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Chinese Chemical Letters (中国化学快报)

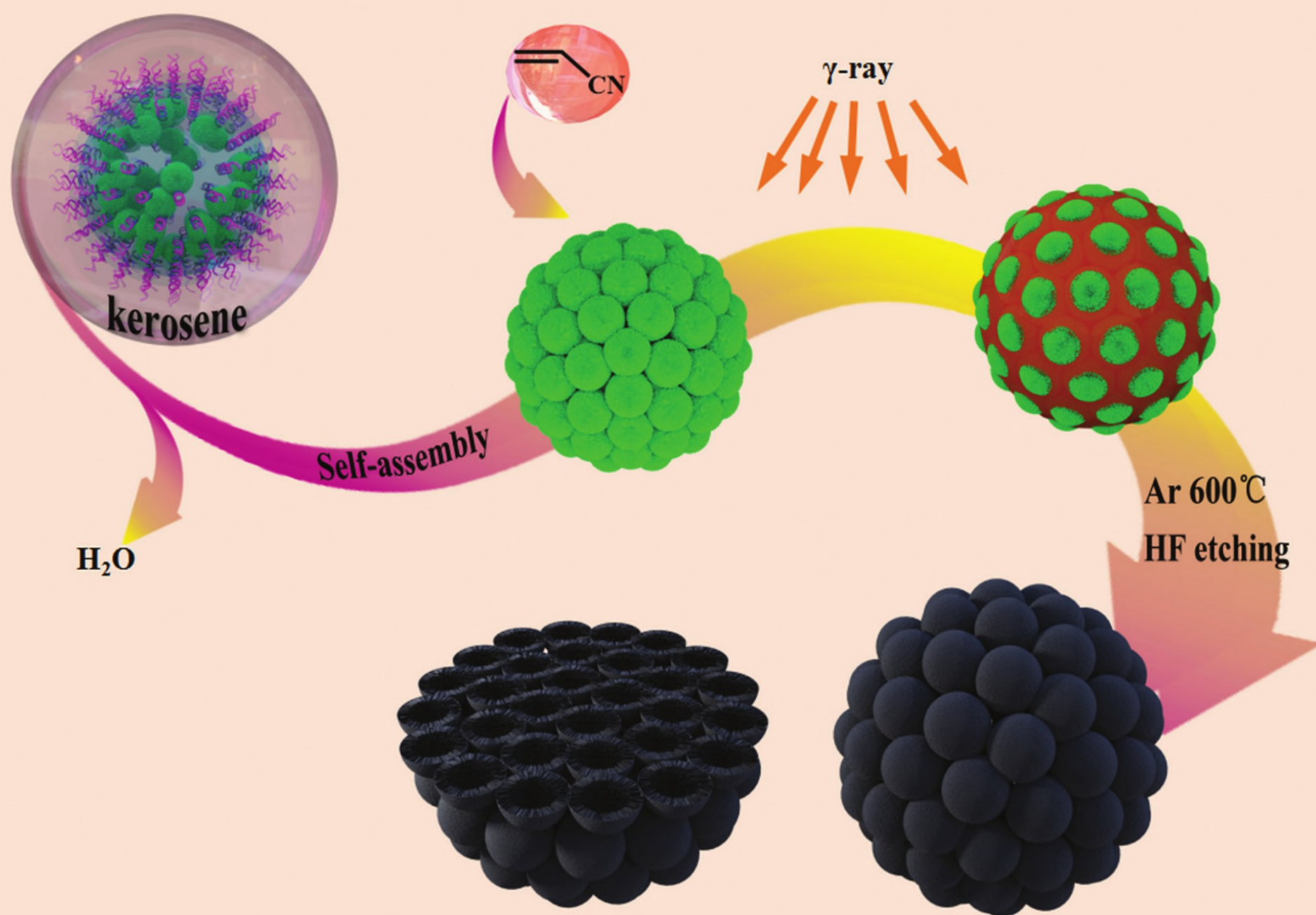
| Volume 32 | Number 2 | FEBRUARY 2021 |

ISSN 1001-8417

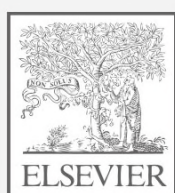
CN 11-2710/O6



Inverse-opal hierarchical porous N-doped carbon microspheres prepared by novel colloidal crystal template



Provided by Prof. Xue-Wu Ge and Dr. Mo-Zhen Wang's group



REVIEW

Yusuf Valentino Kaneti, Ming Hu,
Yusuke Yamauchi et al.
Spatial-controlled etching of coordination
polymers

COMMUNICATION

Yaning He et al.
Design of activatable red-emissive assay for
cysteine detection in aqueous medium with
aggregation induced emission characteristics

Chinese Chemical Society
Institute of Materia Medica, Chinese Academy of Medical Sciences



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Chinese Chemical Letters

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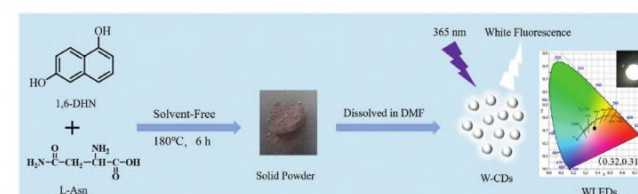
Graphical Abstracts/Chin Chem Lett 32 (2021) iii–xx

Communications

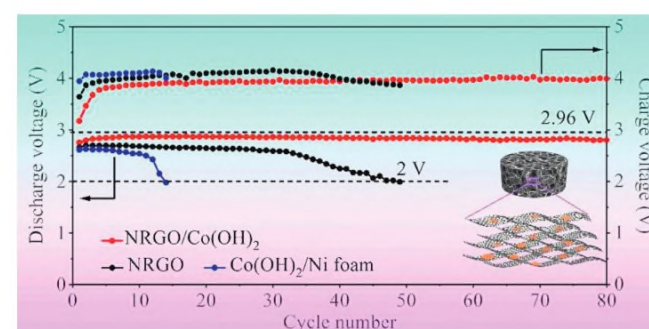
One-step straightforward solid synthesis of high yield white fluorescent carbon dots for white light emitting diodesBingyan Han^{a,b}, Jingmei Jiang^{a,b}, Qifang Yan^{a,b}, Ze Xin^{a,b}, Qin Yan^{a,b}^a State Key Laboratory of Fine Chemicals, Dalian University of Technology, Dalian 116023, China^b School of Chemical Engineering, Dalian University of Technology, Panjin 124221, China

White fluorescent CDs (W-CDs) was prepared through one-step solid-phase reaction and can be directly applied to white light LEDs.

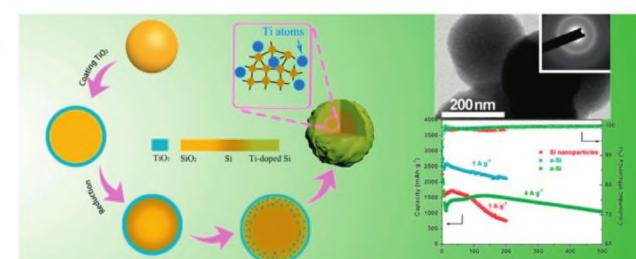
Chinese Chemical Letters 32 (2021) 591

**Free-standing nitrogen doped graphene/Co(OH)₂ composite films with superior catalytic activity for aprotic lithium-oxygen batteries**Zifang Zhao^{a,b}, Yue Liu^b, Fang Wan^b, Shuai Wang^b, Nannan Zhang^b, Lili Liu^a, Anyuan Cao^c, Zhiqiang Niu^b^a Tianjin Key Laboratory for Photoelectric Materials and Devices, School of Materials Science and Engineering, Tianjin University of Technology, Tianjin 300384, China^b Key Laboratory of Advanced Energy Materials Chemistry (Ministry of Education), Renewable Energy Conversion and Storage Center, College of Chemistry, Nankai University, Tianjin 300071, China^c Department of Materials Science and Engineering, College of Engineering, Peking University, Beijing 100871, ChinaThe free-standing NRGO/Co(OH)₂ composite films were prepared and employed in lithium-oxygen batteries. Highly improved discharge capacity and lower overpotential were achieved. As a result, NRGO/Co(OH)₂ composite films are considered as potential electrodes for future lithium-oxygen batteries.

Chinese Chemical Letters 32 (2021) 594

**Amorphous silicon from low-temperature reduction of silica in the molten salts and its lithium-storage performance**Xi Huang^a, Xuyun Guo^b, Yicheng Ding^a, Run Wei^a, Shengnan Mao^a, Ye Zhu^b, Zhihao Bao^a^a Shanghai Key Laboratory of Special Artificial Microstructure Materials and Technology, School of Physics Science and Engineering, Tongji University, Shanghai 200092, China^b Department of Applied Physics, Research Institute for Smart Energy, Hong Kong Polytechnic University, Hong Kong, ChinaAmorphous silicon was successfully synthesized via reduction of silica in the molten salts with TiO₂ layer, which introduced titanium doping and suppressed the crystal growth of Si. It displayed a good structural stability in lithiation process and exhibited excellent electrochemical performance as anode for Li-ion batteries.

Chinese Chemical Letters 32 (2021) 598



Two 2D uranyl coordination complexes showing effective photocatalytic degradation of Rhodamine B and mechanism study

Xiaolan Tong^{a,b}, Shan Wang^a, Jun Zuo^a, Yingchong Ge^a, Qiang Gao^c, Suijun Liu^d, Jianhua Ding^a, Fen Liu^a, Jianqiang Luo^{a,b}, Jianbo Xiong^{a,b}

^a State Key Laboratory of Nuclear Resources and Environment, School of Chemistry, Biology and Materials Science, East China University of Technology, Nanchang 330013, China

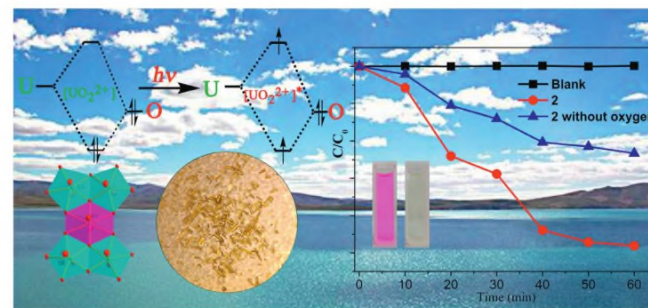
^b Jiangxi Province Key Laboratory of Synthetic Chemistry, East China University of Technology, Nanchang 330013, China

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

^d School of Chemistry and Chemical Engineering, Jiangxi University of Science and Technology, Ganzhou 341000, China

Two new hydrostable two-dimensional (2D) uranyl coordination complexes were synthesized. Both of them show effective photocatalytic degradation of rhodamine B (RhB) in aqueous solution. The photocatalytic reaction mechanism was also studied by condition experiments and theoretical analysis.

Chinese Chemical Letters 32 (2021) 604



Reviews

Recent advances in electrochemical sensors for antibiotics and their applications

Qun Wang^{a,b}, Qiang Xue^{a,b}, Tao Chen^{a,b}, Jiawei Li^{a,b}, Yuehua Liu^{a,b}, Xiaohan Shan^{a,b}, Fei Liu^{a,b}, Jianbo Jia^c

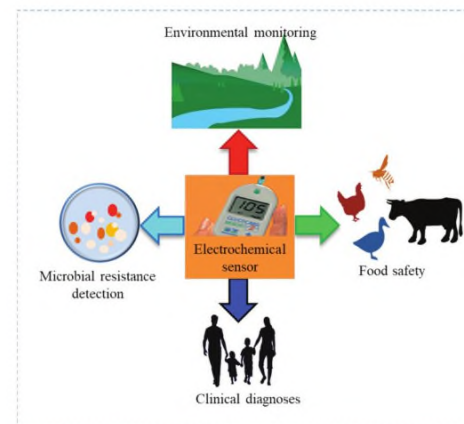
^a MOE Key Laboratory of Groundwater Circulation and Environmental Evolution, China University of Geosciences (Beijing), Beijing 100083, China

^b Beijing Key Laboratory of Water Resources and Environmental Engineering, China University of Geosciences (Beijing), Beijing 100083, China

^c School of Biotechnology and Health Sciences, Wuyi University, Jiangmen 529020, China

In recent years, electrochemical sensors have developed rapidly in the detection of antibiotics in various fields and they have a bright future for development.

Chinese Chemical Letters 32 (2021) 609



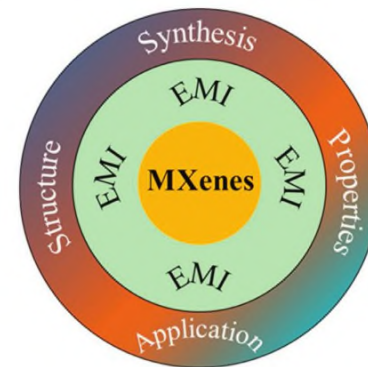
Recent advance in electromagnetic shielding of MXenes

Yanqing Yao, Jia Zhao, Xuanhe Yang, Chunpeng Chai

School of Materials Science and Engineering, Beijing Institute of Technology, Beijing 100081, China

In this review, the progress on the MXenes material including their synthetic strategies, properties and EMI application is highlighted.

Chinese Chemical Letters 32 (2021) 620



Spatial-controlled etching of coordination polymers

Qi Dang^a, Yucen Li^a, Wei Zhang^a, Yusuf Valentino Kaneti^b, Ming Hu^a, Yusuke Yamauchi^{b,c,d}

^a School of Physics and Electronic Science, East China Normal University, Shanghai 200241, China

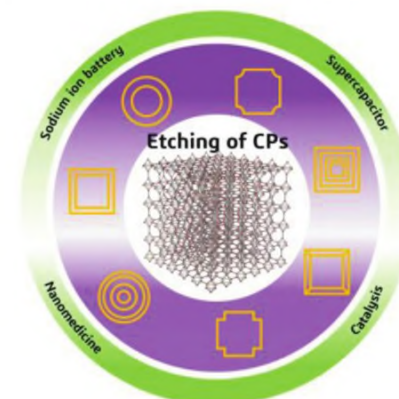
^b International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS), Ibaraki 305-0044, Japan

^c School of Chemical Engineering and Australian Institute for Bioengineering and Nanotechnology (AIBN), The University of Queensland, Queensland 4072, Australia

^d Department of Plant and Environmental New Resources, Kyung Hee University, Gyeonggi-do 446-701, South Korea

The etching of coordination polymers or metal-organic frameworks provides the opportunity to tailor their structure, properties, and functional performance for energy, catalysis and biomedical applications.

Chinese Chemical Letters 32 (2021) 635



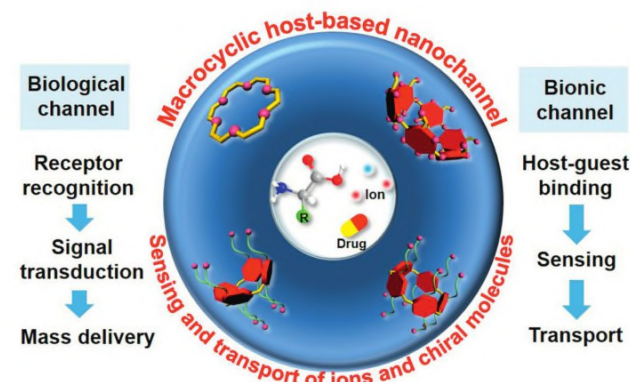
Selective sensing and transport in bionic nanochannel based on macrocyclic host-guest chemistry

Siyun Zhang, Imene Boussouar, Haibing Li

Key Laboratory of Pesticide and Chemical Biology (CCNU), Ministry of Education, College of Chemistry, Central China Normal University, Wuhan 430079, China

Inspired by biological channels, selective sensing and transport of ions and chiral molecules are realized in macrocyclic host-based nanochannels.

Chinese Chemical Letters 32 (2021) 642



Applications of metal–organic framework composites in CO₂ capture and conversion

Jiewei Liu^{a,b,d}, Chunying Chen^c, Kun Zhang^a, Li Zhang^c

^a School of Biotechnology and Health Sciences, Wuyi University, Jiangmen 529020, China

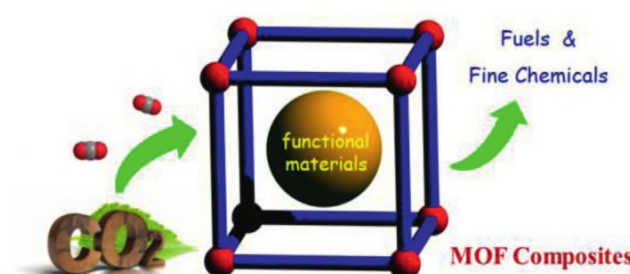
^b International Healthcare Innovation Institute (Jiangmen), Jiangmen 529040, China

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

^d School of Chemical Engineering and Light Industry, Guangdong University of Technology, Guangzhou 510006, China

This review introduces the syntheses of metal-organic framework (MOF) composites and their applications in CO₂ capture and conversion, including CO₂ chemical fixation, hydrogenation, photoreduction, electroreduction and photoelectroreduction.

Chinese Chemical Letters 32 (2021) 649



Recent advances in *N*-heterocyclic carbene-catalyzed radical reactions

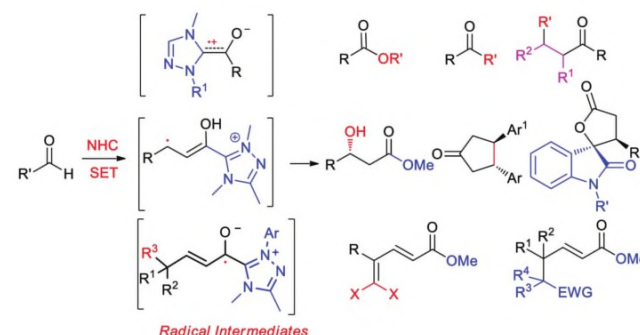
Lei Dai^{a,b}, Song Ye^{a,b}

^a Beijing National Laboratory for Molecular Sciences, CAS Key Laboratory of Molecular Recognition and Function, CAS Research/Education Center for Excellence in Molecular Sciences, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China

^b University of Chinese Academy of Sciences, Beijing 100049, China

The *N*-heterocyclic carbene (NHC)-catalyzed reactions *via* radicals open new opportunities for transformation of aldehydes beyond classical two electron pathways.

Chinese Chemical Letters 32 (2021) 660



Communications

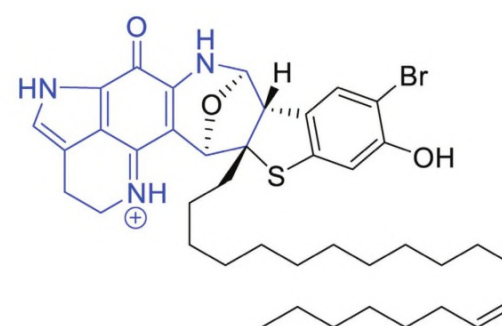
Synthetic studies towards atkamine

Feng Zhang, Yujie Niu, Dacheng Hong, Yilin Ye, Yuhui Hua, Shihao Ding, Yandong Zhang

Department of Chemistry and Key Laboratory of Chemical Biology of Fujian Province, iChEM, College of Chemistry and Chemical Engineering, Xiamen University, Xiamen 361005, China

The tetracyclic core structure of atkamine, a complex brominated marine pyrroloiminoquinone alkaloid, has been successfully constructed through a formal [5 + 2] annulation.

Chinese Chemical Letters 32 (2021) 668



Organocatalytic asymmetric [3 + 3] annulation of isatin *N,N'*-cyclic azomethine imines with enals: Efficient approach to functionalized spiro *N*-heterocyclic oxindoles

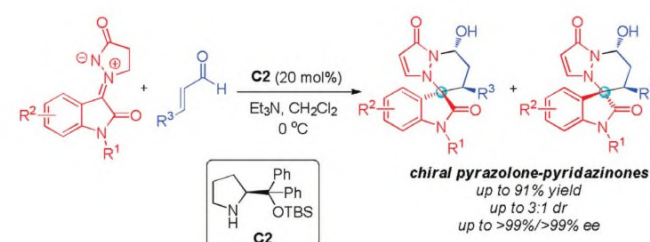
Boqi Gu^b, Shuxiao Wu^b, Hui Xu^b, Wulin Yang^b, Zhixiang Liu^a, Weiping Deng^{a,b}

^a College of Pharmaceutical Sciences, Zhejiang Chinese Medical University, Hangzhou 310053, China

^b Shanghai Key Laboratory of New Drug Design, School of Pharmacy, East China University of Science and Technology, Shanghai 200237, China

The chiral secondary amine-catalyzed [3 + 3] annulation of isatin *N,N'*-cyclic azomethine imines with α,β -unsaturated aldehydes is described, furnishing spiro *N*-heterocyclic oxindole derivatives in good yields (up to 91%) and good to excellent enantioselectivities (up to >99% *ee*), albeit with modest diastereoselectivities (up to 3.1:1 *dr*).

Chinese Chemical Letters 32 (2021) 672



Highly efficient photocatalytic Suzuki coupling reaction by Pd₃P/CdS catalyst under visible-light irradiation

Huai-Qing Yang^{a,b}, Qian-Qian Chen^{a,b}, Fulai Liu^{a,b}, Rui Shi^a, Yong Chen^{a,b}

^a Key Laboratory of Photochemical Conversion and Optoelectronic Materials & CAS-HKU Joint Laboratory on New Materials, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing 100190, China

^b University of Chinese Academy of Sciences, Beijing 100049, China

Pd₃P nanoparticles are firstly used as a cocatalyst for photocatalytic Suzuki coupling reactions, which exhibit high yields of up to 98% and good stability in alcohol solvent at room temperature.

Chinese Chemical Letters 32 (2021) 676

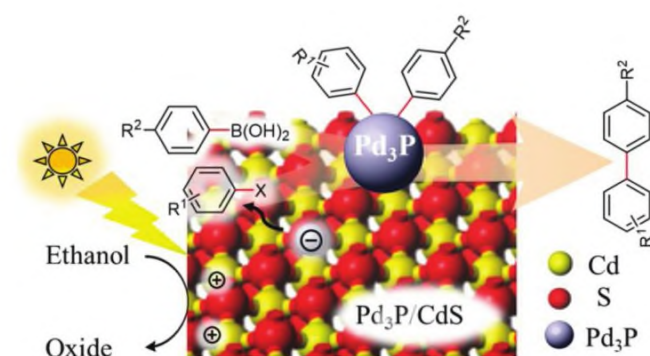


Photo-induced anti-Markovnikov hydroalkylation of unactivated alkenes employing a dual-component initiator

Yachao Zhang^a, Liang-Liang Mao^b, Sifan Hu^a, Yi Luan^a, Huan Cong^{b,c}

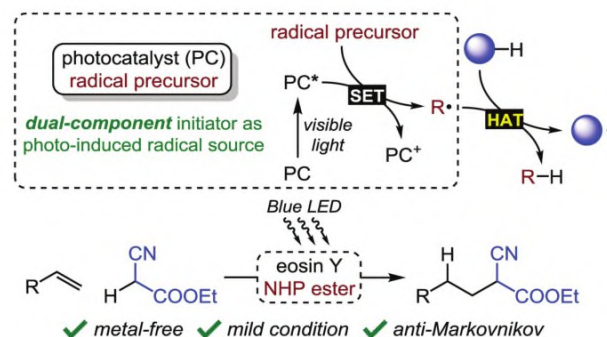
^a School of Materials Science and Engineering, University of Science and Technology Beijing, Beijing 100083, China

^b Key Laboratory of Photochemical Conversion and Optoelectronic Materials, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing 100190, China

^c School of Future Technology, University of Chinese Academy of Sciences, Beijing 100190, China

A dual-component initiator enables metal-free anti-Markovnikov hydroalkylation of unactivated alkenes with cyanoacetate.

Chinese Chemical Letters 32 (2021) 681



The synergistic catalysis on Co nanoparticles and CoN_x sites of aniline-modified ZIF derived Co@NCs for oxidative esterification of HMF

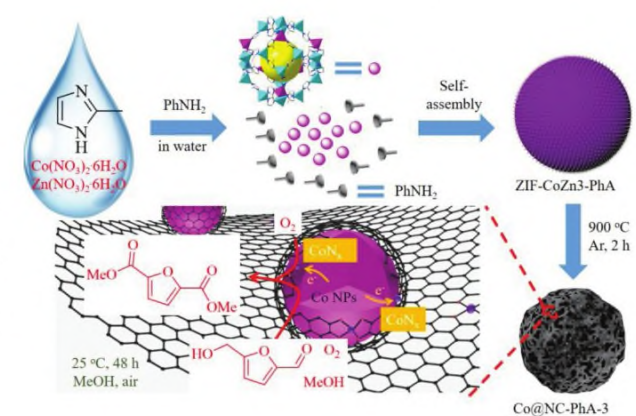
Tao Rui^a, Guo-Ping Lu^{a,b}, Xin Zhao^b, Xun Cao^b, Zhong Chen^b

^a School of Chemical Engineering, Nanjing University of Science & Technology, Nanjing 210094, China

^b School of Materials Science & Engineering, Nanyang Technological University, Singapore 639798, Singapore

Aniline-modified ZIF derived Co/N codoped carbon: Co@NC-PhA-3 can achieve base-free oxidative esterification of HMF under ambient conditions due to its higher specific surface area, the protective carbon shell of smaller Co NPs and higher N content. Furthermore, a synergistic catalytic effect between CoN_x sites and Co NPs has also been disclosed.

Chinese Chemical Letters 32 (2021) 685



Metal-free cascade boron–heteroatom addition and alkylation with diazo compounds

Jiahang Lv^{a,b}, Binlin Zhao^c, Ying Han^a, Yu Yuan^a, Zhuangzhi Shi^{a,b}

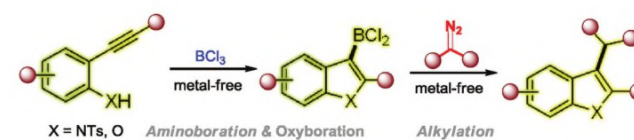
^a College of Chemistry and Chemical Engineering, Yangzhou University, Yangzhou 225002, China

^b State Key Laboratory of Coordination Chemistry, School of Chemistry and Chemical Engineering, Nanjing University, Nanjing 210093, China

^c Department of Chemistry and Materials Science, College of Science, Nanjing Forestry University, Nanjing 210037, China

An efficient method on cascade boron–heteroatom addition and alkylation with diazo compounds to build substituted indoles and benzofurans has been uncovered undercatalyst- and metal-free conditions.

Chinese Chemical Letters 32 (2021) 691



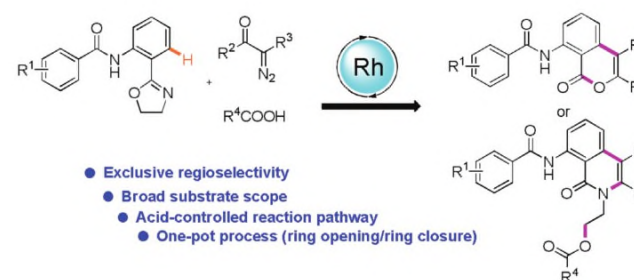
Rhodium(III)-catalyzed chemodivergent annulations between phenyloxazoles and diazos via C–H activation

Xueguo Zhang, Peigen Wang, Liangwei Zhu, Baohua Chen

State Key Laboratory of Applied Organic Chemistry, Lanzhou University, Lanzhou 730000, China

We have developed a one-pot, ring-opening/ring-closure, Rh(III)-catalysed, C–H functionalization of phenyloxazoles with diazo compounds to produce isocoumarins and isoquinolinones. It is a green environmentally friendly reaction pathway.

Chinese Chemical Letters 32 (2021) 695



Expeditious and scalable preparation of a Li–Thiele reagent for amine-based bioconjugation

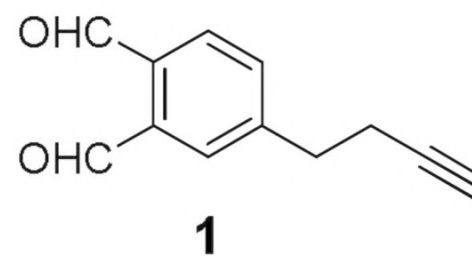
Jiacheng Li^{a,b}, Yuyong Ma^b, Xiang Zhang^b, Xin Cao^b, Hegui Gong^a, Ang Li^b

^a Department of Chemistry, Shanghai University, Shanghai 200444, China

^b State Key Laboratory of Bioorganic and Natural Products Chemistry, Center for Excellence in Molecular Synthesis, Shanghai Institute of Organic Chemistry, University of Chinese Academy of Sciences, Chinese Academy of Sciences, Shanghai 200032, China

Taking advantage of an arene construction strategy, we developed an expeditious and scalable protocol for preparation of Li–Thiele reagent **1**, which may find use in amine-based bioconjugation.

Chinese Chemical Letters 32 (2021) 700



Alkoxy encapsulation of carbazole-based thermally activated delayed fluorescent dendrimers for highly efficient solution-processed organic light-emitting diodes

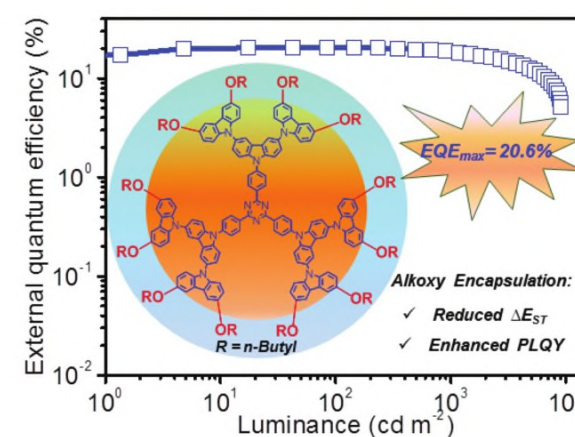
Zhihua Ma^a, Yuchun Wan^a, Wenyue Dong^a, Zhenjun Si^a, Qian Duan^a, Shiyang Shao^b

^a School of Materials Science and Engineering, Changchun University of Science and Technology, Changchun 130022, China

^b State Key Laboratory of Polymer Physics and Chemistry, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, Changchun 130022, China

Alkoxy encapsulation of carbazole-based thermally activated delayed fluorescent dendrimers is demonstrated as a promising approach toward highly efficient solution-processed organic light-emitting diodes with state-of-the-art external quantum efficiency of 20.6%.

Chinese Chemical Letters 32 (2021) 703



Organophosphine bearing multiple hydrogen-bond donors for asymmetric Michael addition reaction of 1-oxoindane-2-carboxylic acid ester *via* dual-reagent catalysis

Haoran Hong^a, Hongyu Wang^c, Changwu Zheng^b, Gang Zhao^b, Yongjia Shang^a

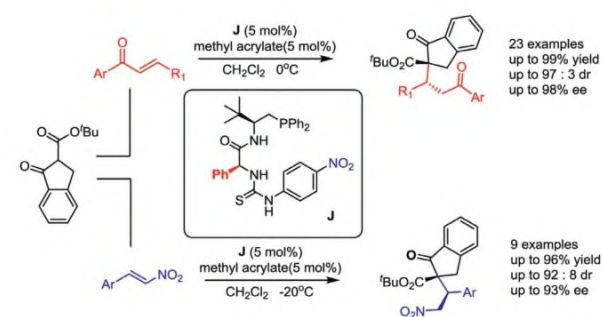
^a Key Laboratory of Functionalized Molecular Solids, Ministry of Education, Anhui Key Laboratory of Molecule-Based Materials (State Key Laboratory Cultivation Base), College of Chemistry and Materials Science, Anhui Normal University, Wuhu 241000, China

^b Key Laboratory of Synthetic Chemistry of Natural Substances, Shanghai Institute of Organic Chemistry, Center for Excellence in Molecular Synthesis, Chinese Academy of Sciences, Shanghai 200032, China

^c College of Chemistry, Chemical Engineering and Materials Science, Shandong Normal University, Ji'nan 250014, China

Multiple hydrogen bonds containing nucleophilic phosphines derived from dipeptide dualreagents catalyzed asymmetric Michael addition reactions between indene esters and activated olefins in high yields and good to excellent enantioselectivities under mild reaction conditions. The success of current highly selective reactions should provide inspiration for expansion to other reactions and would open new paradigms for the synthesis of indanone derivatives bearing chiral quaternary carbon centers.

Chinese Chemical Letters 32 (2021) 708



Palladium-catalyzed cascade synthesis of spirocyclic oxindoles *via* regioselective C2-H arylation and C8-H alkylation of naphthalene ring

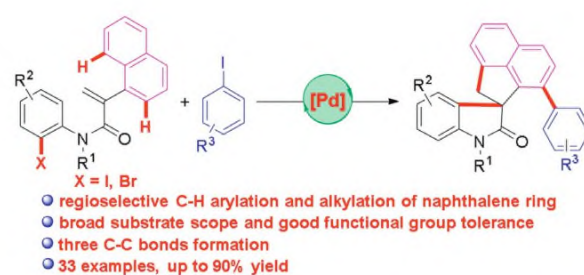
Xiai Luo^{a,b}, Wenguang Li^a, Haiyan Lu^a, Guobo Deng^a, Yuan Yang^a, Chunming Yang^a, Yun Liang^a

^a National & Local Joint Engineering Laboratory for New Petro-chemical Materials and Fine Utilization of Resources, Key Laboratory of Chemical Biology and Traditional Chinese Medicine Research, Ministry of Education, Key Laboratory of the Assembly and Application of Organic Functional Molecules of Hunan Province, College of Chemistry and Chemical Engineering, Hunan Normal University, Changsha 410081, China

^b Hunan University of Medicine, Huaihua 418000, China

A regioselective C2-H arylation and C8-H alkylation of naphthalene ring for synthesizing spirocyclic oxindoles has been achieved by palladium-catalyzed domino reaction.

Chinese Chemical Letters 32 (2021) 713



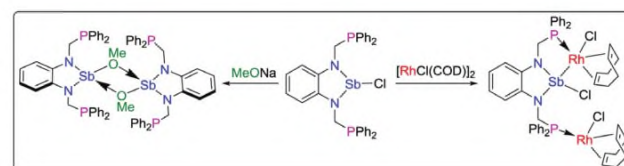
Synthesis, characterization and reactivity of a neutral antimony(III) complex

Xiong Sun, Congqing Zhu

State Key Laboratory of Coordination Chemistry, Jiangsu Key Laboratory of Advanced Organic Materials, School of Chemistry and Chemical Engineering, Nanjing University, Nanjing 210093, China

An antimony(III) complex based on dianionic nitrogen-phosphorus ligand has been reported. This complex exhibits good reactivity with a series of inorganic salts as well as coordination ability with transition metals.

Chinese Chemical Letters 32 (2021) 717



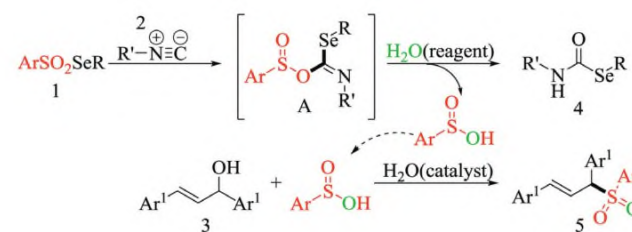
One-pot two-step reaction of selenosulfonate with isocyanides and allyl alcohol under aqueous conditions: Atom-economic synthesis of selenocarbamates and allyl sulfones

Jing-Jing Ai, Jian Li, Shun-Jun Ji, Shun-Yi Wang

Key Laboratory of Organic Synthesis of Jiangsu Province, College of Chemistry, Chemical Engineering and Materials Science & Collaborative Innovation Center of Suzhou Nano Science and Technology, Soochow University, Suzhou 215123, China

A one-pot two-step reaction of selenosulfonate with isocyanides and allyl alcohol under aqueous conditions to afford selenocarbamates and allyl sulfone compounds is reported. The sulfinic acid as the first-step side product is converted to the allyl sulfone compound by water promoted reaction with allyl alcohol. Water acts as both an oxygen source of selenocarbamates and a promoter to drive the second step reaction. The reactions have the advantages of mild conditions, green, environment-friendly and high atomic economy.

Chinese Chemical Letters 32 (2021) 721



Fluorescence enhancement and cytotoxicity reduction of bis-viologen biphenyl by complexation of cucurbit[7]uril

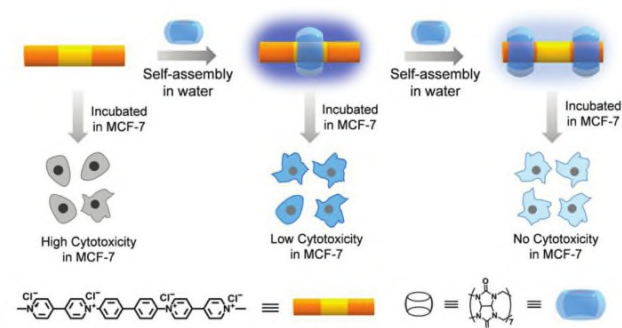
Jing Zhou^{a,b}, Shengzhen Hou^{a,b}, Jin Zhang^{a,b}, Yanru Chen^{a,b}, Hao Chen^{a,b}, Yebang Tan^{a,b}

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

^b Key Laboratory of Special Functional Aggregated Materials, Ministry of Education, Shandong University, Ji'nan 250100, China

Bis-viologen biphenyl (BPV2²⁺) forms 1:1 and 1:2 host-guest complexes with cucurbit[7]uril (CB[7]). Through the encapsulation of CB[7], the fluorescence intensity and biocompatibility of BPV2²⁺ increased significantly, which facilitate the further application of bio-imaging.

Chinese Chemical Letters 32 (2021) 725



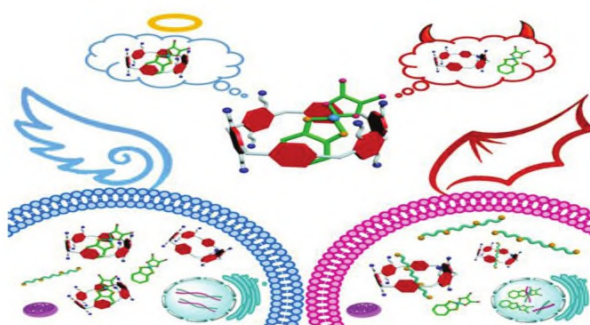
Molecular-scale drug delivery systems loaded with oxaliplatin for supramolecular chemotherapy

Jie Yang, Dihua Dai, Lianjun Ma, Ying-Wei Yang

International Joint Research Laboratory of Nano-Micro Architecture Chemistry, College of Chemistry, and Department of Endoscopies, China-Japan Union Hospital of Jilin University, Jilin University, Changchun 130012, China

Two molecular-scale water-soluble macrocyclic drug delivery systems, namely carboxylated leaning tower[6]arene (CLT6) and carboxylated [2]biphenyl-extended pillar[6]arene (CBpP6), were synthesized to load oxaliplatin for enhanced cytotoxicity on SPM-overexpressed MCF-7 cells and decreased cytotoxicity on liver L02 cells during supramolecular chemotherapy.

Chinese Chemical Letters 32 (2021) 729



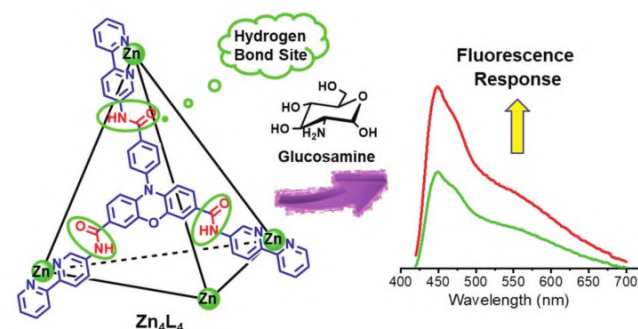
Phenoxazine-based supramolecular tetrahedron as biomimetic lectin for glucosamine recognition

Yuchao Li, Xuezhao Li, Lili Li, Bing Xiao, Jinguo Wu, Hechuan Li, Danyang Li, Cheng He

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

A fluorescent phenoxazine-based metal-organic tetrahedron (**Zn₄L₄**) decorated with 12 amide groups to selective recognition of glucosamine over other related natural mono- and disaccharides was reported.

Chinese Chemical Letters 32 (2021) 735



Quinoline-based aggregation-induced delayed fluorescence materials for highly efficient non-doped organic light-emitting diodes

Liang Zhang^{a,b}, Yin-Feng Wang^{a,c}, Meng Li^a, Qing-Yu Gao^b, Chuan-Feng Chen^{a,c}

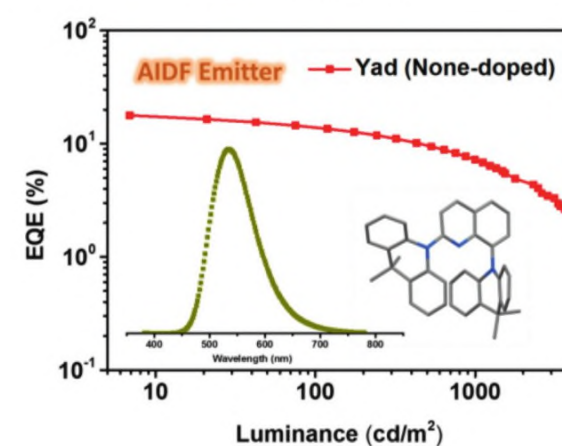
^a Beijing National Laboratory for Molecular Sciences, CAS Key Laboratory of Molecular Recognition and Function, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China

^b College of Chemical Engineering, China University of Mining and Technology, Xuzhou 221116, China

^c University of Chinese Academy of Sciences, Beijing 100049, China

Three TADF emitters **Fene**, **Fens** and **Yad** with quinoline as the new electron acceptor were synthesized. They displayed aggregation-induced delayed fluorescence properties, and the non-doped devices based on the emitters achieved the EQEs of 14.9%, 13.1% and 17.4%, respectively.

Chinese Chemical Letters 32 (2021) 740



Effect of doping order on metal-free heteroatoms dual-doped carbon as oxygen reduction electrocatalyst

Hui-Juan Zhang^{a,b}, Jing Geng^a, Chunlei Cai^a, Zi-Feng Ma^c, Zhong Ma^d, Wenli Yao^e, Junhe Yang^a

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

^b Department of Chemical and Biomolecular Engineering, University of Illinois at Urbana-Champaign, Urbana, Illinois 61801, United States

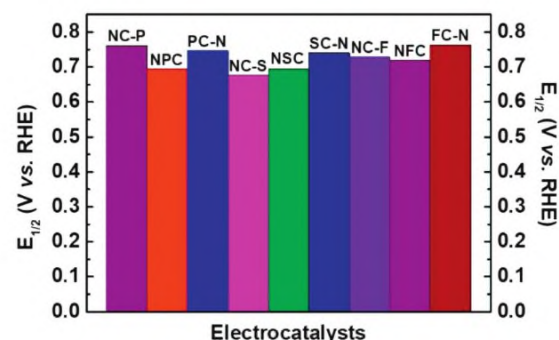
^c Department of Chemical Engineering, Shanghai Jiaotong University, Shanghai 200240, China

^d Department of Chemical Engineering, Waterloo Institute for Nanotechnology (WIN), University of Waterloo, Waterloo, Ontario N2L3G1, Canada

^e Jiangxi Key Laboratory of Power Battery and Material, Faculty of Materials Metallurgy and Chemistry, Jiangxi University of Science and Technology, Ganzhou 341000, China

Based on the differences in electronegativity and atomic radius of metal-free heteroatoms, Herein, we optimize the preparation process by doping order of metal-free heteroatoms to obtain the best electrocatalytic performance through three types of dual-doped carbon, including XC-N (first X doping then N doping), NC-X (first N doping then X doping) and NXC (N and X doping) (X = P, S and F).

Chinese Chemical Letters 32 (2021) 745



Effect of Mie resonance on photocatalytic hydrogen evolution over dye-sensitized hollow C-TiO₂ nanoshells under visible light irradiation

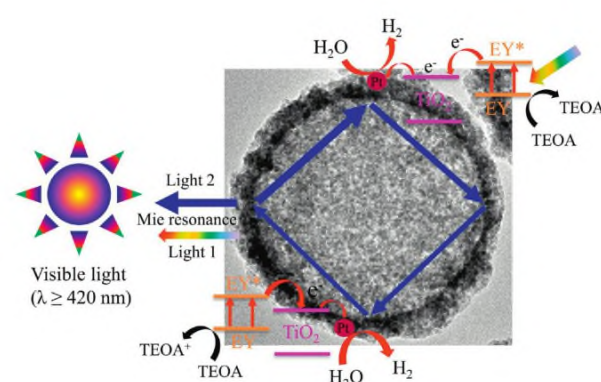
Xiaxi Yao^a, Xiuli Hu^a, Yingying Cui^a, Jialei Huang^a, Wenjun Zhang^a, Xuhong Wang^a, Dawei Wang^b

^a School of Materials Engineering, Suzhou Key Laboratory of Functional Ceramic Materials, Changshu Institute of Technology, Changshu 215500, China

^b Department of Environmental Science and Earth Sciences, Clemson University, Clemson, SC 29634, United States

Mie resonance in hollow nanoshells can be an alternative strategy to increase the light utilization and can be well utilized for enhanced photocatalytic performance.

Chinese Chemical Letters 32 (2021) 750



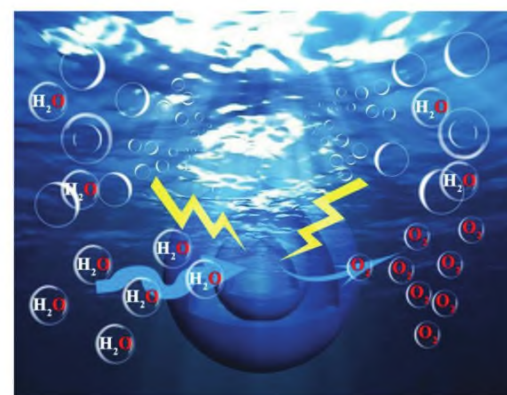
A novel ball-in-ball hollow oxygen-incorporating cobalt sulfide spheres as high-efficient electrocatalyst for oxygen evolution reaction

Yurong Li, Qifei Guo, Yimin Jiang, Wei Shen, Ming Li, Rongxing He

College of Chemistry and Chemical Engineering, Southwest University, Chongqing 400715, China

Introduction of oxygen and sulphur into the novel oxygen-containing amorphous cobalt sulfide ball-in-ball hollow spheres (Co-S-O BBHS) catalyst prepared by anion exchange and Kirkendall effect greatly changes their electronic structure and strengthens the adsorption of *O (adsorbed O species on catalyst surface) intermediate, which leads to outstanding OER activity.

Chinese Chemical Letters 32 (2021) 755



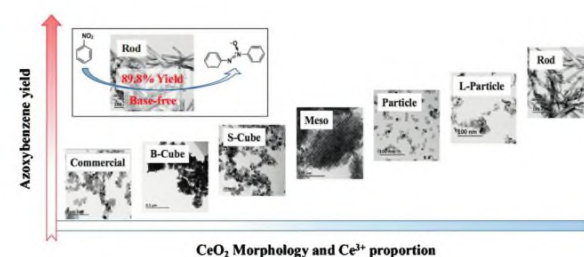
The relationship of morphology and catalytic performance of CeO₂ catalysts for reducing nitrobenzene to azoxybenzene under the base-free condition

Xueke Zhou, Haitao Zhao, Shaojun Liu, Yang Yang, Ruiyang Qu, Chenghang Zhen, Xiang Gao

State Key Lab of Clean Energy Utilization, State Environmental Protection Engineering Center for Coal-Fired Air Pollution Control, Zhejiang University, Hangzhou 310027, China

A series of CeO₂ catalysts with seven morphologies were synthesized and applied in reducing nitrobenzene to azoxybenzene under the base-free condition. The CeO₂ with higher Ce³⁺ proportion exhibited significantly enhanced yield of azoxybenzene. With the highest surface Ce³⁺ proportion, the rod-CeO₂ showed the best performance with 89.8% azoxybenzene yield.

Chinese Chemical Letters 32 (2021) 761



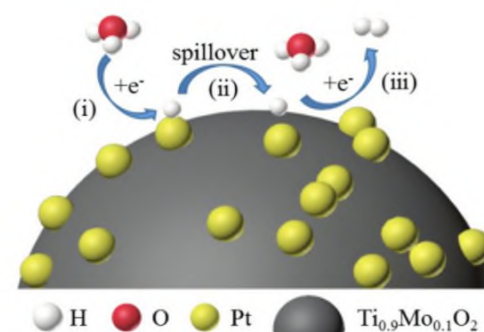
Molybdenum-doped titanium dioxide supported low-Pt electrocatalyst for highly efficient and stable hydrogen evolution reaction

Ke Chen, Shaofeng Deng, Yun Lu, Mingxing Gong, Yezhou Hu, Tonghui Zhao, Tao Shen, Deli Wang

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

The strong metal-support interaction between Pt and $\text{Ti}_{0.9}\text{Mo}_{0.1}\text{O}_2$ regulated the electronic structure of Pt and the hydrogen spillover effect accelerated the hydrogen evolution process, resulting in excellent catalytic activity and stability.

Chinese Chemical Letters 32 (2021) 765



Ceria supported $\text{Ru}^0\text{-Ru}^{\delta+}$ clusters as efficient catalyst for arenes hydrogenation

Yanwei Cao^{a,b}, Huan Zheng^{a,b}, Gangli Zhu^a, Haihong Wu^c, Lin He^a

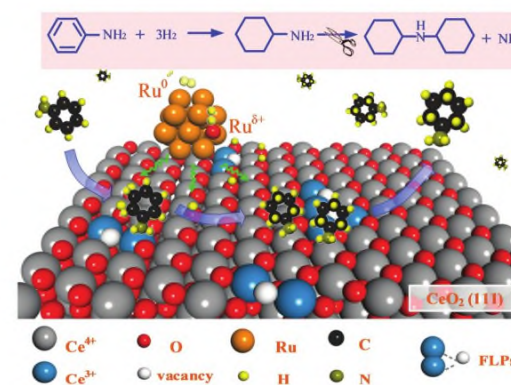
^a State Key Laboratory for Oxo Synthesis and Selective Oxidation (OSSO), Suzhou Research Institute of LICP, Lanzhou Institute of Chemical Physics (LICP), Chinese Academy of Sciences (CAS), Lanzhou 730000, China

^b University of Chinese Academy of Sciences, Beijing 100049, China

^c Henan Province Key Laboratory of New Opto-Electronic Functional Materials, College of Chemistry and Chemical Engineering, Anyang Normal University, Anyang 455000, China

The well-tuned ceria supported $\text{Ru}^0\text{-Ru}^{\delta+}$ cluster was demonstrated as efficient catalyst for aromatic amines hydrogenation with excellent activity and selectivity. The morphology, electronic and chemical properties, especially the $\text{Ru}^0\text{-Ru}^{\delta+}$ clusters and reducible ceria were characterized.

Chinese Chemical Letters 32 (2021) 770



Simultaneous photoelectrochemical detection of dual microRNAs by capturing CdS quantum dots and methylene blue based on target-initiated strand displaced amplification

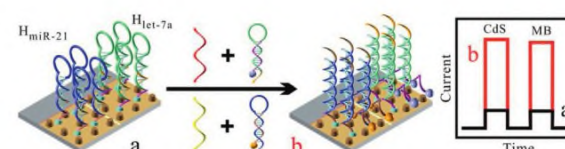
Jiafu Chang^{a,b}, Wenxin Lv^a, Jiahui Wu^a, Haiyin Li^a, Feng Li^{a,b}

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

^b College of Chemistry, Chemical Engineering and Materials Science, Shandong Normal University, Ji'nan 250014, China

A high-performance photoelectrochemical biosensor was developed for dual microRNAs simultaneous biosensing by capturing CdS quantum dots and methylene blue based on strand displaced amplification.

Chinese Chemical Letters 32 (2021) 775



A cost-effective detection of low-abundance mutation with DNA three-way junction structure and lambda exonuclease

Zishan Feng^a, Wei Zhang^{b,c}, Longjie Li^a, Bocheng Tu^a, Weicong Ye^a, Xiaofeng Tang^b, Hongbo Wang^c, Xianjin Xiao^{a,b,c}, Tongbo Wu^{a,b}

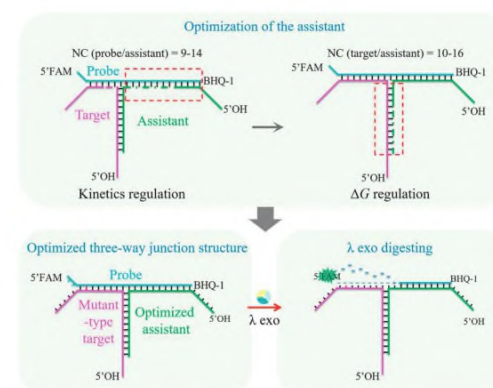
^a School of Pharmacy, Tongji Medical College, Huazhong University of Science and Technology, Wuhan 430030, China

^b Institute of Reproductive Health, Tongji Medical College, Huazhong University of Science and Technology, Wuhan 430030, China

^c Department of Obstetrics and Gynaecology, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan 430022, China

The assistant in the DNA three-way junction structure regulates the reaction of lambda exonuclease to discriminate the mutant-type DNA to the wild-type DNA from kinetics and thermodynamics. The optimization of the assistant helps to improve the selectivity and save the cost for low-abundance mutation detection.

Chinese Chemical Letters 32 (2021) 779



Ultrasensitive assay of ctDNA based on DNA triangular prism and three-way junction nanostructures

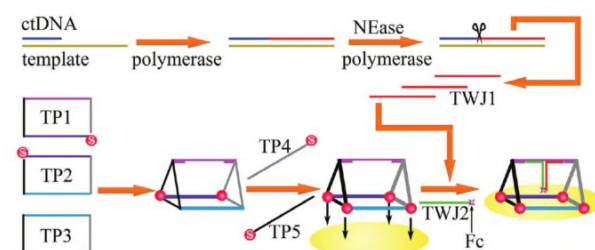
Hua Chai^{a,b}, Peng Miao^a

^a Suzhou Institute of Biomedical Engineering and Technology, Chinese Academy of Sciences, Suzhou 215163, China

^b Jinan Guokeyingong Science and Technology Development Co., Ltd., Ji'nan 250103, China

A facile electrochemical biosensor for ultrasensitive detection of ctDNA is fabricated by the design of DNA triangular prism and three-way junction nanostructures.

Chinese Chemical Letters 32 (2021) 783



Microwave-assisted acid-induced formation of linker vacancies within Zr-based metal organic frameworks with enhanced heterogeneous catalysis

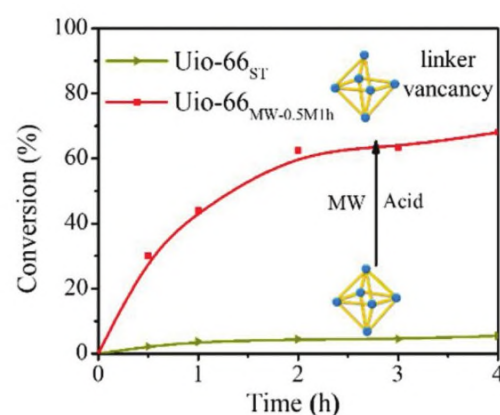
Yu Liang^a, Chenhui Li^a, Lanjun Chen^a, Jia Huo^{a,b}, Mohammed Loubidi^a, Yangyang Zhou^a, Yanbo Liu^a

^a State Key Laboratory of Chem/Bio-sensing and Chemometrics, College of Chemistry and Chemical Engineering, Hunan University, Changsha 410082, China

^b Hunan Provincial Key Laboratory of Advanced Materials for New Energy Storage and Conversion, Hunan University of Science and Technology, Xiangtan 411201, China

Rich linker vacancies have been created within stable Zr-based metal-organic frameworks through a microwave-assisted acid-induced method, which demonstrate excellent catalytic performance for cyclization of citronella.

Chinese Chemical Letters 32 (2021) 787



Aptamer-quantum dots and teicoplanin-gold nanoparticles constructed FRET sensor for sensitive detection of *Staphylococcus aureus*

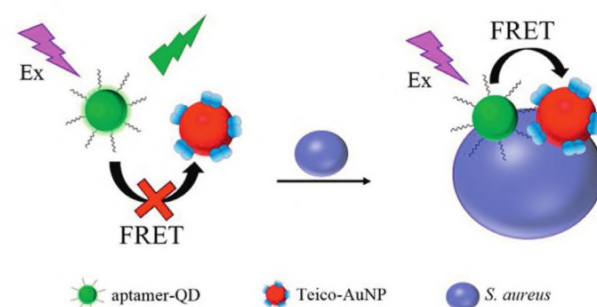
Xiaoqi Tao^b, Ziyi Liao^a, Yaqing Zhang^b, Fei Fu^a, Mengqi Hao^a, Yang Song^a, Erqun Song^a

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

^b College of Food Science, Southwest University, Chongqing 400715, China

In the presence of target *S. aureus*, the aptamers and teicoplanin bound to *S. aureus* simultaneously, making the energy donor (aptamer-QDs) and acceptor (Teico-AuNPs) dramatically close to each other and turn "on" the FRET.

Chinese Chemical Letters 32 (2021) 791



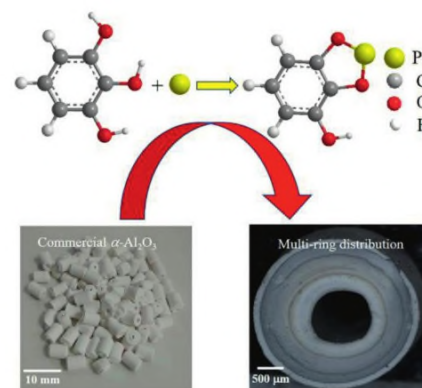
Highly active Pd-Fe/ α -Al₂O₃ catalyst with the bayberry tannin as chelating promoter for CO oxidative coupling to diethyl oxalate

Wei-Chao Xing, Ji-Min An, Jing Lv, Faisal Irshad, Yu-Jun Zhao, Sheng-Ping Wang, Xin-Bin Ma

Key Laboratory for Green Chemical Technology, School of Chemical Engineering and Technology, Tianjin University, Collaborative Innovation Center of Chemical Science and Engineering, Tianjin 300072, China

A large number of phenolic hydroxyl groups in bayberry tannin can efficiently anchor the active component palladium, reduce the particle size and improve the dispersion of the active palladium on the Pd-Fe/ α -Al₂O₃ catalyst.

Chinese Chemical Letters 32 (2021) 796



Atmospheric pressure gas chromatography-tandem mass spectrometry analysis of fourteen emerging polycyclic aromatic sulfur heterocycles in PM_{2.5}

Yanhao Zhang^a, Yi-Jie Chen^{a,b}, Yuanyuan Song^a, Chuan Dong^c, Zongwei Cai^{a,b}

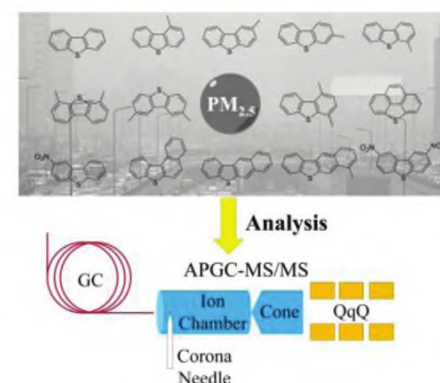
^a State Key Laboratory of Environmental and Biological Analysis, Department of Chemistry, Hong Kong Baptist University, Hong Kong SAR, China

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

^c Institute of Environmental Science, Shanxi University, Taiyuan 030006, China

An analytical method for the determination of fourteen emerging polycyclic aromatic sulfur heterocycles (PASHs) in PM_{2.5} by using atmospheric pressure gas chromatography-tandem mass spectrometry was developed. The highly sensitive and accurate analyses were achieved.

Chinese Chemical Letters 32 (2021) 801



Integration of Fe₂O₃-based photoanode and atomically dispersed cobalt cathode for efficient photoelectrochemical NH₃ synthesis

Weikang Wang^{a,b}, Shengbo Zhang^{a,b}, Yanyan Liu^{a,b}, Li-Rong Zheng^c, Guozhong Wang^a, Yunxia Zhang^a, Haimin Zhang^a, Huijun Zhao^{a,d}

^a Key Laboratory of Materials Physics, Centre for Environmental and Energy Nanomaterials, Anhui Key Laboratory of Nanomaterials and Nanotechnology, CAS Center for Excellence in Nanoscience, Institute of Solid State Physics, Chinese Academy of Sciences, Hefei 230031, China

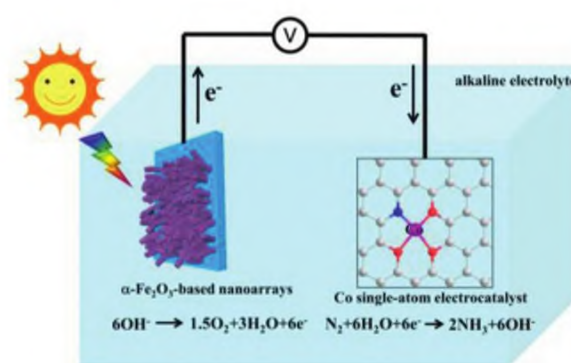
^b University of Science and Technology of China, Hefei 230026, China

^c Beijing Synchrotron Radiation Facility, Institute of High Energy Physics, Chinese Academy of Sciences, Beijing 100049, China

^d Centre for Clean Environment and Energy, Griffith University, Gold Coast Campus, QLD 4222, Australia

A solar-driven PEC-NRR system integrating high-efficiency Fe₂O₃-based photoanode and atomically dispersed cobalt (Co) cathode was fabricated in this work for ambient NH₃ synthesis. This system can afford an NH₃ yield rate of 1021.5 mg mg_{Co}⁻¹ h⁻¹ and faradic efficiency of 11.9% at an applied potential bias of 1.2 V (versus reversible hydrogen electrode) on photoanode in 0.2 mol/L NaOH electrolyte under simulated sunlight irradiation.

Chinese Chemical Letters 32 (2021) 805



Enhanced thermoelectric performance of hydrothermally synthesized polycrystalline Te-doped SnSe

Pei Li^a, Xin Ai^b, Qihao Zhang^{c,d}, Shijia Gu^e, Lianjun Wang^{a,f}, Wan Jiang^{a,e}

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

^b College of Information Science and Technology, Donghua University, Shanghai 201620, China

^c State Key Laboratory of High Performance Ceramics and Superfine Microstructure, Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai 200050, China

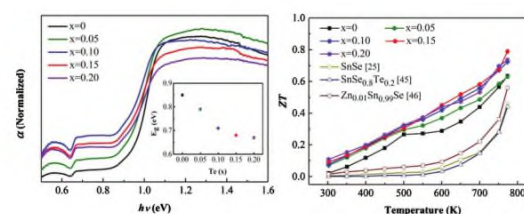
^d Center of Materials Science and Optoelectronics Engineering, University of Chinese Academy of Sciences, Beijing 100049, China

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

^f Engineering Research Center of Advanced Glasses Manufacturing Technology, Ministry of Education, Shanghai 201620, China

p-Type polycrystalline SnSe_{1-x}Te_x nanomaterials are synthesized using eco-friendly and cost-effective hydrothermal approach combined with spark plasma sintering, resulting in a high ZT value of 0.79 at 773 K in SnSe_{0.85}Te_{0.15}.

Chinese Chemical Letters 32 (2021) 811



Co/N-doped carbon nanotube arrays grown on 2D MOFs-derived matrix for boosting the oxygen reduction reaction in alkaline and acidic media

Shuao Wan^a, Jiadong Wu^a, Depeng Wang^a, Huiling Liu^a, Zhicheng Zhang^b, Jianmin Ma^{c,d}, Cheng Wang^a

^a Institute for New Energy Materials and Low-Carbon Technologies, School of Materials Science and Engineering, Tianjin Key Laboratory of Advanced Functional Porous Materials, Tianjin University of Technology, Tianjin 300384, China

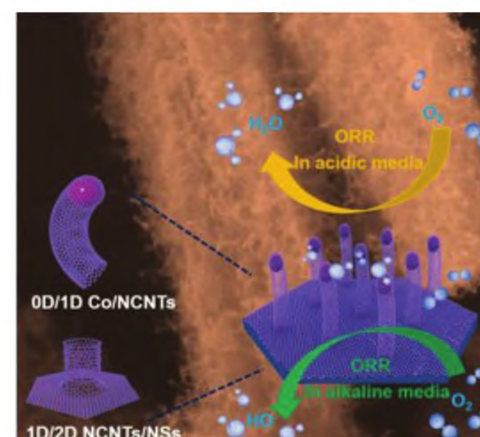
^b Tianjin Key Laboratory of Molecular Optoelectronic Sciences, Department of Chemistry, School of Sciences, Tianjin University & Collaborative Innovation Center of Chemical Science and Engineering, Tianjin 300072, China

^c School of Physics and Electronics, Hunan University, Changsha 410082, China

^d Key Laboratory of Materials Processing and Mold (Zhengzhou University), Ministry of Education, Zhengzhou University, Zhengzhou 450002, China

An effective strategy is developed for growing Co/N-doped carbon nanotube arrays on 2D MOFs-derived matrix. The constructed architecture can effectively integrate the 0D/1D Co nanoparticle/N-doped carbon nanotube interface and 1D (nanotubes)/2D (nanosheets) junction into frameworks with excellent performance towards oxygen reduction reaction in both alkaline and acidic media.

Chinese Chemical Letters 32 (2021) 816



Ion transport regulation through triblock copolymer/PET asymmetric nanochannel membrane: Model system establishment and rectification mapping

Linsen Yang^{a,b}, Pei Liu^{a,b}, Congcong Zhu^{a,b}, Yuanyuan Zhao^{a,b}, Miaomiao Yuan^c, Xiang-Yu Kong^a, Liping Wen^{a,b}, Lei Jiang^{a,b}

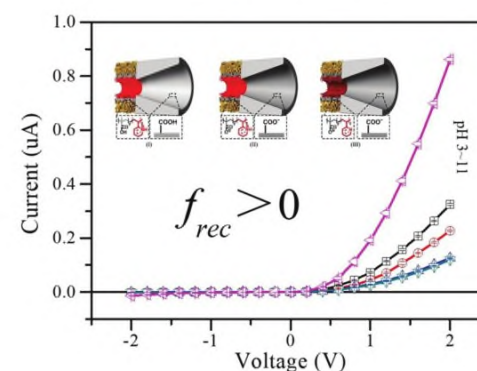
^a Key Laboratory of Bio-inspired Materials and Interfacial Science, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing 100190, China

^b School of Future Technology, University of Chinese Academy of Science, Beijing 100049, China

^c The Eighth Affiliated Hospital, Sun Yat-sen University, Shenzhen 518033, China

Based on the triblock copolymer and polyethylene terephthalate, composite membrane with unidirectional rectification in wide pH range is fabricated, which is due to the different pHresponsive group on the surface of the nanochannels. Rectification mapping is conducted by employing theoretical simulation, which is used to investigate the relations between charge distribution and ion transport.

Chinese Chemical Letters 32 (2021) 822



Surface-assembled highly flexible Na₃(VOPO₄)₂F nanocube cathode for high-rate binder-free Na-ion batteries

Bohua Deng^a, Ning Yue^a, Haoyang Dong^a, Qiuyue Gui^a, Liang Xiao^a, Jinping Liu^{a,b,c}

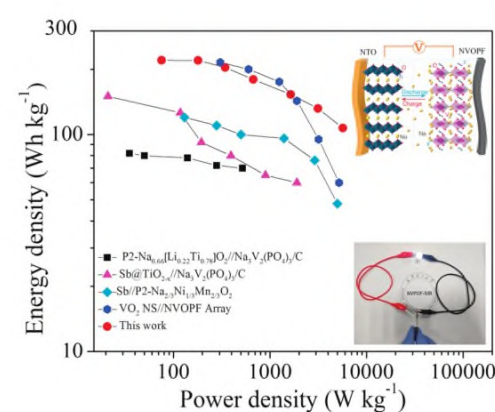
^a School of Chemistry, Chemical Engineering and Life Science, Wuhan University of Technology, Wuhan 430070, China

^b State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, Wuhan 430070, China

^c Key Laboratory for Photonic and Electronic Bandgap Materials, Ministry of Education, School of Physics and Electronic Engineering, Harbin Normal University, Harbin 150025, China

A flexible Na₃(VOPO₄)₂F nanocube cathode tightly assembled on carbon cloth is facilely fabricated for the first time, and applied to develop a high-rate fully binder-free Na-ion battery.

Chinese Chemical Letters 32 (2021) 826



Cobalt and nitrogen atoms co-doped porous carbon for advanced electrical double-layer capacitors

Aiqin Xiang^a, Shuai Xie^b, Fei Pan^c, Hongchang Jin^b, Yiheng Zhai^a, Yanwu Zhu^c, Xianghua Kong^{a,d}, Hengxing Ji^b

^a School of Chemistry and Chemical Engineering, Hefei University of Technology, Hefei 230009, China

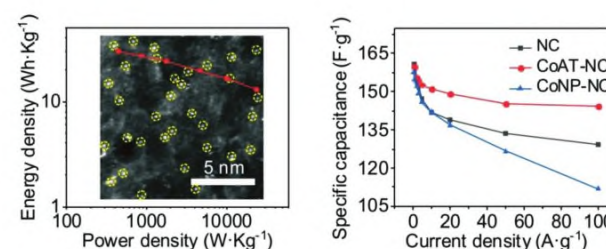
^b Hefei National Laboratory for Physical Sciences at the Microscale, CAS Key Laboratory of Materials for Energy Conversion, Department of Applied Chemistry, University of Science and Technology of China, Hefei 230026, China

^c Hefei National Laboratory for Physical Sciences at the Microscale, CAS Key Laboratory of Materials for Energy Conversion, Department of Materials Science and Engineering, University of Science and Technology of China, Hefei 230026, China

^d CAS Key Laboratory of Materials for Energy Conversion, Hefei 230026, China

Cobalt and nitrogen atoms co-doping is found capable of improving both the electrical conductivity and density of states of the carbon material, rendering an enhanced performance for electrical double-layer capacitors.

Chinese Chemical Letters 32 (2021) 830



Fabrication of high Li:water molar ratio electrolytes for lithium-ion batteries

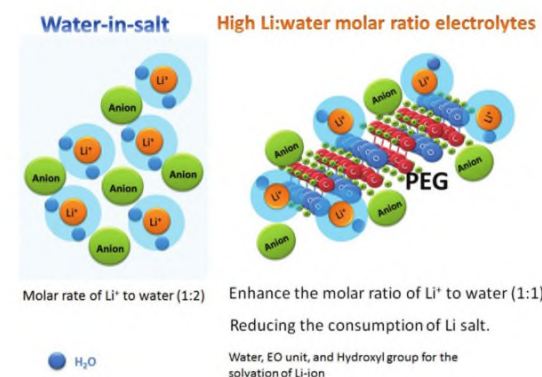
Miaofeng Huang^a, Jiajie Yang^a, Siron Zhen^a, Chubin Wan^a, Xiaoping Jiang^b, Xin Ju^a

^a University of Science and Technology Beijing, Beijing 100083, China

^b Qilu University of Technology, Shandong Academy of Sciences, Ji'nan 250014, China

High Li:water molar ratio electrolytes were prepared, and the mass fraction of Li-salt was reduced to 66%, approximately 5.5 mol/kg, based on water and PEG. A high molar ratio of Li⁺ to water (greater than 1:1) can be achieved, accompanied by the formation of SEIs and a wide potential windows of approximately 4.6 V.

Chinese Chemical Letters 32 (2021) 834



Hendecanuclear $[\text{Cu}_6\text{Gd}_5]$ magnetic cooler with high molecular symmetry of D_{3h}

Weipeng Chen^a, Guojun Zhou^b, Zhuolun Gou^a, Sen Wang^a, Yuanqi Zhai^a, Tian Han^a, Jürgen Schnack^c, Yanzhen Zheng^a

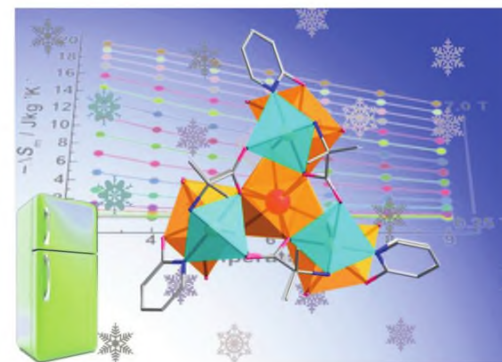
^a Shenzhen Research School and Frontier Institute of Science and Technology (FIST), State Key Laboratory for Mechanical Behavior of Materials, MOE Key Laboratory for Nonequilibrium Synthesis of Condensed Matter, Xi'an Key Laboratory of Sustainable Energy and Materials Chemistry and School of Science, Xi'an Jiaotong University, Xi'an 710054, China

^b School of Chemistry and Chemical Engineering, Shaanxi Normal University, Xi'an 710119, China

^c Faculty of Physics, Bielefeld University, D-33501 Bielefeld, PO Box 100131, Germany

A hendecanuclear 3d-4f cluster $[\text{Cu}_6\text{Gd}_5]$ with high molecular symmetry of D_{3h} displays potential application in magnetic cooling, which thanks to the weak magnetic interactions between the component metal ions.

Chinese Chemical Letters 32 (2021) 838



Facile synthesis of metal-polyphenol-formaldehyde coordination polymer colloidal nanoparticles with sub-50 nm for T1-weighted magnetic resonance imaging

Jing Qin^a, Guohai Liang^b, Bingxi Feng^a, Gen Wang^a, Na Wu^a, Yonghui Deng^c, Ahmed A. Elzatahry^d, Abdulaziz Alghamdi^e, Yongxi Zhao^a, Jing Wei^a

^a The Key Laboratory of Biomedical Information Engineering of Ministry of Education, School of Life Science and Technology, Xi'an Jiaotong University, Xi'an 710049, China

^b College of Biophotonics, South China Normal University, Guangzhou 510631, China

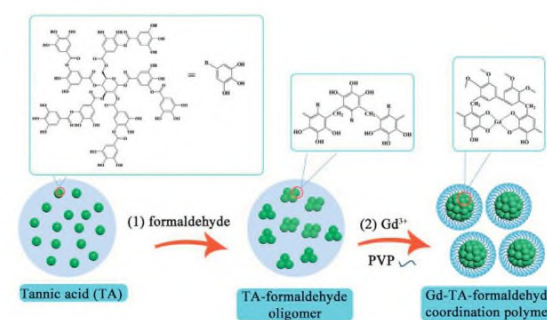
^c Department of Chemistry, Fudan University, Shanghai 200433, China

^d Materials Science and Technology Program, College of Arts and Sciences, Qatar University, PO Box 2713, Doha, Qatar

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

Metal-polyphenol-formaldehyde coordination polymers with tunable metal species and ultra-small size were successfully synthesized and used as a positive contrast agent for magnetic resonance imaging.

Chinese Chemical Letters 32 (2021) 842



Trace Nb-doped $\text{Na}_{0.7}\text{Ni}_{0.3}\text{Co}_{0.1}\text{Mn}_{0.6}\text{O}_2$ with suppressed voltage decay and enhanced low temperature performance

Ruyun Yue^a, Fang Xia^a, Ruijuan Qi^c, Da Tie^a, Shanshan Shi^{a,b}, Zhiping Li^a, Yufeng Zhao^{a,b}, Jiujun Zhan^b

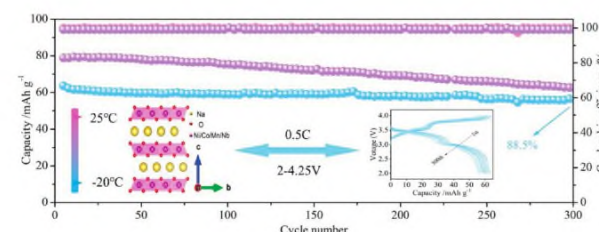
^a Key Laboratory of Applied Chemistry, Yanshan University, Qinhuangdao 066004, China

^b Institute for Sustainable Energy & College of Sciences, Shanghai University, Shanghai 200444, China

^c Key Laboratory of Polar Materials and Devices (MOE), Department of Optoelectronics, East China Normal University, Shanghai 200241, China

Nb-doped $\text{Na}_{0.7}[\text{Ni}_{0.3}\text{Co}_{0.1}\text{Mn}_{0.6}]_{0.98}\text{Nb}_{0.02}\text{O}_2$ as low-temperature cathodes for sodium ion batteries, demonstrates significantly enhanced long-term cycling ability with the efficient suppression of the voltage decay.

Chinese Chemical Letters 32 (2021) 849



CO oxidation on the heterodinuclear tantalum–nickel monoxide carbonyl complex anions

Jumei Zhang^{a,c}, Ya Li^b, Yan Bai^b, Gang Li^a, Dong Yang^a, Huijun Zheng^a, Jinghan Zou^a, Xiangtao Kong^a, Hongjun Fan^a, Zhiling Liu^b, Ling Jiang^a, Hua Xie^a

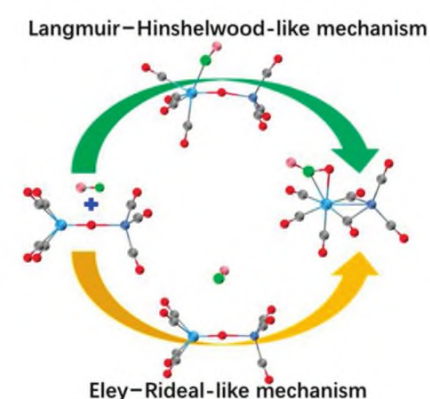
^a State Key Laboratory of Molecular Reaction Dynamics, Collaborative Innovation Center of Chemistry for Energy and Materials (iChem), Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian 116023, China

^b School of Chemical and Material Science, Key Laboratory of Magnetic Molecules & Magnetic Information Materials, Ministry of Education, Shanxi Normal University, Linfen 041004, China

^c University of Chinese Academy of Sciences, Beijing 100049, China

For the $\text{TaNiO}(\text{CO})_n^-$ series, the CO oxidation occurs at $n = 8$, and both LH-like and ER-like mechanisms become generally favorable.

Chinese Chemical Letters 32 (2021) 854



Barium charge transferred doped carbon dots with ultra-high quantum yield photoluminescence of 99.6% and applications

Yao Liu^{a,d}, Jianfei Wei^b, Xiang Yan^c, Ming Zhao^d, Chaozhong Guo^a, Quan Xu^d

^a Chongqing Key Laboratory of Materials Surface & Interface Science, College of Materials Science and Engineering, Chongqing University of Arts and Sciences, Chongqing 402160, China

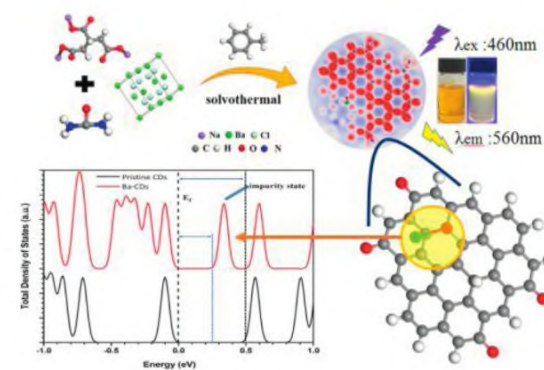
^b School of Materials Designing and Engineering, Beijing Institute of Fashion Technology, Beijing 100029, China

^c School of Materials Science and Engineering, Baise University, Baise 533000, China

^d State Key Laboratory of Heavy Oil Processing, Beijing Key Laboratory of Biogas Upgrading Utilization, China University of Petroleum-Beijing, Beijing 102249, China

Barium doped carbon dots (Ba-CDs) with high quantum yield yellow fluorescence emission up to 99.6% were fabricated and demonstrated as promising fluorescent sensors for trace water in organic solvents, indicating their great potential as a fluorescent probe for chemical sensing.

Chinese Chemical Letters 32 (2021) 861



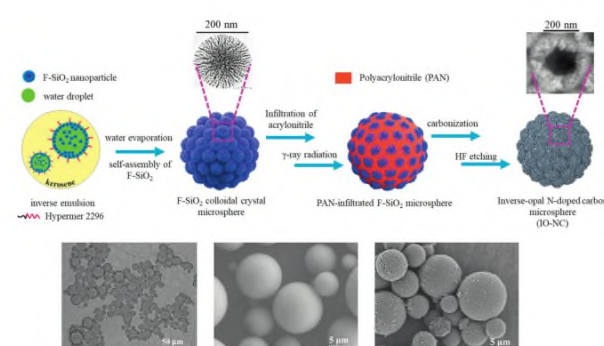
Preparation and adsorption property of novel inverse-opal hierarchical porous N-doped carbon microspheres

Wenxiu Yang, Guoqing Xu, Jingjing Shu, Mozhen Wang, Xuewu Ge

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

Novel micron-sized inverse-opal N-doped carbon microspheres consisting of hollow carbon nanoparticles with a hierarchical macro/meso-porous inner surface were successfully prepared by using new-type colloidal crystal microspheres consisting of fibrous silica nanoparticles as sacrificial templates.

Chinese Chemical Letters 32 (2021) 866



Dependence of electromagnetic wave absorption properties on the topography of Ni anchoring on reduced graphene oxide

Luyang Liang^a, Zhaoyang Li^a, Zhongyi Bai^b, Yuezhan Feng^a, Xiaoqin Guo^b, Jianmin Ma^c, Chuntai Liu^a

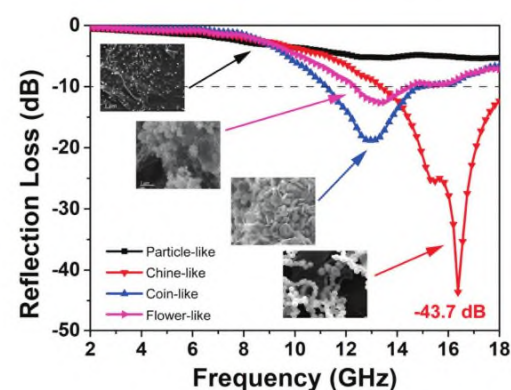
^a Key Laboratory of Advanced Materials Processing & Mold, Ministry of Education, National Engineering Research Center for Advanced Polymer Processing Technology, Zhengzhou University, Zhengzhou 450002, China

^b Henan Key Laboratory of Aeronautical Materials and Application Technology, School of Material Science and Engineering, Zhengzhou University of Aeronautics, Zhengzhou 450046, China

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The electromagnetic wave absorption (EMA) performance of Ni/rGO composites revealed a strong dependence on the morphology of anchoring Ni. In particular, chain-like Ni/rGO exhibited the best EMA effect due to its excellent magnetic anisotropy and impedance matching.

Chinese Chemical Letters 32 (2021) 870



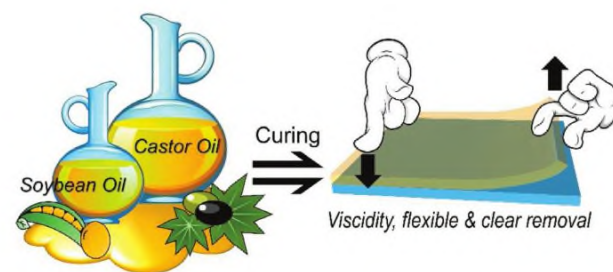
Bio-based removable pressure-sensitive adhesives derived from carboxyl-terminated polyricinoleate and epoxidized soybean oil

Yu-Fei Lei, Xiao-Lin Wang, Bo-Wen Liu, Li Chen, 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

Fully bio-based pressure sensitive adhesives (PSA) were prepared from two plant oils. Adhesive properties of PSA could be tailored by adjusting the component ratio and the viscoelastic behavior thereof.

Chinese Chemical Letters 32 (2021) 875



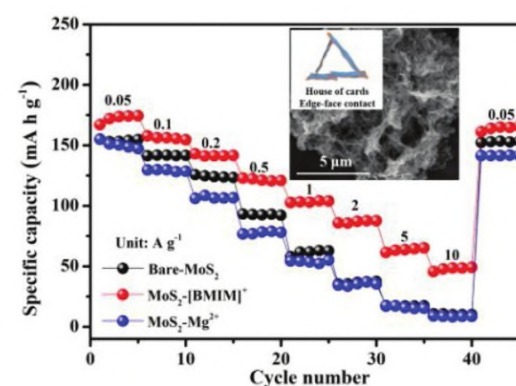
Morphology mediation of MoS₂ nanosheets with organic cations for fast sodium ion storage

Jinjin Li, Congcong Liu, Jingjiang Wei, Yuantao Yan, Xiaoli Zhao, Xiaowei Yang

School of Materials Science and Engineering, Tongji University, Shanghai 201804, China

The morphology mediation of MoS₂ nanosheets via a facile coagulation method is firstly reported. The abundant sheet crumples were induced, which greatly enhance their surface accessibility and thus benefit the Na-ion diffusion kinetics. Importantly, the special role of organic cations in the inter-sheet assembly configuration was demonstrated, in sharp contrast with that of alkali/alkaline-earth ones.

Chinese Chemical Letters 32 (2021) 880



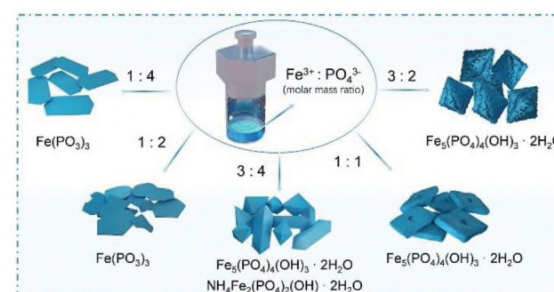
Fe-based phosphate nanostructures for supercapacitors

Bing Li, Huan Pang, Huaiguo Xue

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

Fe-based phosphates with different dimensions, morphologies, and compositions were successfully synthesized by one-step hydrothermal method. Among them, the 2D Fe(PO₃)₃ is a promising electrode material for supercapacitors.

Chinese Chemical Letters 32 (2021) 885



Polyacrylonitrile-based gel polymer electrolyte filled with Prussian blue for high-performance lithium polymer batteries

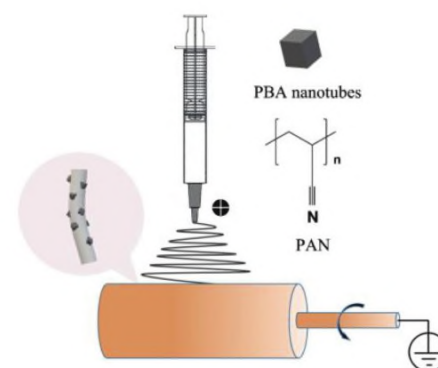
Xietao Yuan^{a,b}, Amir Abdul Razzaq^{a,b}, Yujie Chen^{a,b}, Yuebin Lian^{a,b}, Xiaohui Zhao^{a,b}, Yang Peng^{a,b}, Zhao Deng^{a,b}

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^b Jiangsu Provincial Key Laboratory for Advanced Carbon Materials and Wearable Energy Technologies, Soochow University, Suzhou 215006, China

The gel polymer electrolyte based on polyacrylonitrile filled with Prussian blue promoted the cycle performance and life-span of lithium polymer batteries.

Chinese Chemical Letters 32 (2021) 890



Large-scale Ni-MOF derived Ni₃S₂ nanocrystals embedded in N-doped porous carbon nanoparticles for high-rate Na⁺ storage

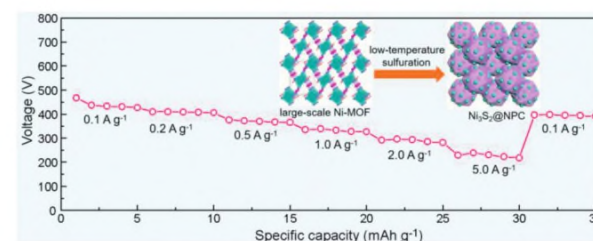
Miao Yang^a, Qiuli Ning^a, Chaoying Fan^b, Xinglong Wu^{a,b}

^a National & Local United Engineering Lab for Power Battery, Department of Chemistry, Northeast Normal University, Changchun 130024, China

^b Key Laboratory for UV Light-Emitting Materials and Technology of Ministry of Education, Northeast Normal University, Changchun 130024, China

The ultrasmall Ni₃S₂ nanocrystals embedded into N-doped porous carbon nanoparticles are prepared using the scalable Ni-MOF as precursor to exhibit high-rate Na⁺ storage. This study provides a scalable and universal strategy to develop the advanced transition metal sulfides for practically feasible sodium-ion batteries.

Chinese Chemical Letters 32 (2021) 895



First-principles calculations of stability of graphene-like BC₃ monolayer and its high-performance potassium storage

Lijie Zhao^a, Yi Li^b, Guangyao Zhou^a, Shulai Lei^c, Jinli Tan^a, Liangxu Lin^d, Jiajun Wang^a

^a Tianjin Key Laboratory of Structure and Performance for Functional Molecules, College of Chemistry, Tianjin Normal University, Tianjin 300387, China

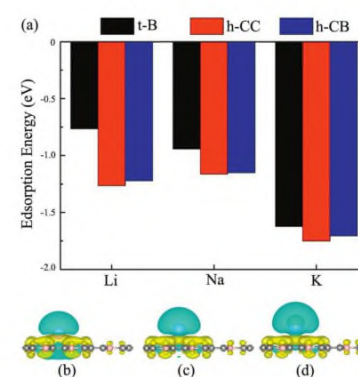
^b Key Laboratory of Computer Vision and Systems (Ministry of Education), School of Computer Science and Engineering, Tianjin University of Technology, Tianjin 300384, China

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

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

Based on first-principles calculations, we propose that graphene-like BC₃ monolayer is a high-performance anode material for potassium ion batteries with stable adsorption of potassium atom at h-CC sites of the BC₃ monolayer due to charge transfer. Yellow and cyan colors represent charge accumulation and depletion, respectively.

Chinese Chemical Letters 32 (2021) 900



Ratiometric fluorescence detection of bleomycin based on proximity-dependent fluorescence conversion of DNA-templated silver nanoclusters

Lingyuan Liu^a, Shuyun Zhu^a, Jing Sun^b, Meng Xia^a, Xian'en Zhao^a, Guobao Xu^c

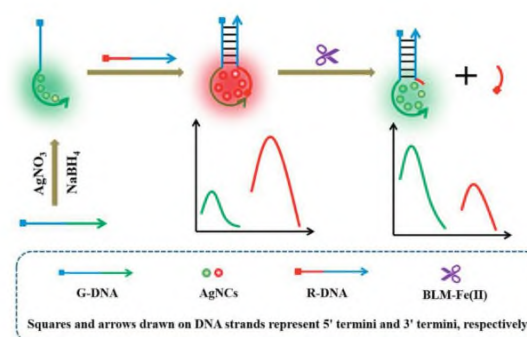
^a College of Chemistry and Chemical Engineering, Qufu Normal University, Qufu 273165, China

^b Qinghai Key Laboratory of Qinghai-Tibet Plateau Biological Resources, Northwest Institute of Plateau Biology, Chinese Academy of Sciences, Xining 810001, China

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

A novel ratiometric strategy was designed for sensitive detection of BLM with proximity-dependent fluorescence transformation of DNA-AgNCs via DNA scission for the first time.

Chinese Chemical Letters 32 (2021) 906



Rational design of robust nano-Si/graphite nanocomposites anodes with strong interfacial adhesion for high-performance lithium-ion batteries

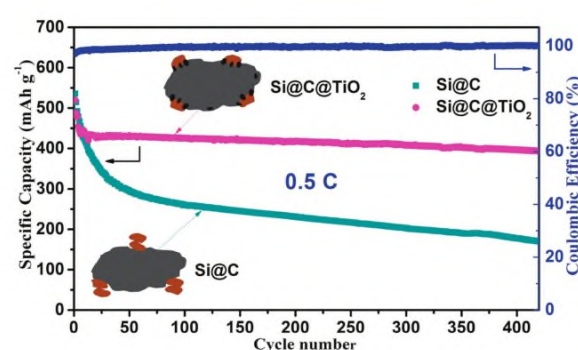
Yuantao Yan^{a,b}, Xiaoli Zhao^a, Huanglin Dou^a, Jingjiang Wei^a, Wanyu Zhao^a, Zhihua Sun^b, Xiaowei Yang^a

^a School of Materials Science and Engineering, Tongji University, Shanghai 200123, China

^b School of Materials Science and Engineering, Chang'an University, Xi'an 710064, China

A robust nano-Si/graphite nanocomposite with strong and durable interfacial adhesion was rationally designed. The abundant Si-Ti and Ti-C covalent bonds leads to greatly improved interfacial adhesion between nano-Si and graphite, and thus a highly stabilized electrode structure and good cycling stability.

Chinese Chemical Letters 32 (2021) 910



Nitrogen-doped holey graphene nanoscrolls for high-energy and high-power supercapacitors

Feng Su^{a,b}, Shuanghao Zheng^a, Fangyan Liu^a, Xiong Zhang^{c,e}, Fangyuan Su^{d,e}, Zhong-Shuai Wu^a

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

^b University of Chinese Academy of Sciences, Beijing 100049, China

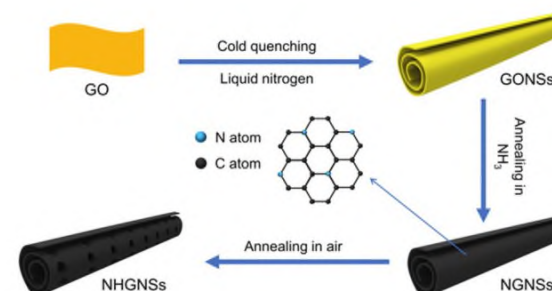
^c Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing 100190, China

^d CAS Key Laboratory of Carbon Materials, Institute of Coal Chemistry, Chinese Academy of Sciences, Taiyuan 030001, China

^e Dalian National Laboratory for Clean Energy, Chinese Academy of Sciences, Dalian 116023, China

Nitrogen-doped holey nanoscrolls are developed for supercapacitors with significantly improved electrochemical performance due to the synergy of one-dimensional tubular structure, heteroatom doping and abundant nanoholes.

Chinese Chemical Letters 32 (2021) 914



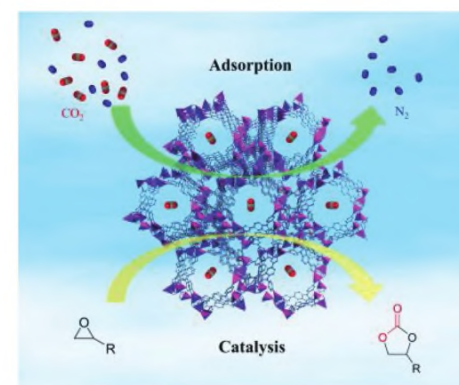
A stable Co(II)-based metal-organic framework with dual-functional pyrazolate-carboxylate ligand: Construction and CO₂ selective adsorption and fixation

Guangrui Si, Xiangjing Kong, Tao He, Wei Wu, Linhua Xie, Jianrong Li

Beijing Key Laboratory for Green Catalysis and Separation and Department of Environmental Chemical Engineering, Beijing University of Technology, Beijing 100124, China

A stable Co(II)-based MOF has been constructed through using a unique dual-functional pyrazolate-carboxylate ligand. It presents a high selective CO₂ adsorption capacity over N₂ and fine catalytic performance for the cycloaddition of CO₂ with epoxides into cyclic carbonates.

Chinese Chemical Letters 32 (2021) 918



Assembly and packing models of [Ti₆Co₁₂] ring based on the titanium-capped cobalt clathrochelates

Hao Fu^{a,b,c}, Shuyu Zhou^{a,b,c}, Xi Fan^a, Lei Zhang^a, Jian Zhang^a

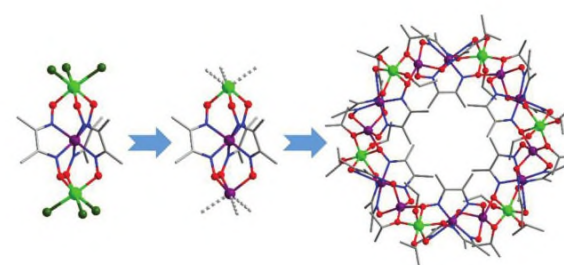
^a State Key Laboratory of Structural Chemistry, Fujian Institute of Research on the Structure of Matter, Chinese Academy of Sciences, Fuzhou 350002, China

^b School of Physical Science and Technology, Shanghai Tech University, Shanghai 201210, China

^c University of Chinese Academy of Sciences, Beijing 100049, China

A hexameric [Ti₆Co₁₂] ring has been assembled through Ti-capped cobalt(II) clathrochelates.

Chinese Chemical Letters 32 (2021) 923



An aqueous zinc-ion hybrid super-capacitor for achieving ultrahigh-volumetric energy density

Li Zhang^{a,b}, Dandan Wu^{a,b}, Gaowei Wang^{a,b}, Yongtai Xu^{b,c}, Hongxia Li^d, Xingbin Yan^{b,e}

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^b Laboratory of Clean Energy Chemistry and Materials, State Key Laboratory of Solid Lubrication, Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, Lanzhou 730000, China

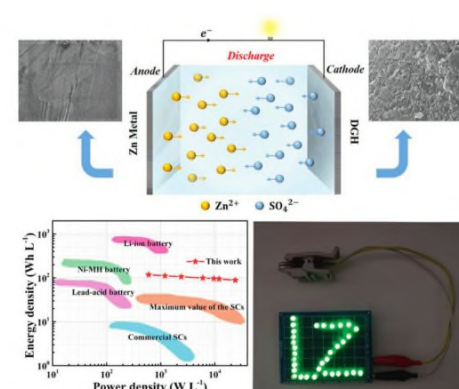
^c Center of Materials Science and Optoelectronics Engineering, University of Chinese Academy of Sciences, Beijing 100080, China

^d School of Petrochemical Engineering, Lanzhou University of Technology, Lanzhou 730050, China

^e Dalian National Laboratory for Clean Energy, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian 116000, China

In this study, we demonstrated the zinc-ion hybrid super-capacitor with high volumetric energy density and superb cycle stability employing the high-density porous carbon material as cathode and Zn metal directly used as anode in 1 mol/L ZnSO₄ electrolyte.

Chinese Chemical Letters 32 (2021) 926



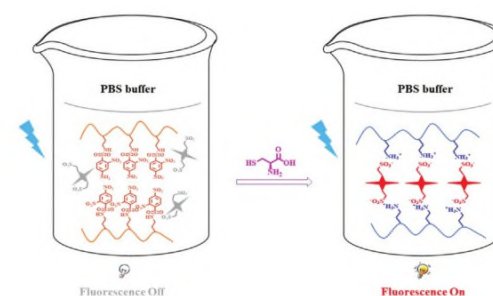
Design of activatable red-emissive assay for cysteine detection in aqueous medium with aggregation induced emission characteristics

Bing Wu, Tianhao Xue, Yaning He

Department of Chemical Engineering, Key Laboratory of Advanced Materials (MOE), Tsinghua University, Beijing 100084, China

An activatable AIE fluorescence probe for cysteine (Cys) *in situ* with red fluorescence in aqueous medium was prepared with low detection limit as well as large Stokes Shift. It was easy to discriminatively detect Cys from common biothiols and amino acids with double responses in fluorescence and ultraviolet-visible spectra with excellent selectivity and sensitivity.

Chinese Chemical Letters 32 (2021) 932



Copper-cobalt-nickel oxide nanowire arrays on copper foams as self-standing anode materials for lithium ion batteries

Xiaomin Kang^a, Guodong Fu^a, Xuewan Wang^a, Lin Shao^{a,b}, Weili Li^{a,b}, Chi-Wing Tsang^c, Xiao-Ying Lu^c, Xian-Zhu Fu^a, Jing-Li Luo^{a,d}

^a Shenzhen Key Laboratory of Polymer Science and Technology, Guangdong Research Center for Interfacial Engineering of Functional Materials, College of Materials Science and Engineering, Shenzhen University, Shenzhen 518060, China

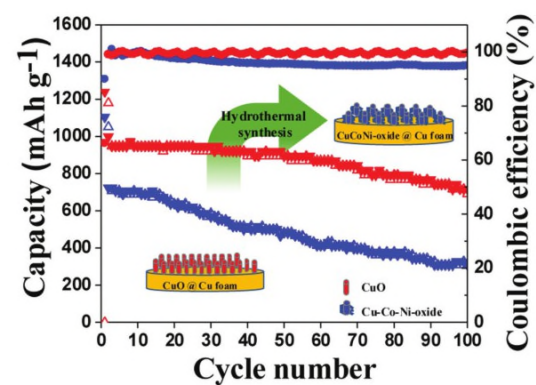
^b Key Laboratory of Optoelectronic Devices and Systems of Ministry of Education and Guangdong Province, College of Optoelectronic Engineering, Shenzhen University, Shenzhen 518060, China

^c Faculty of Science and Technology, Technological and Higher Education Institute of Hong Kong, Hong Kong, China

^d Department of Chemical and Materials Engineering, University of Alberta, Edmonton, Alberta, T6G 1H9, Canada

A hyperbranched, hierarchical copper-cobalt-nickel ternary oxide (CuCoNi-oxide) nanowire arrays were successfully fabricated as self-standing anode materials for lithium ion batteries (LIBs) by a facile hydrothermal synthesis method and it exhibited improved electrochemical performance compared to that of CuO nanowire anode.

Chinese Chemical Letters 32 (2021) 938



Quantitative assessment of rhodamine spectra

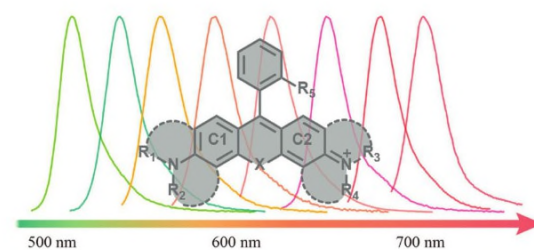
Wei Zhou^{a,b}, Xiangning Fang^a, Qinglong Qiao^a, Wenchao Jiang^a, Yue Zhang^a, Zhaochao Xu^{a,b}

^a CAS Key Laboratory of Separation Science for Analytical Chemistry, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian 116023, China

^b Zhang Dayu School of Chemistry, Dalian University of Technology, Dalian 116012, China

The absorption and fluorescence spectra of 15 rhodamine dyes covering the visible to near-infrared regions were tested under exactly the same conditions. Then accurate and comparable data obtained were expected to be used as references for future research and help to understand the structure-fluorescence relationship of rhodamines.

Chinese Chemical Letters 32 (2021) 943



Erratum regarding updated pagination in previously published articles

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Chinese Chemical Letters (中国化学快报)

Responsible Institution: China Association for Science and Technology
Sponsor: Chinese Chemical Society
Institute of Materia Medica, Chinese Academy of Medical Sciences
Editor-in-Chief: Xuhong Qian
Address: Institute of Materia Medica, Chinese Academy of Medical Sciences
1 Xian Nong Tan Street, Beijing 100050, China
Tel: 86-10-63165638
E-mail: cclbj@imm.ac.cn
Website: www.chinchemlett.com.cn
Online Submission: www.ees.elsevier.com/cclet
Publisher: Editorial Office of Chinese Chemical Letters
ELSEVIER B.V.
Printer: Beijing Kexin Printing Co., Ltd.
Date: 15 February 2021

国内发行: 全国各地邮局

邮发代号: 2-915

定价: 50元/本; 600元/年

Available online at www.sciencedirect.com

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ISSN 1001-8417

