode by the formation multiphasic nanocomposite for lithium-ion batteries

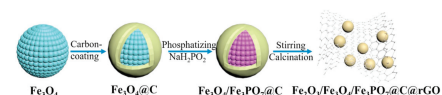
Guotao Xiang^a, Jiangmei Yin^a, Xixi Zhang^a, Peiyu Hou^{a,b}, Xijin Xu^a

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

^b Department of Applied Physics, The Hong Kong Polytechnic University, Hong Kong, China

Multiphasic composite Fe₂O₃/Fe₃O₄/Fe₃PO₇@C@rGO is successfully prepared from Fe₃O₄/C nanospheres fixed on graphene oxide as precursors.

Chinese Chemical Letters 32 (2021) 2169



Rapid detection of pesticide residues in Chinese herbal medicines by molecularly imprinted membrane electrospray ionization mass spectrometry

Chunmei Wu^a, Tianyi Li^b, Dongju Li^c, Shanshan Jia^a, Jianmei Huang^a, Haimin Lei^a, Mei Zhang^a

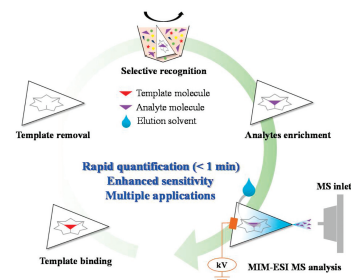
^a School of Chinese Materia Medica, Beijing University of Chinese Medicine, Beijing 102488, China

^b National Institute for Communicable Disease Control and Prevention, Chinese Center for Disease Control and Prevention, Beijing 102206, China

^c Experimental Teaching Center, School of Basic Medical Sciences, Fudan University, Shanghai 200032, China

In this study, we developed a rapid analytical method to detect four main classes of pesticides in Chinese herbal medicines (CHMs) using MIM-ESI MS. This method can potentially be coupled with portable MS and used on-site in the field.

Chinese Chemical Letters 32 (2021) 2174



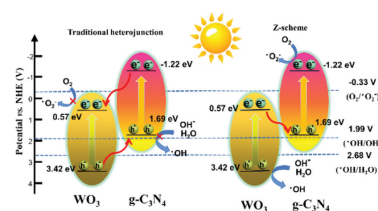
In-situ construction of Z-scheme g-C₃N₄/WO₃ composite with enhanced visible-light responsive performance for nitenpyram degradation

Shiqiao Zhou, Ye Wang, Kun Zhou, Dongyang Ba, Yanhui Ao, Peifang Wang

Key Laboratory of Integrated Regulation and Resource Development on Shallow Lakes of Ministry of Education, College of Environment, Hohai University, Nanjing 210098, China

Direct Z-scheme WO₃/g-C₃N₄ photocatalyst was elaborately prepared by *in situ* calcination method. Results showed that the as prepared Z-scheme WO₃/g-C₃N₄ photocatalyst had higher degradation activity for nitenpyram (NTP).

Chinese Chemical Letters 32 (2021) 2179



A pico-HPLC-LIF system for the amplification-free determination of multiple miRNAs in cells

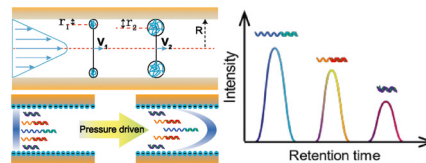
Wenmei Zhang^a, Zunsheng Han^b, Yingqi Liang^a, Qi Zhang^a, Xiangnan Dou^a, Guangsheng Guo^a, Xiayan Wang^a

^a Center of Excellence for Environmental Safety and Biological Effects, Beijing Key Laboratory for Green Catalysis and Separation, Department of Chemistry and Biology, Beijing University of Technology, Beijing 100124, China

^b State 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

An amplification-free based method for simultaneous determination of multiple miRNAs in cell-scale volumes was developed using a pico-HPLC-LIF system with a nanocapillary of an inner diameter of 680 nm, and the limit of detection low to zeptomolar level was achieved. The method was tested in real cell extracts, and the differential expression of different miRNAs was discovered.

Chinese Chemical Letters 32 (2021) 2183



Facile synthesis of GO as middle carrier modified flower-like BiOBr and C₃N₄ nanosheets for simultaneous treatment of chromium(VI) and tetracycline

Liushan Jiang^a, Yu Xie^a, Fan He^b, Yun Ling^a, Jinsheng Zhao^c, Hao Ye^a, Shiqian Li^a, Jiangli Wang^a, Yang Hou^{b,d}

^a College of Environment and Chemical Engineering, Nanchang Hangkong University, Nanchang 330063, China

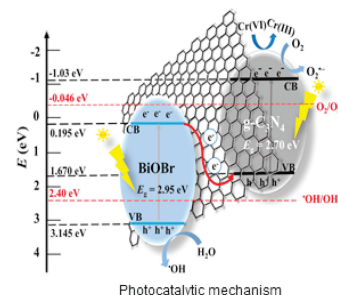
^b Key Laboratory of Biomass Chemical Engineering of Ministry of Education, College of Chemical and Biological Engineering, Zhejiang University, Hangzhou 310027, China

^c College of Chemistry and Chemical Engineering, Liaocheng University, Liaocheng 252059, China

^d Ningbo Research Institute, Zhejiang University, Ningbo 315100, China

A g-C₃N₄/GO/BiOBr ternary Z-scheme composite was fabricated by the hydrothermal method and applied in dealing with combined pollutants of tetracycline (TC) and Cr(VI) simultaneously.

Chinese Chemical Letters 32 (2021) 2187



Hybridization induced ion-barrier effect for the label-free and sensitive electrochemical sensing of Hepatocellular Carcinoma biomarker of miRNA-122

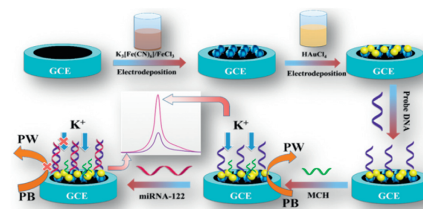
Feng Gao^a, Yaru Chu^a, Yijing Ai^a, Weiqiang Yang^{a,b}, Zhenyu Lin^b, Qingxiang Wang^a

^a College of Chemistry and Environment, Fujian Provincial Key Laboratory of Modern Analytical Science and Separation Technology, Minnan Normal University, Zhangzhou 363000, China

^b Ministry of Education Key Laboratory for Analytical Science of Food Safety and Biology, Fujian Provincial Key Laboratory of Analysis and Detection for Food Safety, College of Chemistry, Fuzhou University, Fuzhou 350116, China

A label-free and sensitive electrochemical biosensing strategy for miRNA-122 has been proposed based on hybridization induced ion-barrier effect.

Chinese Chemical Letters 32 (2021) 2192



Integrated metabolomics analysis of the effect of PPAR δ agonist GW501516 on catabolism of BCAAs and carboxylic acids in diabetic mice

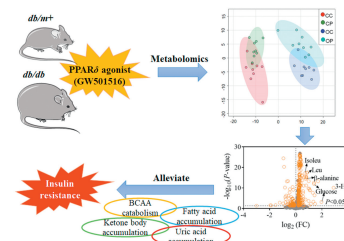
Li Xiang^a, Juan Nie^b, Li Wang^a, Yu Wang^a, Jingchun Shi^b, Juntong Wei^b, Chi-Wai Lau^a, Zongwei Cai^b, Yu Huang^a

^a Heart and Vascular Institute, School of Biomedical Sciences and Shenzhen Research Institute, Chinese University of Hong Kong, Hong Kong, China

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

PPAR δ agonist GW501516 significantly altered the increased levels of metabolites associated with the impaired systemic insulin sensitivity. This study provides valuable information suggesting a therapeutic potential of PPAR δ agonists in treatment of metabolic dysfunction in diabetes.

Chinese Chemical Letters 32 (2021) 2197



Accelerating C₂+ alcohols synthesis from syngas by simultaneous optimizations of CO dissociation and chain growth over CuCo alloy catalyst

Meiling Shui^a, Chao Huang^a, Peiyu Ma^a, Wenjie Li^a, Qun He^a, Wenlong Wu^b, Yisheng Tan^c, Jun Bao^a

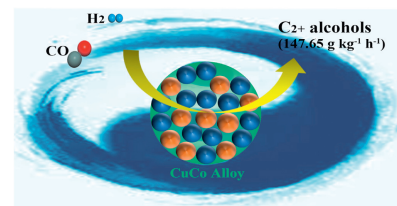
^a National Synchrotron Radiation Laboratory, University of Science and Technology of China, Hefei 230029, China

^b Hefei National Laboratory for Physical Sciences at the Microscale, Key Laboratory of Strongly-Coupled Quantum Matter Physics of Chinese Academy of Sciences, Key Laboratory of Surface and Interface Chemistry and Energy Catalysis of Anhui Higher Education Institutes, Department of Chemical Physics, University of Science and Technology of China, Hefei 230026, China

^c State Key Laboratory of Coal Conversion, Institute of Coal Chemistry, Chinese Academy of Sciences, Taiyuan 030001, China

The production of higher alcohols from syngas over CuCo alloy catalysts can be boosted by controlling the metallic components. Finally, the optimized catalyst achieves a high space-time-yield of 147.65 g kg⁻¹ h⁻¹ due to its optimized CO dissociation adsorption and chain growth capabilities by virtue of the proper equilibrium in CO activation.

Chinese Chemical Letters 32 (2021) 2203



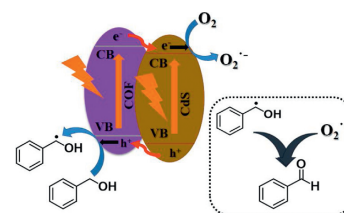
Covalent organic framework stabilized CdS nanoparticles as efficient visible-light-driven photocatalysts for selective oxidation of aromatic alcohols

Kaiyue Zhang, Guilong Lu, Zuoshuai Xi, Yaqiong Li, Qingjie Luan, Xiubing Huang

Beijing Advanced Innovation Center for Materials Genome Engineering, Beijing Key Laboratory of Function Materials for Molecule & Structure Construction, School of Materials Science and Engineering, University of Science and Technology Beijing, Beijing 100083, China

COF with conjugated structures as supports for CdS nanoparticles could improve the separation of photo-generated charge carriers and promote the photocatalytic performance of selective oxidation of aromatic alcohols under visible light.

Chinese Chemical Letters 32 (2021) 2207



Highly-active, metal-free, carbon-based ORR cathode for efficient organics removal and electricity generation in a PFC system

Qingyi Zeng^{a,b}, Sheng Chang^{a,b}, Mingqi Wang^b, Mi Li^a, Qinwen Deng^a, Zhu Xiong^b, Baoxue Zhou^c, Yanbiao Liu^d

^a School of Resources & Environment and Safety Engineering, University of South China, Hengyang 421001, China

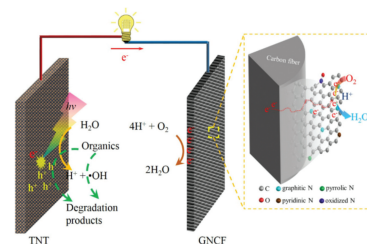
^b Institute of Environmental Research at Greater Bay, Key Laboratory for Water Quality and Conservation of the Pearl River Delta, Ministry of Education, Guangzhou University, Guangzhou 510006, China

^c School of Environmental Science and Engineering, Shanghai Jiao Tong University, Shanghai 200240, China

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

Efficiently improved organics degradation and electricity generation in a photocatalytic fuel cell system is achieved by accelerating oxygen reduction reaction using a novel surface graphitized N-doped carbon felt cathode, which is prepared by *in-situ* modifying the doping species of polyacrylonitrile-based carbon felt via a facile annealing process in Ar atmosphere.

Chinese Chemical Letters 32 (2021) 2212



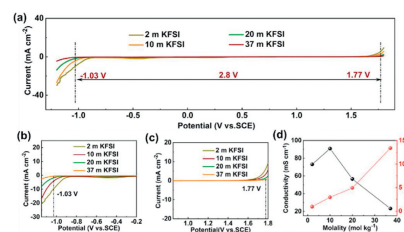
Promoting operating voltage to 2.3 V by a superconcentrated aqueous electrolyte in carbon-based supercapacitor

Man Zhang, Weijian Wang, Xianhui Liang, Chang Li, Wenjun Deng, Haibiao Chen, Rui Li

School of Advanced Materials, Peking University Shenzhen Graduate School, Shenzhen 518055, China

The highly concentrated electrolyte can achieve a wide electrochemical stability windows (ESWs) of 2.8 V with both cathodic (~ 1.77 V vs. SCE) and anodic (~ 1.03 V vs. SCE) and high ionic conductivity of 23.12 mS/m.

Chinese Chemical Letters 32 (2021) 2217



Yolk-shell nanostructural Ni₂P/C composites as the high performance electrocatalysts toward urea oxidation

Yi Zhang^{a,b}, Chundong Wang^{a,c}

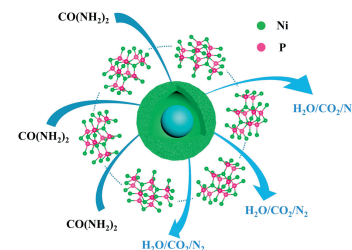
^a School of Optical and Electronic Information, Wuhan National Laboratory for Optoelectronics, Huazhong University of Science and Technology, Wuhan 430074, China

^b Key Laboratory of Green Chemical Process of Ministry of Education, Key Laboratory of Novel Reactor and Green Chemical Technology of Hubei Province, School of Chemical Engineering and Pharmacy, Wuhan Institute of Technology, Wuhan 430073, China

^c Key Laboratory of Nanodevices and Applications, Suzhou Institute of Nano-Tech and Nano-Bionics, Chinese Academy of Sciences, Suzhou 215123, China

Novel Ni₂P/C-YS composites are fabricated for use as highly efficient urea electrooxidation catalysts. The unique hollow yolk-shell configuration and the doped carbon nanoparticles enable the high conductivity for fast electron transfer, the optimization of adsorption nature, and thereby accelerating the UOR kinetics.

Chinese Chemical Letters 32 (2021) 2222



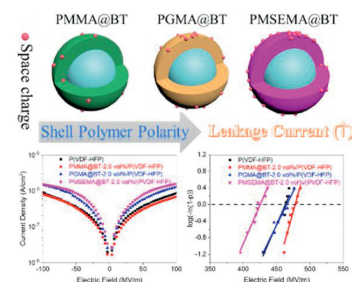
Tailoring the polarity of polymer shell on BaTiO₃ nanoparticle surface for improved energy storage performance of dielectric polymer nanocomposites

Hongfei Li, Liwei Wang, Yingke Zhu, Pingkai Jiang, Xingyi Huang

Shanghai Key Laboratory of Electrical Insulation and Thermal Aging, The State Key Laboratory of Metal Matrix Composites, Department of Polymer Science and Engineering, Shanghai Jiao Tong University, Shanghai 200240, China

Space charge tend to accumulate at the polarity shell of core-shell structured nanoparticles, which causes leakage current and electrical breakdown at high electrical field, reduce the energy storage performance of nanocomposite dielectric.

Chinese Chemical Letters 32 (2021) 2229



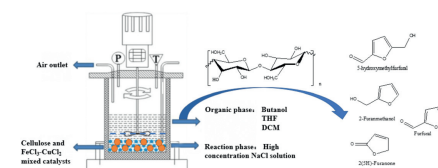
Enhanced conversion of α -cellulose to 5-HMF in aqueous biphasic system catalyzed by FeCl_3 - CuCl_2

Lilin Zhang, Yinbing Tian, Yuanyuan Wang, Liyi Dai

Shanghai Key Laboratory of Green Chemistry and Green Process, College of Chemistry and Molecular Engineering, East China Normal University, Shanghai 200241, China

Catalytic conversion process of cellulose with mixed catalysts FeCl_3 - CuCl_2 in two-phase system was investigated.

Chinese Chemical Letters 32 (2021) 2233



Cu-alanine complex-derived CuO electrocatalysts with hierarchical nanostructures for efficient oxygen evolution

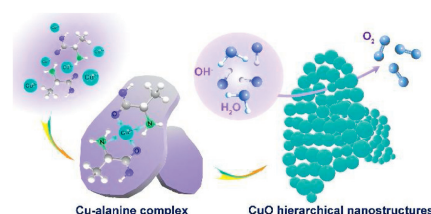
Xinran Li^a, Changli Wang^a, Yang-Yi Liu^a, Huaiguo Xue^a, Huan Pang^a, Qiang Xu^{a,b}

^a School of Chemistry and Chemical Engineering, Yangzhou University, Yangzhou 225009, China

^b AIST-Kyoto University Chemical Energy Materials Open Innovation Laboratory (ChEM-OIL), National Institute of Advanced Industrial Science and Technology (AIST), Kyoto 606-8501, Japan

A facile method using the Cu-alanine complex as a precursor is presented for preparing CuO electrocatalysts with optimized hierarchical nanostructures, crystal growth orientation and element components, which exhibit high electrocatalytic activity for OER.

Chinese Chemical Letters 32 (2021) 2239



Designed preparation of CoS/Co/MoC nanoparticles incorporated in N and S dual-doped porous carbon nanofibers for high-performance Zn-air batteries

Yanrong Ren^a, Haiyan Wang^a, Tianyu Zhang^b, Luanxixin Ma^c, Pengcheng Ye^a, Yijun Zhong^a, Yong Hu^a

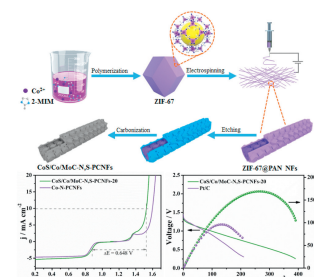
^a Key Laboratory of the Ministry of Education for Advanced Catalysis Materials, Department of Chemistry, Zhejiang Normal University, Jinhua 321004, China

^b School of Biological and Medical Engineering, School of Food Science and Engineering, Hefei University of Technology, Hefei 230009, China

^c Queen Mary University of London Engineering School, NPU/Material Science and Engineering, Northwestern Polytechnical University, Xi'an 710000, China

A sophisticated nanostructure composed of CoS, Co and MoC nanoparticles incorporated in N and S dual-doped porous carbon nanofibers is designed and synthesized, which delivers an excellent power density (169.1 mW/cm²) and a large specific capacity (819.3 mAh/g) with the assembled Zn-air battery.

Chinese Chemical Letters 32 (2021) 2243



The discovery of interfacial electronic interaction within cobalt boride@MXene for high performance lithium-sulfur batteries

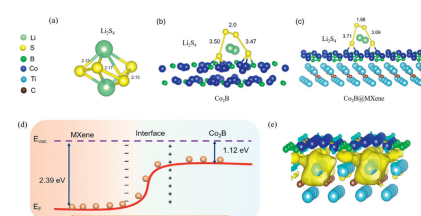
Bin Guan^a, Xun Sun^a, Yu Zhang^a, Xian Wu^a, Yue Qiu^a, Maoxu Wang^a, Lishuang Fan^{a,b}, Naiqing Zhang^{a,b}

^a State Key Laboratory of Urban Water Resource and Environment, School of Chemistry and Chemical Engineering, Harbin Institute of Technology, Harbin 150001, China

^b Academy of Fundamental and Interdisciplinary Sciences, Harbin Institute of Technology, Harbin 150001, China

The interfacial electronic interaction can enhance the conversion kinetics of polysulfides and acquire atomic-level understanding of polysulfides catalytic conversion behavior on heterogeneous material.

Chinese Chemical Letters 32 (2021) 2249



High lithiophilic nitrogen-doped carbon nanotube arrays prepared by *in-situ* catalyze for lithium metal anode

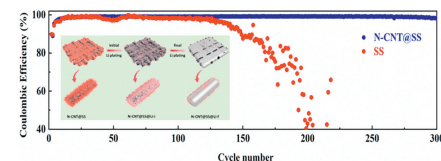
Chenyang Zhao^a, Xiaoju Yin^{a,b}, Zhikun Guo^a, Dan Zhao^a, Guiye Yang^a, Aosai Chen^a, Lishuang Fan^{a,b}, Yu Zhang^a, Naiqing Zhang^{a,b}

^a State Key Laboratory of Urban Water Resource and Environment, School of Chemistry and Chemical Engineering, Harbin Institute of Technology, Harbin 150001, China

^b Academy of Fundamental and Interdisciplinary Sciences, Harbin Institute of Technology, Harbin 150001, China

Nitrogen doped carbon nanotubes were prepared by a self-catalytic method by melamine on stainless steel mesh (N-CNT@SS) as a lithium metal composite anode to uniform lithium ion flux and inhibits dendrite generation.

Chinese Chemical Letters 32 (2021) 2254



Graded interface engineering of 3D/2D halide perovskite solar cells through ultrathin (PEA)₂PbI₄ nanosheets

Lijie Zhu^{a,b}, Qipeng Lu^c, Chunhai Li^{a,b}, Yue Wang^a, Zhenbo Deng^a

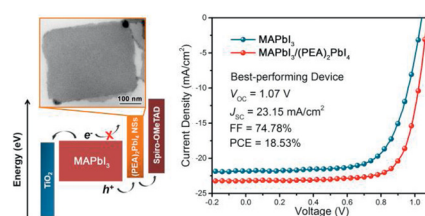
^a Key Laboratory of Luminescence and Optical Information, Ministry of Education, Beijing JiaoTong University, Beijing 100044, China

^b School of Instrument Science and Opto-Electronics Engineering, Beijing Information Science and Technology University, Beijing 100192, China

^c School of Materials Science and Engineering, University of Science and Technology Beijing, Beijing 100083, China

By incorporation of ultrathin 2D halide perovskite nanosheets (NSs) with 3D MAPbI₃, the perovskite solar cells with dimensional graded heterojunction could be prepared, which exhibited improved power conversion efficiency and stability under moisture conditions.

Chinese Chemical Letters 32 (2021) 2259



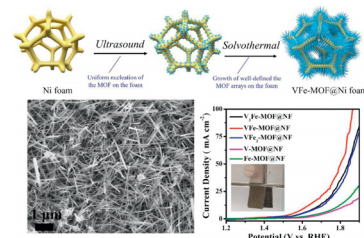
High-performance electrocatalyst of vanadium-iron bimetal organic framework arrays on nickel foam for overall water splitting

Liang Han, Jie Xu, Ya Huang, Wenjun Dong, Xilai Jia

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

Well-defined VFe-MOF arrays have been successfully prepared on nickel foam. The as-fabricated VFe-MOF@NF electrode can expose abundant active sites and provide facile mass transport, thereby giving excellent electrocatalytic activity for water splitting in alkaline medium.

Chinese Chemical Letters 32 (2021) 2263



Hydrogen generation of ammonia borane hydrolysis catalyzed by Fe₂₂@Co₅₈ core-shell structure

Jinrong Huo^{a,c}, Ling Fu^d, Chenxu Zhao^{b,c}, Chaozheng He^{b,c}

^a School of Sciences, Xi'an Technological University, Xi'an 710021, China

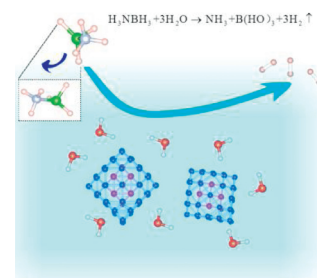
^b Shaanxi Key Laboratory of Optoelectronic Functional Materials and Devices, School of Materials Science and Chemical Engineering, Xi'an Technological University, Xi'an 710021, China

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

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

With the help of Fe₂₂@Co₅₈ core-shell nanoclusters catalyst, AB hydrolyzes in aqueous solution and produces 3 H₂ molecules. The entire reaction process could proceed spontaneously at room temperature.

Chinese Chemical Letters 32 (2021) 2269



Fluorination strategy enables greatly improved performance for organic solar cells based on polythiophene derivatives

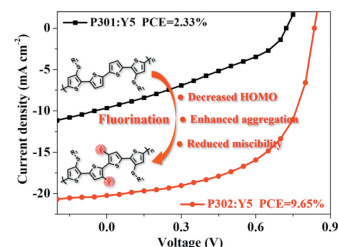
Chenyi Yang^{a,b}, Shaoqing Zhang^{a,b}, Junzhen Ren^b, Pengqing Bi^b, Xiaotao Yuan^a, Jianhui Hou^{a,b}

^a School of Chemistry and Biology Engineering, University of Science and Technology Beijing, Beijing 100083, China

^b State Key Laboratory of Polymer Physics and Chemistry, Beijing National Laboratory for Molecular Sciences, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China

Introducing fluorine atoms on the backbone of P302 can not only downshift the energy levels, but also greatly improve the phase separation morphologies of the active layers, leading to the significantly improved PCE of 9.65% for P302:Y5-based OSC.

Chinese Chemical Letters 32 (2021) 2274



A co-activation strategy for enhancing the performance of hematite in photoelectrochemical water oxidation

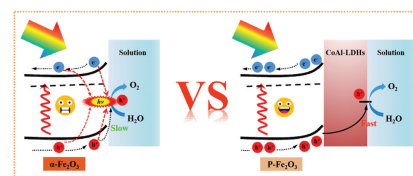
Boyao Xie^{a,b}, Xingming Ning^a, Shuoming Wei^a, Jia Liu^a, Jimei Zhang^b, Xiaoquan Lu^a

^a Tianjin Key Laboratory of Molecular Optoelectronic Science, Department of Chemistry, School of Science, Tianjin University, Tianjin 300072, China

^b State Key Laboratory of Separation Membranes and Membrane Processes, School of Chemistry and Chemical Engineering, Tiangong University, Tianjin 300387, China

A co-activation strategy is proposed, namely through phosphorus (P) doping and the loading of CoAl-layered double hydroxides (CoAl-LDHs) cocatalysts. Systematic studies reveal that the remarkable PEC performance is attributed to accelerated surface OER kinetics and enhanced carrier separation efficiency.

Chinese Chemical Letters 32 (2021) 2279



Carbon dots/Bi₂WO₆ composite with compensatory photo-electronic effect for overall water photo-splitting at normal pressure

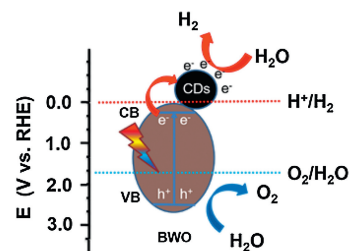
Haodong Nie^a, Kaiqiang Wei^a, Yi Li^a, Yan Liu^a, Yajie Zhao^a, Hui Huang^a, Mingwang Shao^a, Yang Liu^a, Zhenhui Kang^{a,b}

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

^b Macao Institute of Materials Science and Engineering, Macau University of Science and Technology, Macao 999078, China

CDs/Bi₂WO₆ photocatalyst with compensatory photo-electronic effect has enhanced activity for overall water photo-splitting without any sacrificial agent. The *in-situ* TPV technique was employed to study the photoelectron extraction and the interface charge transfer kinetics of this composite catalyst.

Chinese Chemical Letters 32 (2021) 2283



Synthesis of Sn nanocluster@carbon dots for photodynamic therapy application

Xiaolong Hu^a, Shuna Wang^a, Qinghua Luo^a, Binghui Ge^b, Qin Cheng^a, Chen Dong^a, Jiahui Xu^a, Haizhen Ding^a, Mingsheng Xu^a, Antonio Claudio Tedesco^{a,c}, Xin Huang^d, Renquan Zhang^d, Hong Bi^a

^a School of Chemistry and Chemical Engineering, Anhui Key Laboratory of Modern Biomaterials, Anhui University, Hefei 230601, China

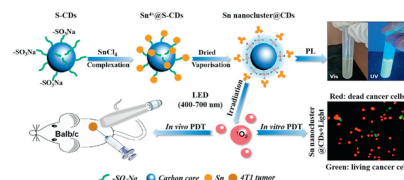
^b Institutes of Physical Science and Information Technology, Anhui University, Hefei 230601, China

^c Department of Chemistry, Center of Nanotechnology and Tissue Engineering-Photobiology and Photomedicine Research Group, Faculty of Philosophy, Sciences and Letters of Ribeirão Preto, University of São Paulo, Ribeirão Preto, São Paulo 14040-901, Brazil

^d Department of Thoracic Surgery, First Affiliated Hospital of Anhui Medical University, Hefei 230032, China

Carbon dots (CDs) with stable Sn nanocluster-superposited structure can greatly enhance the fluorescence, and show a lower cytotoxicity and much better PDT effect of both *in vitro* and *in vivo* tests than original CDs.

Chinese Chemical Letters 32 (2021) 2287



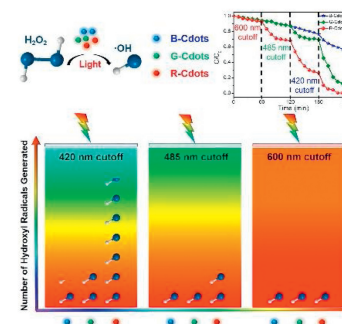
A metal-free carbon dots for wastewater treatment by visible light active photo-Fenton-like reaction in the broad pH range

Dongxue Yang, Dan Qu, Li An, Xupeng Zong, Zaicheng Sun

Center of Excellence for Environmental Safety and Biological Effects, Beijing Key Laboratory for Green Catalysis and Separation, Department of Chemistry and Biology, Beijing University of Technology, Beijing 100124, China

Cdots with the broader light adsorption rang possess the stronger catalytic activity for the photo-Fenton reaction. And the Cdots photo-Fenton can be carried out in the broad pH range from acidic to basic solution, which has a great potential to treat wastewater in the neutral system.

Chinese Chemical Letters 32 (2021) 2292



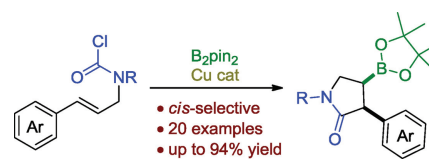
Copper catalyzed borylative cyclization of 3-arylallyl carbamoyl chloride with B_2pin_2 : stereoselective synthesis of *cis*-2-aryl-3-boryl- γ -lactams

Mei-Hua Shen, Ting-Biao Wan, Xiu-Rong Huang, Yan Li, Dan-Hua Qian, Hua-Dong Xu, Defeng Xu

Jiangsu Key Laboratory of Advanced Catalytic Materials & Technology, School of Pharmacy, Changzhou University, Changzhou 213164, China

Borylative cyclization of *E*-3-arylallyl carbamoyl chlorides is achieved through copper catalyzed intramolecular carboboration with B_2pin_2 . 2-Aryl-3-boryl- γ -lactams are formed with exclusive *cis*-diastereoselectivity. CuBr-Dppp combination gives the best outcomes. The substrate scope is profiled.

Chinese Chemical Letters 32 (2021) 2297



Recognition of glycine by cucurbit[5]uril and cucurbit[6]uril: A comparative study of *exo*- and *endo*-binding

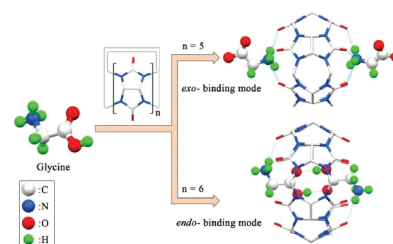
Peihui Shan^a, Ruilian Lin^b, Ming Liu^a, Zhu Tao^a, Xin Xiao^a, Jingxin Liu^b

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

^b College of Chemistry and Chemical Engineering, Anhui University of Technology, Maanshan 243002, China

Recognition features of Gly with Q[5] and Q[6] were investigated. Experimental data indicate that Gly exhibits *exo*- or *endo*-binding modes with Q[5] and Q[6], depending on the size of the hosts.

Chinese Chemical Letters 32 (2021) 2301



Redox deracemization of α -substituted 1,3-dihydroisobenzofurans

Xiaohan Chen^{a,b}, Ran Zhao^a, Ziqiang Liu^{a,c}, Shutao Sun^c, Yingang Ma^a, Qingyun Liu^b, Xia Sun^e, Lei Liu^{a,c,d}

^a School of Pharmaceutical Sciences, Cheeloo College of Medicine, Shandong University, Ji'nan 250012, China

^b College of Chemical and Biological Engineering, State Key Laboratory of Mining Disaster Prevention and Control Co-founded by Shandong Province and the Ministry of Science and Technology, Shandong University of Science and Technology, Qingdao 266590, China

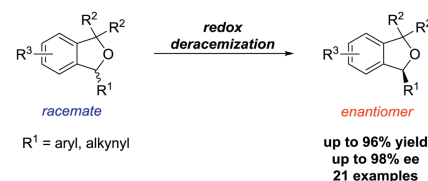
^c School of Chemistry and Chemical Engineering, Shandong University, Ji'nan 250100, China

^d Shenzhen Research Institute of Shandong University, Shenzhen 518057, China

^e Department of Pharmacology, School of Basic Medical Sciences, Cheeloo College of Medicine, Shandong University, Ji'nan 250012, China

A highly effective one-pot redox deracemization of α -substituted 1,3-dihydroisobenzofurans has been described.

Chinese Chemical Letters 32 (2021) 2305



Cascade reaction to 1*H*-pyrazoles from hydrazones *via* sodium Ni-trite promoted dual C–C/C–N formation, annulation and aromatization with 1,2-dichloroethane

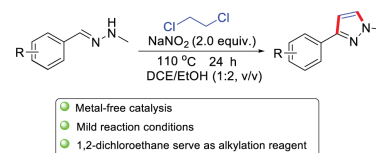
Liqiang Hao^a, Hongyan Liu^a, Zheng Zhang^a, Fuqiang Wen^a, Chengcai Xia^a, Zengfen Pang^b

^a Institute of Pharmacology, Pharmacy College, Shandong First Medical University & Shandong Academy of Medical Sciences, Tai'an 271016, China

^b Shandong Cancer Hospital and Institute, Shandong First Medical University & Shandong Academy of Medical Sciences, Ji'nan 250117, China

A novel route for tandem C–C/C–N formation, annulation and aromatization of hydrazones with 1,2-dichloroethane to synthesize 1*H*-pyrazoles has been developed. Furthermore, the 1,2-dichloroethane serve as alkylation reagent in good to excellent yields. This methodology features mild reaction conditions and good functional group tolerance, providing a direct approach for the preparation of 1*H*-pyrazoles.

Chinese Chemical Letters 32 (2021) 2309



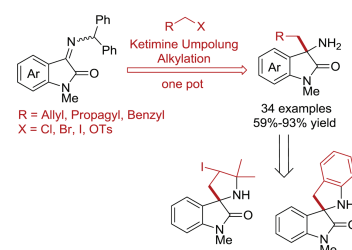
Allylation and alkylation of oxindoleketimines *via* imine umpolung strategy

Mei-Hua Shen, Chen Li, Qing-Song Xu, Bin Guo, Rui Wang, Xiaoqian Liu, Hua-Dong Xu, Defeng Xu

Jiangsu Key Laboratory of Advanced Catalytic Materials & Technology, School of Pharmacy, Changzhou University, Changzhou 213164, China

When treated with an alkoxide base like *t*-BuOK in aprotic solvent, *N*-diphenylmethyl imino oxindoles, made conveniently through condensation of corresponding isatins with *N*-diphenylmethyl amine, are deprotonated to form azaallyl anions. Allylation and alkylation of this type of intermediates proceed smoothly with diverse C-electrophiles. Acidic work up finishes 3-amino-3-allyl/alkyl oxindoles. The overall transformation equals to an umpolung process at the C3 of isatins.

Chinese Chemical Letters 32 (2021) 2313



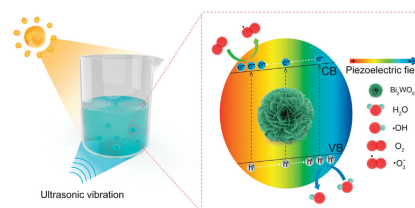
Built-in piezoelectric field improved photocatalytic performance of nanoflower-like Bi₂WO₆ using low-power white LEDs

Hua Lei, Meixuan Wu, Ying Liu, Fan Mo, Jiayao Chen, Shilong Ji, Yan Zou, Xiaoping Dong

Department of Chemistry, Key Laboratory of Surface & Interface Science of Polymer Materials of Zhejiang Province, Zhejiang Sci-Tech University, Xiasha Higher Education Zone, Hangzhou 310018, China

The piezoelectric field promotes the separation of photo-generated charges in Bi₂WO₆ excited by low-power white LEDs, and the produced ROS ([•]OH, O₂^{•-}) by the synergetic photopiezocatalysis effect of Bi₂WO₆ can efficiently degrade organic pollutants.

Chinese Chemical Letters 32 (2021) 2317



A DNA G-quadruplex converts SOD1 into fibrillar aggregates

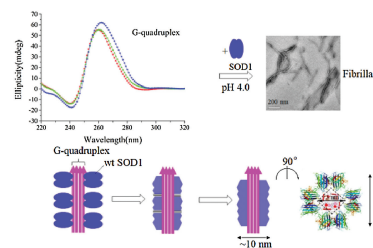
Wenqian Liu^a, Yulin Xu^a, Xue Li^{a,b}, Yan Meng^a, Huiling Wang^a, Chunrong Liu^a, Changlin Liu^a, Li Wang^a

^a Key Laboratory of Pesticide & Chemical Biology, Ministry of Education, and School of Chemistry, Central China Normal University, Wuhan 430079, China

^b Wuhan No. 1 Huiquan Middle School, Wuhan 430022, China

A DNA G-quadruplex converts SOD1 into fibrillar aggregates under acidic conditions.

Chinese Chemical Letters 32 (2021) 2322



Design, synthesis and biological evaluation of pyridyl substituted benzoxazepinones as potent and selective inhibitors of aldosterone synthase

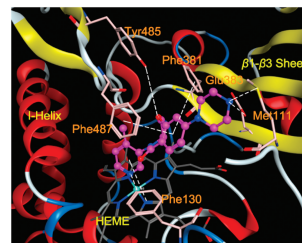
Haichao Zhu^a, Meihua Liu^a, Haiyan Li^a, Ting Guan^a, Qi Zhang^a, Yang Chen^a, Yingxiang Liu^a, Rolf R. Hartmann^b, Lina Yin^a, Qingzhong Hu^a

^a School of Pharmaceutical Sciences, Guangzhou University of Chinese Medicine, Guangzhou 51006, China

^b Pharmaceutical and Medicinal Chemistry, Saarland University, Campus C2.3, D-66123, Saarbrücken, Germany

A series of pyridyl substituted 3,4-dihydrobenzo[*l*][1,4]oxazepin-5(2*H*)-ones were obtained as potent, selective and orally available inhibitors of aldosterone synthase for the treatment of heart failure and renal diseases.

Chinese Chemical Letters 32 (2021) 2327



Ammonia leaching mechanism and kinetics of LiCoO₂ material from spent lithium-ion batteries

Dongmin Li^a, Bao Zhang^a, Xing Ou^a, Jiafeng Zhang^a, Kui Meng^b, Guanjun Ji^a, Pengfei Li^a, Jianhui Xu^c

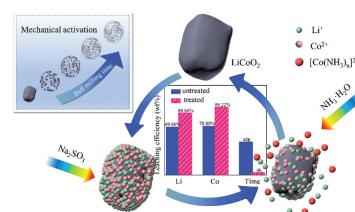
^a School of Metallurgy and Environment, Central South University, Changsha 410083, China

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

^c School of Environment and Civil Engineering, Dongguan University of Technology, Dongguan 523808, China

In this paper, ammonia leaching and high-energy ball milling are used to selectively recover valuable metals from spent LiCoO₂ materials. The mechanism of LiCoO₂ material in the system is elucidated and the leaching efficiency is significantly improved.

Chinese Chemical Letters 32 (2021) 2333



Hyperterpenoids A and B: Two pairs of unprecedented 6/6/4/6/6 polycyclic cyclobutane meroterpenoids with potent neuroprotective and anti-inflammatory activities from *Hypericum beani*

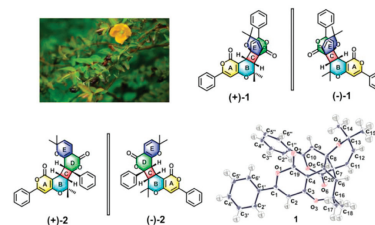
Bo Zhen^a, Xinyue Suo^a, Jun Dang^b, Huilan Yue^b, Yanduo Tao^b, Jia-Jia Wang^a, Li Li^a, Ming-Bao Lin^a, Qi Hou^a, Wei-Ping Wang^a, Xiao-Liang Wang^a, Jian-Dong Jiang^a, Teng-Fei Ji^a

^a State 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

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

Hyperterpenoid A (**1**) and B (**2**), two pairs of enantiomers, with an unprecedented 6/6/4/6/6 polycyclic skeleton, were isolated from *Hypericum beani*. Their absolute configurations were elucidated by extensive NMR and single-crystal X-ray diffraction methods and the related plausible biogenetic pathways, significant neuroprotective activity and potential anti-inflammatory activity were also presented.

Chinese Chemical Letters 32 (2021) 2338



A millimeter-sized negatively charged polymer embedded with molybdenum disulfide nanosheets for efficient removal of Pb(II) from aqueous solution

Guangze Nie^a, Shijun Qiu^a, Xiang Wang^a, Yan Du^a, Qingrui Zhang^b, Yang Zhang^a, Hengle Zhang^a

^a School of Environmental Science and Engineering, Nanjing Tech University, Nanjing 211816, China

^b Hebei Key Laboratory of Heavy Metal Deep-Remediation in Water and Resource Reuse, Yanshan University, Qinhuangdao 066004, China

A millimeter-sized nanocomposite MoS₂-001 with excellent hydraulic property in the application was synthesized by loading molybdenum disulfide nanosheets into a polystyrene cation exchanger D-001. MoS₂-001 exhibits highly efficient Pb(II) removal from aqueous solutions and could be effectively regenerated for repeated use.

Chinese Chemical Letters 32 (2021) 2342

