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Chinese Chemical Letters (中国化学快报)

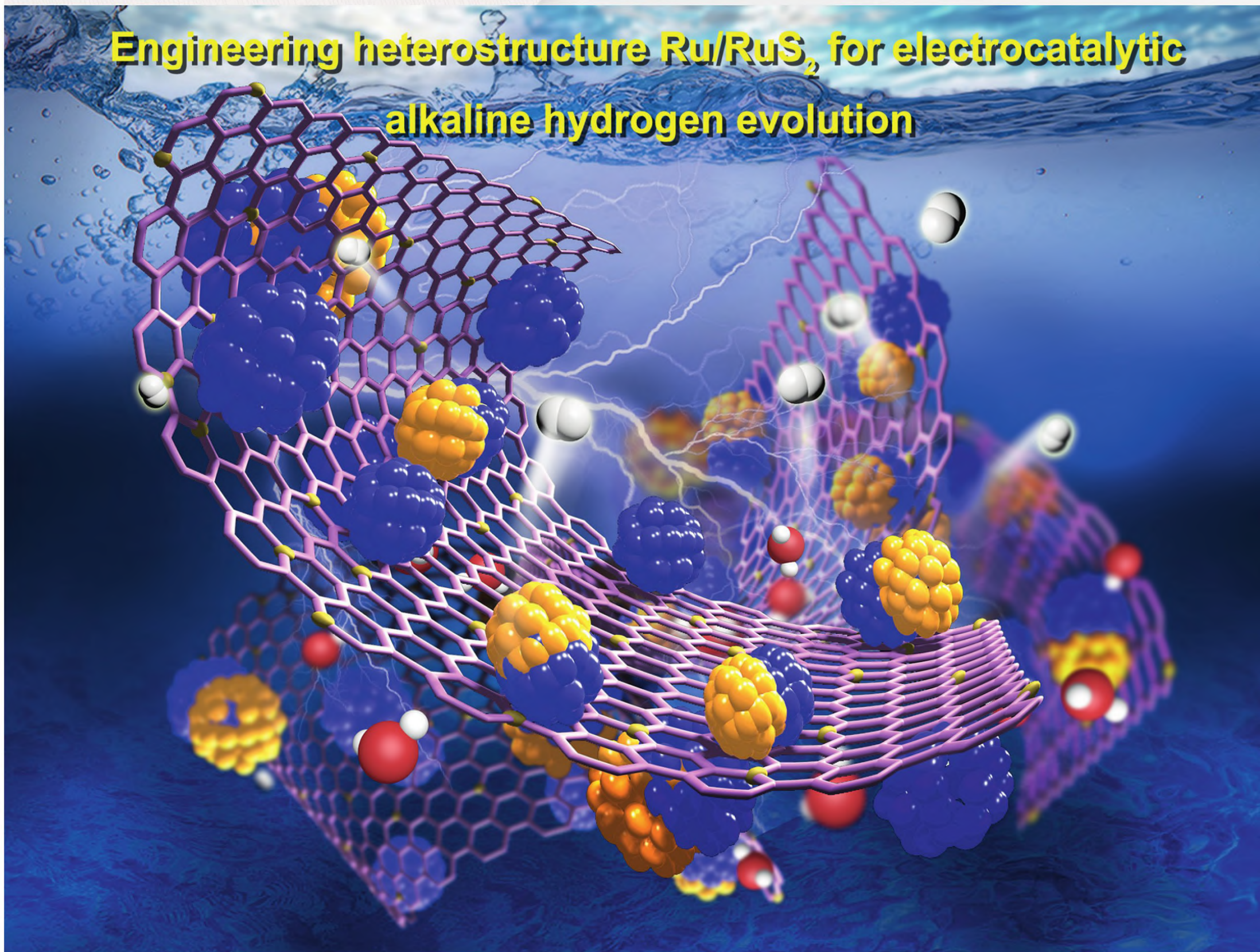
| Volume 32 | Number 11 | NOVEMBER 2021 |

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Engineering heterostructure Ru/RuS₂ for electrocatalytic alkaline hydrogen evolution



COMMUNICATION

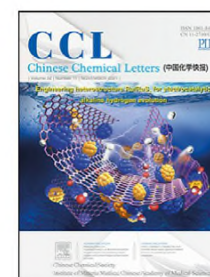
Hongying Zhao, et al.
A general strategy *via* photoelectrocatalytic oxygen reduction for generating singlet oxygen with carbon bridged carbon-nitride electrode

COMMUNICATION

Yali Li, Junshuai Li, Xingbin Yan, et al.
Flexible lithium metal capacitors enabled by an *in situ* prepared gel polymer electrolyte

Chinese Chemical Society

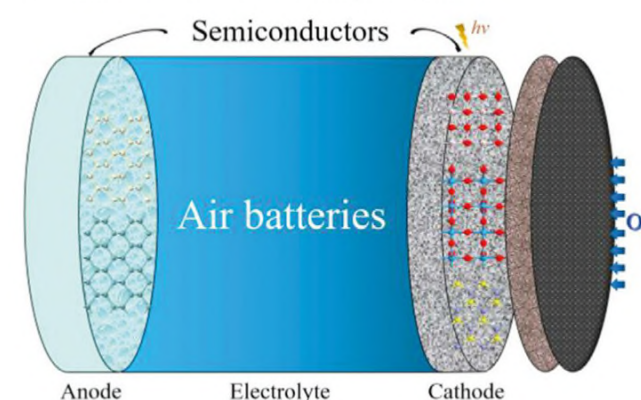
Institute of Materia Medica, Chinese Academy of Medical Sciences



Recent advances in BiOBr-based photocatalysts for environmental remediation

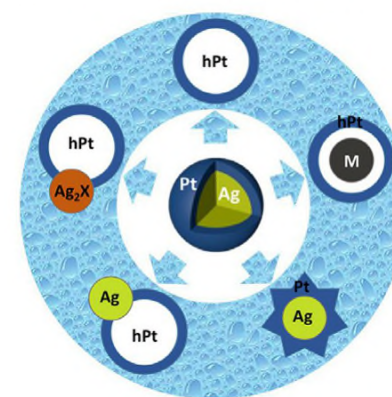
The synthesis, efficient strategies for promoting photoactivity and application in environmental remediation of BiOBr-based photocatalysts were reviewed and discussed.

Chinese Chemical Letters 32 (2022) 3277



The synthesis of heterogeneous nanostructures using core-shell Ag-Pt nanoparticles as starting materials and their electrocatalytic applications are reviewed.

Chinese Chemical Letters 32 (2022) 3288



Omniphobic membranes for distillation: Opportunities and challenges

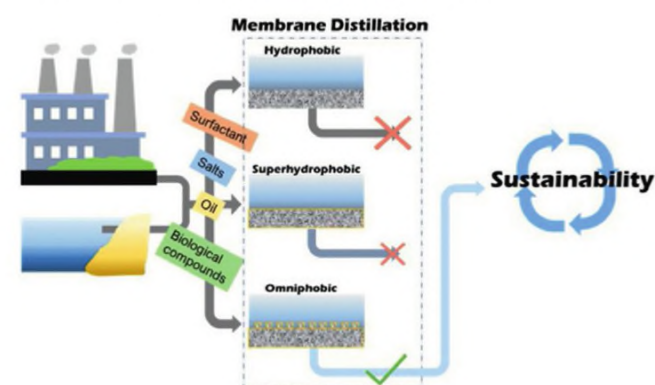
Tianlong Ni^a, Jiuyang Lin^b, Lingxue Kong^a, Shuaifei Zhao^a

^a Deakin University, Institute for Frontier Materials (IFM), Geelong, VIC 3216, Australia

^b School of Environment and Resources, Fuzhou University, Fuzhou 350116, China

Compared with super/hydrophobic membranes, omniphobic membranes have superior anti-wetting and anti-fouling properties and thus can achieve better separation performance by membrane distillation for sustainable desalination and water treatment.

Chinese Chemical Letters 32 (2022) 3298



Metal-organic framework nanosheets and their composites for heterogeneous thermal catalysis: Recent progresses and challenges

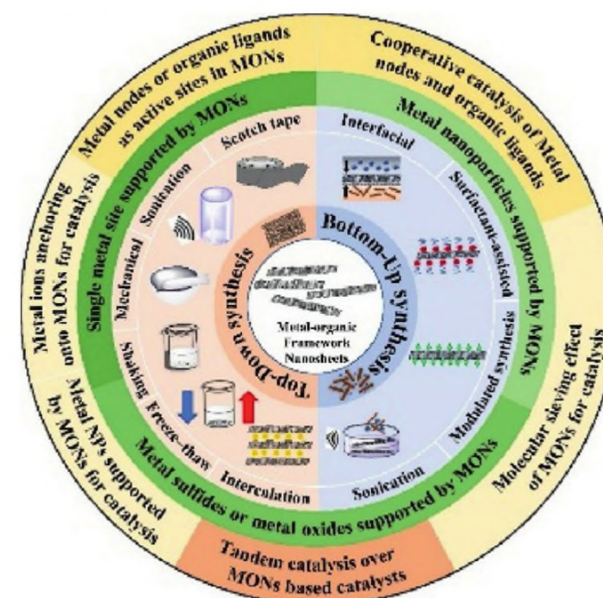
Chengqian Cui^{a,b}, Guodong Li^{a,b}, Zhiyong Tang^{a,b}

^a CAS Key Laboratory of Nanosystem and Hierarchical Fabrication, CAS Center for Excellence in Nanoscience, National Center for Nanoscience and Technology, Beijing 100190, China

^b School of Nanoscience and Technology, University of Chinese Academy of Sciences, Beijing 100049, China

Metal-organic framework nanosheets (MONs) have been attracting a lot of research interest because of its unique two-dimensional features, rich exposed and unsaturated metal nodes, adjustable organic ligands and widely catalytic applications. This review summarizes the recent progress on synthesis of MONs via top-down and bottom-up strategies, as well as their diverse composites for heterogeneous thermal catalysis.

Chinese Chemical Letters 32 (2022) 3307



Rim-differentiated pillar[5]arenes

Lintao Wu^a, Chun Han^a, Xiaobi Jing^c, Yong Yao^b

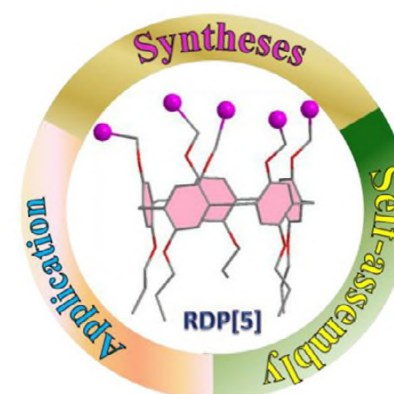
^a Department of Chemistry, Changzhi University, Changzhi 046011, China

^b School of Chemistry and Chemical Engineering, Nantong University, Nantong 226019, China

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

The synthetic methods, host-guest interactions, self-assembly properties and applications of rim-differentiated pillar[5]arenes are systematically summarized in this review.

Chinese Chemical Letters 32 (2022) 3322



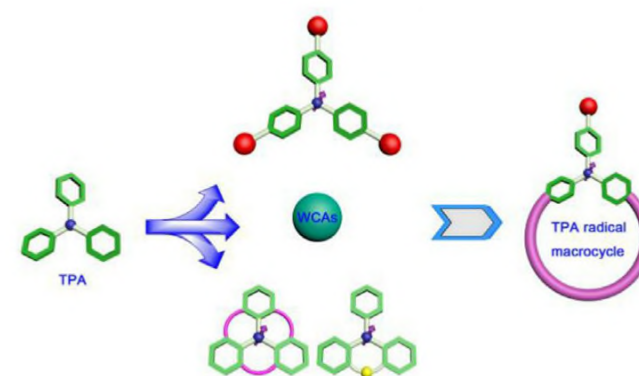
Triphenylamine (TPA) radical cations and related macrocycles

Lijun Mao, Manfei Zhou, Xueliang Shi, Hai-Bo Yang

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

This review summarizes the design, preparation, characterization, and the potential application of triphenylamine radical cations and related macrocycles.

Chinese Chemical Letters 32 (2022) 3331



Fluorine-containing pharmaceuticals approved by the FDA in 2020: Synthesis and biological activity

Yingjie Yu^a, Aiyao Liu^a, Gagan Dhawan^b, Haibo Mei^a, Wei Zhang^c, Kunisuke Izawa^d, Vadim A. Soloshonok^{e,f}, Jianlin Han^a

^a Jiangsu Co-Innovation Center of Efficient Processing and Utilization of Forest Resources, International Innovation Center for Forest Chemicals and Materials, College of Chemical Engineering, Nanjing Forestry University, Nanjing 210037, China

^b Department of Biomedical Science, Acharya Narendra Dev College, University of Delhi, India

^c Department of Chemistry, University of Massachusetts Boston, 100 Morrissey Boulevard, Boston, MA 02125, United States

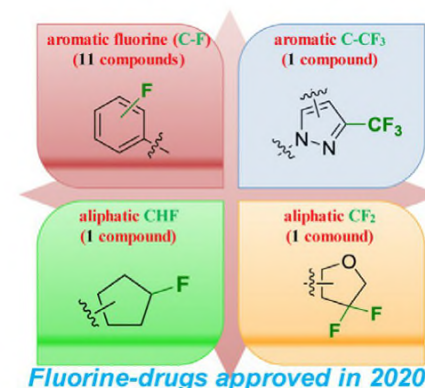
^d Hamari Chemical Ltd., 1-4-29 Kunijima, Higashi-Yodogawa-ku, Osaka 533-0024, Japan

^e Department of Organic Chemistry I, Faculty of Chemistry, University of the Basque Country UPV/EHU, Paseo Manuel Lardizabal 3, 20018 San Sebastian, Spain

^f IKERBASQUE, Basque Foundation for Science, Maria Diaz de Haro 3, Plaza Bizkaia, 48013 Bilbao, Spain

This review profiles thirteen new fluorine-containing drugs approved by US FDA in 2020. For each compound, biological activity and synthetic route are discussed.

Chinese Chemical Letters 32 (2022) 3342



Phosphating-induced charge transfer on CoO/CoP interface for alkaline H₂ evolution

Qian Li^{a,b}, Yuchao Wang^{a,b}, Jian Zeng^{a,c}, Qiumei Wu^a, Qichen Wang^{a,d}, Lian Sun^a, Liang Xu^c, Tong Ye^{a,e}, Xin Zhao^a, Lei Chen^a, Zhiyan Chen^b, Limiao Chen^d, Yongpeng Lei^{a,d}

^a State Key Laboratory of Powder Metallurgy, Central South University, Changsha 410083, China

^b School of Material Science and Engineering, Central South University of Forestry and Technology, Changsha 410004, China

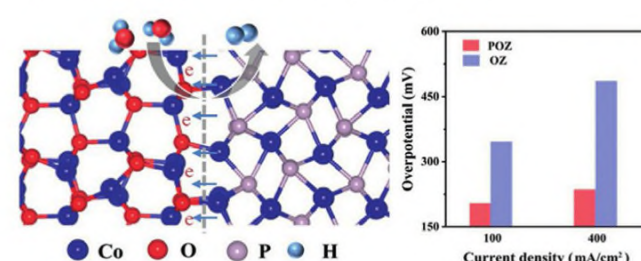
^c Energy Materials Computing Center, Jiangxi University of Science and Technology, Nanchang 330013, China

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

^e School of Material and Chemical Engineering, Xi'an Technological University, Xi'an 710021, China

CoO/CoP heterostructure catalyst (POZ) was synthesized by a phosphating strategy, which showed a low overpotential of 236 mV to drive a current density of 400 mA/cm² in alkaline electrolyte. As proved by experimental results and DFT calculations, the strong electron transfer on the CoO/CoP interface endowed good HER performance.

Chinese Chemical Letters 32 (2022) 3355



New insight into the effect of interface supercapacitance on the performance of titanium dioxide/carbon nanowire array for photoelectrochemical water oxidation

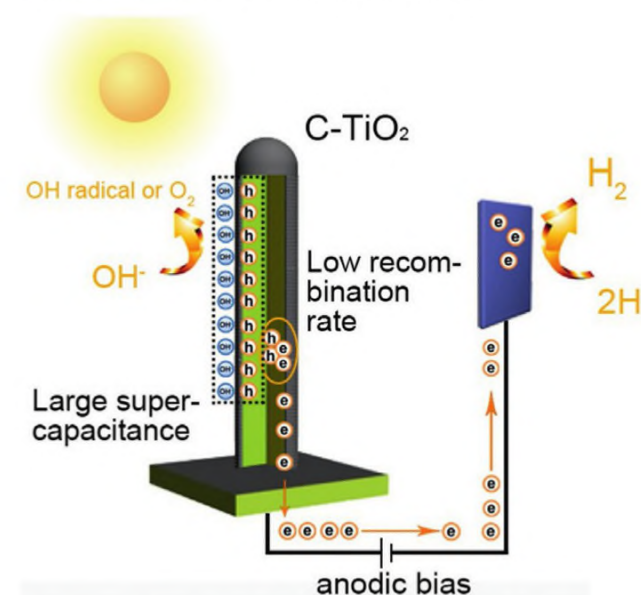
Zhuofeng Hu^a, Weiqing Guo^b

^a School of Environmental Science and Engineering, Guangdong Provincial Key Laboratory of Environmental Pollution Control and Remediation Technology, Sun Yat-sen University, Guangzhou 510006, China

^b School of Environmental and Chemical Engineering, Foshan University, Foshan 528000, China

The supercapacitor on the interface is crucial because it links the charge transport and solution ion adsorption on its two sides. High supercapacitor enhances the separation rate of electron-hole pairs by collecting more holes, and promotes the water oxidation rate by adsorbing more OH⁻ on its surface.

Chinese Chemical Letters 32 (2022) 3359



Highly responsive biosensors based on organic field-effect transistors under light irradiation

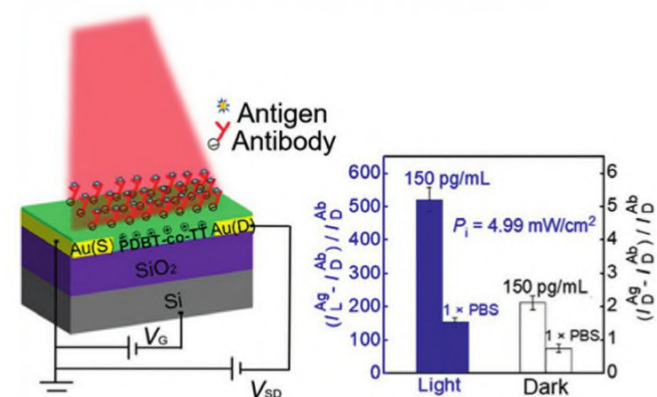
Xiaoqian Jiang^a, Chenfang Sun^a, Congcong Zhang^b, Shanshan Cheng^a

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

^b Institute for Advanced Interdisciplinary Research, University of Jinan, Ji'nan 250011, China

A biosensor constructed by organic field-effect transistor (OFET) with conjugated polymer under light irradiation exhibits higher responsivity and sensitivity for disease marker detection.

Chinese Chemical Letters 32 (2022) 3364



In situ growth of polydopamine on surface of covalent organic frameworks under the catalysis of acid phosphatase for dopamine detection

Fei Qu^{a,b}, Ziwei Guo^{a,b}, Dafeng Jiang^c, Xian-En Zhao^{a,b}

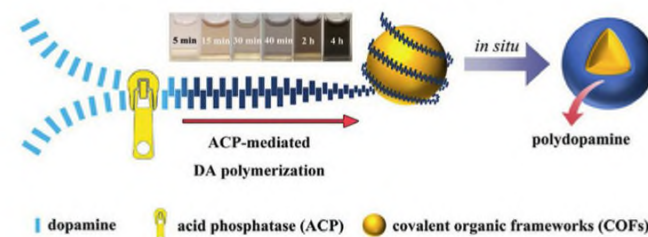
^a The Key Laboratory of Life-Organic Analysis, Qufu Normal University, Qufu 273165, China

^b The Key Laboratory of Pharmaceutical Intermediates and Analysis of Natural Medicine, Qufu Normal University, Qufu 273165, China

^c Department of Physical and Chemical Testing, Shandong Center for Disease Control and Prevention, Ji'nan 250014, China

Dopamine (DA) is catalyzed by acid phosphatase to polymerize into polydopamine which quenches the fluorescence of covalent organic frameworks. This strategy shortens the time greatly for the polymerization of DA and realizes the selective detection of DA.

Chinese Chemical Letters 32 (2022) 3368



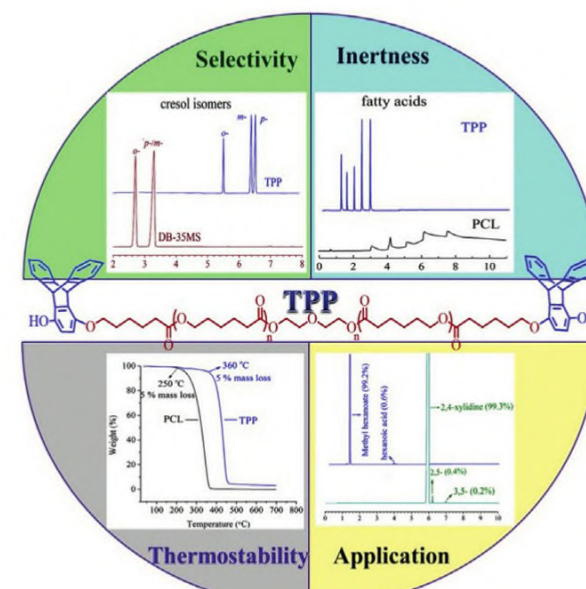
A novel triptycene-terminated polymer used as the gas chromatographic stationary phase towards organic acidic/basic analytes and isomers

Yongrui He, Tiantian Shi, Meiling Qi

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

This work presents a novel strategy for engineering a GC stationary phase with high selectivity, inertness and thermal stability by introducing the 3D TP moieties to the terminals of the polar chain polymer.

Chinese Chemical Letters 32 (2022) 3372



Significantly influenced photocatalytic performance for H₂O₂ generation over ultrathin g-C₃N₄ through regulating the migration orientation of photogenerated charge carriers

Xinxia He^a, Hongyan Shang^{a,b}, Chuan Wang^a, Le Chen^a, Zehan Gong^a, Jun Wang^c, Shilin Zhao^b, Jun Ma^{a,b}

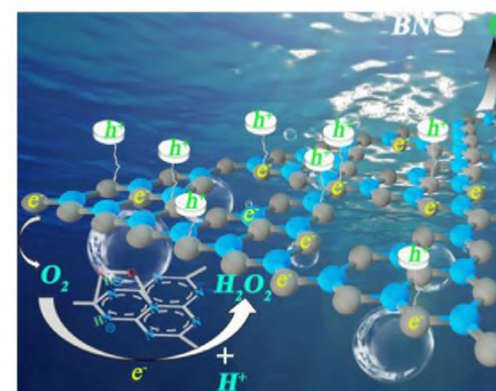
^a College of Chemistry and Materials Science, Sichuan Normal University, Chengdu 610068, China

^b Key Laboratory of Land Resources Evaluation and Monitoring in Southwest, Ministry of Education of China, Chengdu 610066, China

^c State Key Laboratory of Environmental-Friendly Energy Materials, School of Materials Science and Engineering, Southwest University of Science and Technology, Mianyang 621010, China

Schematic diagram of the possible promotion mechanism for BN modified UCN, in which BN adhered on the surface of UCN can effectively attract photo-formed holes, thereby enhancing charge separation efficiency and forming more 1,4-endoxide in the triazine structure.

Chinese Chemical Letters 32 (2022) 3377



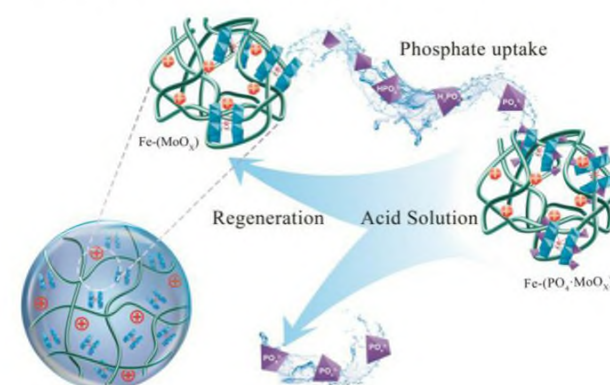
Renewable molybdate complexes encapsulated in anion exchange resin for selective and durable removal of phosphate

Wei Zhu, Xiaohua Huang, Yi Zhang, Zhonglong Yin, Zhen Yang, Weiben Yang

School of Chemistry and Materials Science, Jiangsu Provincial Key Laboratory of Materials Cycling and Pollution Control, Nanjing Normal University, Nanjing 210046, China

In this work, molybdate complexes are integrated in confined pores of anion exchange resin to fabricate composite adsorbent. The resulting adsorbent exhibits robust selectivity on the adsorption of phosphate, as well as notable excellence in regeneration via MoO_x structures transformation in acid solution.

Chinese Chemical Letters 32 (2022) 3382



Ferric ion-ascorbic acid complex catalyzed calcium peroxide for organic wastewater treatment: Optimized by response surface method

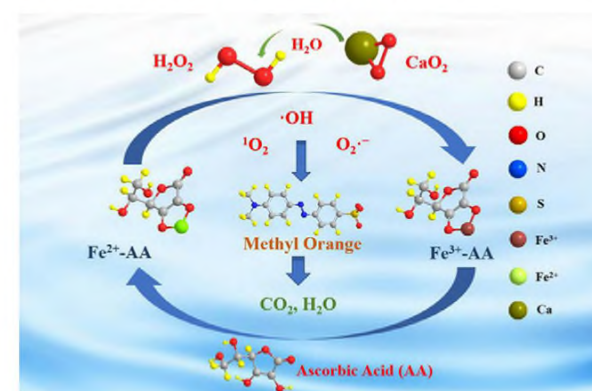
Deling Yuan^{a,b}, Chen Zhang^a, Shoufeng Tang^{a,b}, Zetao Wang^a, Qina Sun^a, Xiaoyu Zhang^a, Tifeng Jiao^{a,b}, Qingrui Zhang^{a,b}

^a Hebei Key Laboratory of Heavy Metal Deep-Remediation in Water and Resource Reuse, Hebei Key Laboratory of Applied Chemistry, School of Environmental and Chemical Engineering, Yanshan University, Qinhuangdao 066004, China

^b State Key Laboratory of Metastable Materials Science and Technology, Yanshan University, Qinhuangdao 066004, China

A ferric ion (Fe^{3+})-ascorbic acid (AA) complex catalyzed calcium peroxide (CaO_2) Fenton-like system was proposed to remove organic dyes in water, which could surmount the drawbacks of traditional Fenton process, such as hydrogen peroxide (H_2O_2) disproportionation, iron precipitation, and narrow pH range.

Chinese Chemical Letters 32 (2022) 3387



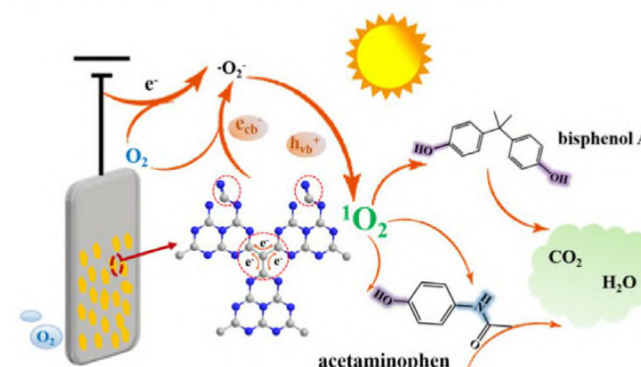
A general strategy via photoelectrocatalytic oxygen reduction for generating singlet oxygen with carbon bridged carbon-nitride electrode

Qianqian Yang, Zhiyuan Feng, Mingyue Liu, Jinxing Zhang, Hongying Zhao, Guohua Zhao

School of Chemical Science and Engineering, and Shanghai Key Lab of Chemical Assessment and Sustainability, Tongji University, Shanghai 200092, China

A novel strategy for selectively generating singlet oxygen is proposed for complete removal of electron-rich organic pollutants in photoelectrocatalytic oxygen reduction process.

Chinese Chemical Letters 32 (2022) 3393



Octadecylamine and glucose-coderived hydrophobic carbon dots-modified porous silica for chromatographic separation

Jia Chen^a, Ning Yuan^b, Danni Jiang^b, Qian Lei^c, Bei Liu^a, Weiyang Tang^d, Kyung Ho Row^d, Hongdeng Qiu^{a,c,e}

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

^b Laboratory on Pollution Monitoring and Control, College of Chemistry and Chemical Engineering, Xinjiang Normal University, Urumqi 830054, China

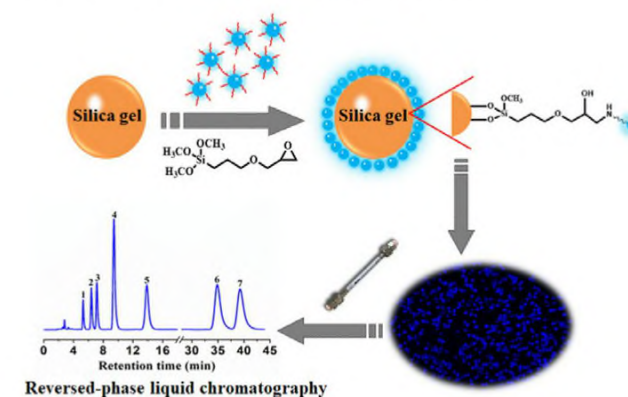
^c School of Chemistry and Chemical Engineering, Gannan Normal University, Ganzhou 341000, China

^d Department of Chemistry and Chemical Engineering, Education and Research Center for Smart Energy and Materials, Inha University, Incheon 402-701, Republic of Korea

^e College of Chemistry, Zhengzhou University, Zhengzhou 450001, China

Octadecylamine and glucose-coderived hydrophobic carbon dots-modified porous silica was served as a new stationary phase for reversed-phase liquid chromatography.

Chinese Chemical Letters 32 (2022) 3398



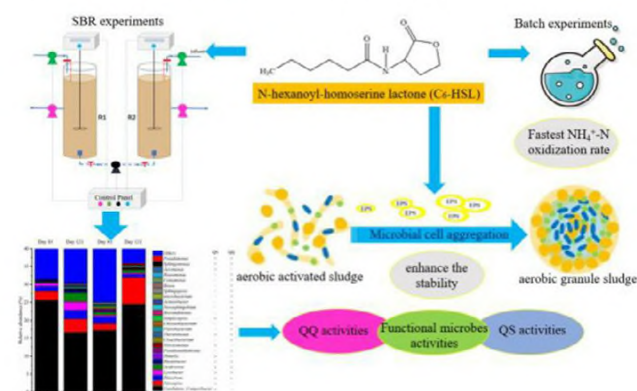
Response of aerobic sludge to AHL-mediated QS: Granulation, simultaneous nitrogen and phosphorus removal performance

Jia Shuai, Xiaoling Hu, Bin Wang, Wanlin Lyu, Rongfan Chen, Wenbin Guo, Hongyu Wang, Dao Zhou

School of Civil Engineering, Wuhan University, Wuhan 430072, China

Exogenous C₆-HSL-manipulation had vital influence on the QS activities and could enhance the stability and optimize the decontamination performance of aerobic granular sludge system.

Chinese Chemical Letters 32 (2022) 3402



Novel reusable sulfate-type zirconium alginate ion-exchanger for fluoride removal

Tao Yu^a, Yiliang Chen^a, Yizhong Zhang^b, Xin Tan^{b,c}, Tao Xie^a, Boyu Shao^b, Xiang Huang^c

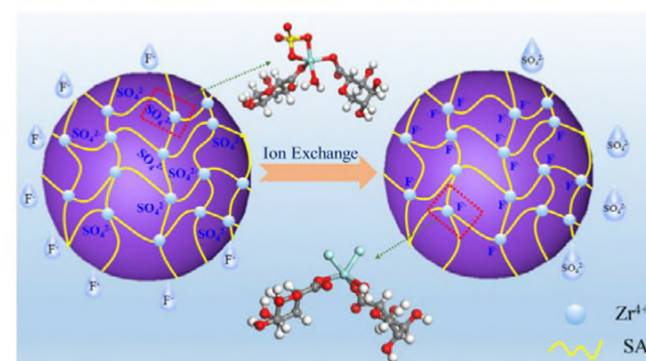
^a School of Chemical Engineering and Technology, Tianjin University, Tianjin 300350, China

^b School of Environmental Science and Engineering, Tianjin University, Tianjin 300350, China

^c School of Science, Tibet University, Lhasa 850000, China

Enhanced fluoride removal by introducing sulfate groups to the zirconium sites of zirconium alginate and proved removal mechanism of ion exchange between sulfate and fluoride ions.

Chinese Chemical Letters 32 (2022) 3410



Intelligent droplet tracking with correlation filters for digital microfluidics

Libin Li^a, Zhen Gu^a, Jia-Le Zhou^a, Bingyong Yan^a, Cong Kong^b, Hua Wang^c, Hui-Feng Wang^a

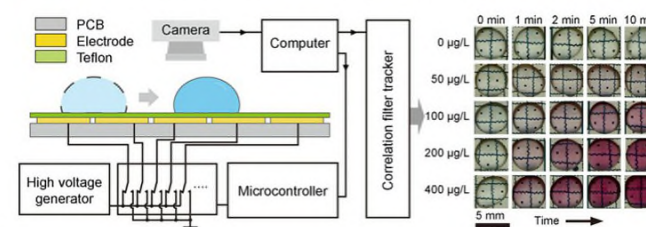
^a Key Laboratory of Advanced Control and Optimization for Chemical Processes Ministry of Education, East China University of Science and Technology, Shanghai 200237, China

^b Key Laboratory of East China Sea Fishery Resources Exploitation, Ministry of Agriculture and Rural Affairs, East China Sea Fisheries Research Institute, Chinese Academy of Fishery Sciences, Shanghai 200090, China

^c Department of Laboratory Medicine, Renji Hospital, School of Medicine, Shanghai Jiao Tong University, Shanghai 200137, China

In this study, an intelligent method based on correlation filters is developed for accurate and fast droplet tracking for digital microfluidics, enabling monitoring of droplet velocity, online colorimetric assay and evaluating the kinetic constants of reaction process.

Chinese Chemical Letters 32 (2022) 3416



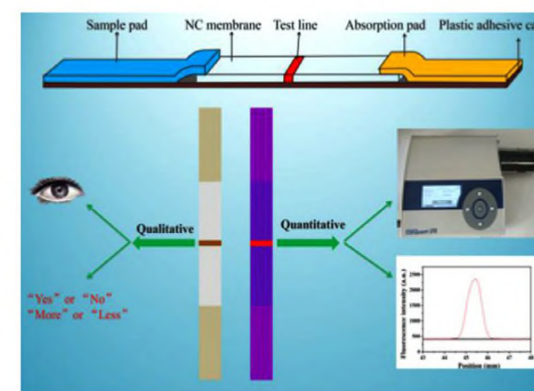
Dual-readout test strips platform for portable and highly sensitive detection of alkaline phosphatase in human serum samples

Juanzu Liu, Hongmin Meng, Lin Zhang, Shasha Li, Juan Chen, Yi Zhang, Jianjun Li, Lingbo Qu, Zhaohui Li

Institute of Chemical Biology and Clinical Application at the First Affiliated Hospital, Zhengzhou Key Laboratory of Functional Nanomaterial and Medical Theranostic, College of Chemistry, Zhengzhou University, Zhengzhou 450001, China

This work developed a fast and simple colorimetric/fluorescent dual-readout lateral flow test strip platform for ultrasensitive detection of alkaline phosphatase by naked eyes and/or a portable reader, which is highly expected to be useful in clinical diagnostics and biomedical applications.

Chinese Chemical Letters 32 (2022) 3421



Site-specific quantification of 5-carboxylcytosine in DNA by chemical conversion coupled with ligation-based PCR

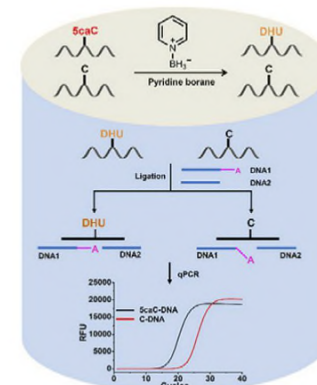
Qian Wang^a, Jiang-Hui Ding^a, Jun Xiong^a, Yang Feng^a, Bi-Feng Yuan^{a,b}, Yu-Qi Feng^{a,b}

^a Sauvage Center for Molecular Sciences, Department of Chemistry, Wuhan University, Wuhan 430072, China

^b School of Health Sciences, Wuhan University, Wuhan 430071, China

A method by chemical conversion in conjugation with ligation-based real-time quantitative PCR was developed for the site-specific quantification of 5-carboxylcytosine in DNA.

Chinese Chemical Letters 32 (2022) 3426



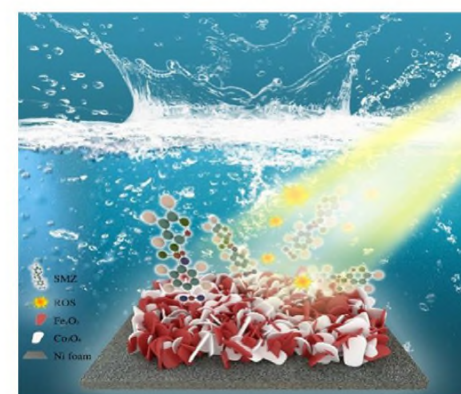
Enhanced photocatalytic degradation of sulfamethoxazole by stable hierarchical Fe₂O₃/Co₃O₄ heterojunction on nickel foam

Jinli Qiu, Cailiang Yue, Wenting Zheng, Fuqiang Liu, Junjie Zhu

School of the Environment & School of Chemistry and Chemical Engineering, Nanjing University, Nanjing 210023, China

Fe₂O₃ and Co₃O₄ nanosheet arrays were incorporated into a Z-scheme heterojunction and loaded on the Ni foam. The prepared Fe₂O₃/Co₃O₄@NF exhibited superior activities towards sulfamethoxazole degradation under simulated solar light irradiation.

Chinese Chemical Letters 32 (2022) 3431



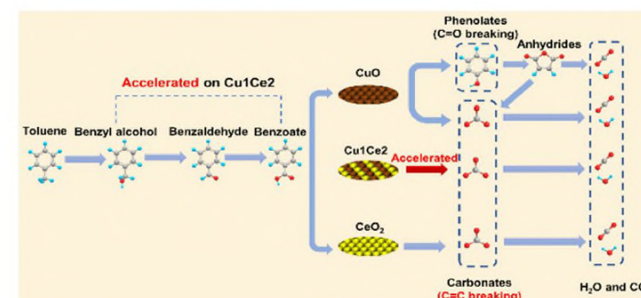
Construction of Cu-Ce interface for boosting toluene oxidation: Study of Cu-Ce interaction and intermediates identified by *in situ* DRIFTS

Jiahui Lu, Jinping Zhong, Quanming Ren, Jiaqi Li, Linghe Song, Shengpeng Mo, Mingyuan Zhang, Peirong Chen, Mingli Fu, Daiqi Ye

School of Environment and Energy, South China University of Technology, Guangzhou 510006, China

Highly efficient CuO-CeO₂ catalyst for toluene oxidation was achieved, the formation of Cu-Ce interface leads to changes in major adsorbed intermediates during toluene oxidation.

Chinese Chemical Letters 32 (2022) 3435



Integration of cryogenic trap to gas chromatography-sulfur chemiluminescent detection for online analysis of hydrogen gas for volatile sulfur compounds

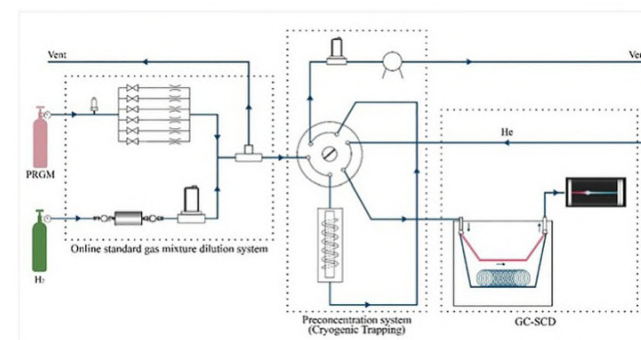
Yi Pan^{a,b}, Fan-Feng Deng^b, Zheng Fang^b, Han-Jiao Chen^a, Zhou Long^a, Xian-Deng Hou^a

^a Analytical & Testing Center, Sichuan University, Chengdu 610064, China

^b Institute of Chemistry, National Institute of Measurement and Testing Technology, Chengdu 610021, China

Highly sensitive and online determination of diverse sulfur compounds in H₂ is achieved by GC-SCD integrated with a cryogenic trapper.

Chinese Chemical Letters 32 (2022) 3440



Ultra-thin temperature controllable microwell array chip for continuous real-time high-resolution imaging of living single cells

Yuanyuan Wu^a, Lei Zhao^b, Yaran Chang^a, Liang Zhao^a, Guangsheng Guo^{a,c}, Xiayan Wang^a

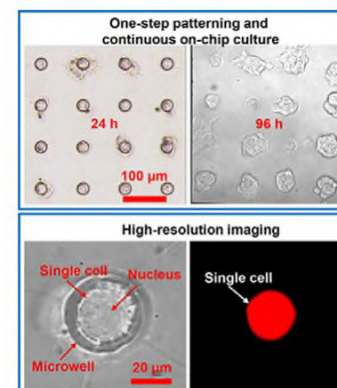
^a Center of Excellence for Environmental Safety and Biological Effects, Beijing Key Laboratory for Green Catalysis and Separation, Department of Chemistry and Biology, Beijing University of Technology, Beijing 100124, China

^b Lanzhou University Second Hospital, Lanzhou 730030, China

^c Minzu University of China, Beijing 100081, China

An ultra-thin temperature-controllable microwell array chip (UTCMA chip) was designed to develop a living single-cell workstation in this study for continuous on-chip culture and real-time high-resolution imaging of living single cells. Highthroughput single-cell patterning was realized in one step by the cell hydrophilicity, and the cell utilization rate, single-cell capture rate and microwell occupancy rate are all close to 100% in the microwell array.

Chinese Chemical Letters 32 (2022) 3446



Bandgap engineering of tetragonal phase CuFeS₂ quantum dots via mixed-valence single-atomic Ag decoration for synergistic Cr(VI) reduction and RhB degradation

Yangzi Shangguan^{a,b}, Yuanhao Zhou^b, Renji Zheng^b, Xuezhen Feng^b, Qiuyue Ge^{a,b}, Ranhao Wang^b, Dazhong Yang^b, Wenfei Wei^b, Xiaoyong Wu^c, Jia Lin^a, Hong Chen^b

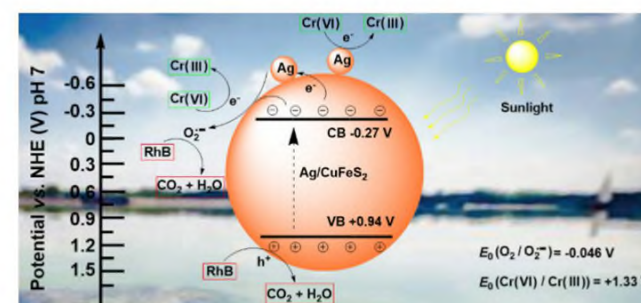
^a Department of Physics, Shanghai Key Laboratory of Materials Protection and Advanced Materials in Electric Power, Shanghai University of Electric Power, Shanghai 200090, China

^b State Environmental Protection Key Laboratory of Integrated Surface Water-Groundwater Pollution Control, Guangdong Provincial Key Laboratory of Soil and Groundwater Pollution Control, School of Environmental Science and Engineering, Southern University of Science and Technology, Shenzhen 518055, China

^c Hubei Key Laboratory of Mineral Resources Processing and Environment, School of Resources and Environmental Engineering, Wuhan University of Technology, Wuhan 430070, China

A highly efficient photocatalyst is constructed through bandgap engineering via mixed-valence Ag single atoms decorated semiconducting chalcopyrite quantum dots (Ag/CuFeS₂ QDs). It provides new insights into the design of high-efficiency single-atom photocatalysts for complex pollutions removal in wastewater.

Chinese Chemical Letters 32 (2022) 3450



Accelerated plasma degradation of organic pollutants in milliseconds and examinations by mass spectrometry

Hua Lu^a, Yiyan Yin^a, Jianghui Sun^a, Weixiang Li^a, Xiaotong Shen^b, Xiujuan Feng^c, Jin Ouyang^a, Na Na^a

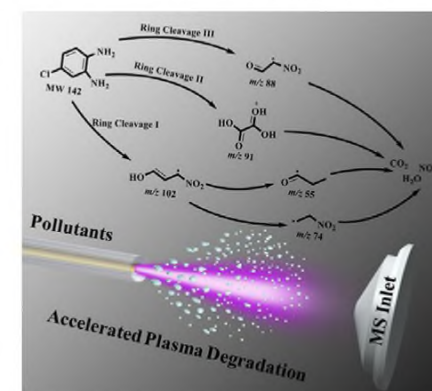
^a Key Laboratory of Radiopharmaceuticals, Ministry of Education, College of Chemistry, Beijing Normal University, Beijing 100085, China

^b School of Life Science, Beijing Institute of Technology, Beijing 100081, China

^c School of Mines, China University of Mining & Technology, Beijing 100085, China

An accelerated plasma degradation in milliseconds was achieved by combining electrospray-based acceleration and plasma-based degradation, whose process was examined by ambient mass spectrometry to deduce mechanisms.

Chinese Chemical Letters 32 (2022) 3457



Promoting near-infrared photocatalytic activity of carbon-doped carbon nitride via solid alkali activation

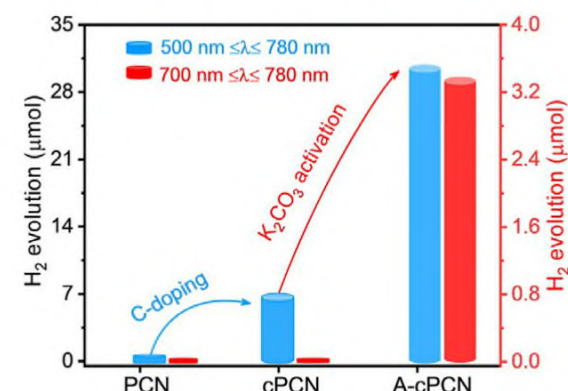
Qingfeng Li^a, Can Ren^b, Chuntian Qiu^a, Tingchao He^b, Qitao Zhang^a, Xiang Ling^a, Yangsen Xu^a, Chenliang Su^a

^a International Collaborative Laboratory of 2D Materials for Optoelectronics Science and Technology of Ministry of Education, Key Laboratory of Optoelectronic Devices and Systems of Ministry of Education and Guangdong Province, Shenzhen University, Shenzhen 518060, China

^b College of Physics and Optoelectronic Engineering, Shenzhen University, Shenzhen 518060, China

Solid alkali activation improved the crystallinity and efficiency of charge separation of PCN, thus remarkably enhanced H₂ evolution and H₂O₂ produce from water under visible and NIR light irradiation.

Chinese Chemical Letters 32 (2022) 3463



Eco-friendly non-acid intercalation and exfoliation of graphite to graphene nanosheets in the binary-peroxidant system for EMI shielding

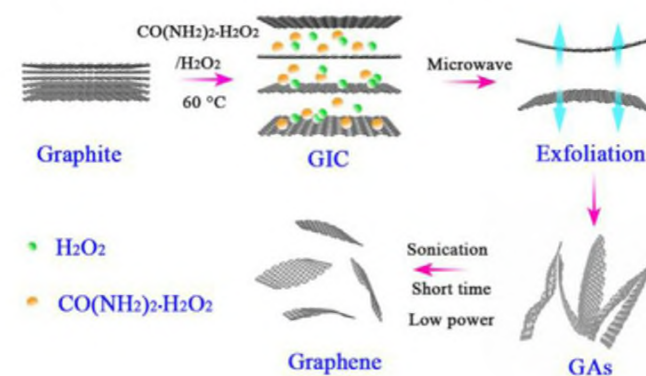
Ping Wang^{a,b}, Bin Guo^a, Zhi Zhang^a, Weinan Gao^a, Wei Zhou^a, Huaxin Ma^a, Wenyu Wu^a, Junfeng Han^b, Ruijun Zhang^a

^a State Key Laboratory of Metastable Materials Science and Technology, Yanshan University, Qinhuangdao 066004, China

^b Key Laboratory of Advanced Optoelectronic Quantum Architecture and Measurement, Ministry of Education, School of Physics, Beijing Institute of Technology, Beijing 100081, China

Natural graphite was exfoliated into high-quality and large-size graphene nanosheets with peroxidant/ H_2O_2 system. No water-washing and effluent-treatment are needed in this chemical exfoliation procedure, thus this is an eco-friendly route.

Chinese Chemical Letters 32 (2022) 3469



An electrochemical biosensor based on DNA “nano-bridge” for amplified detection of exosomal microRNAs

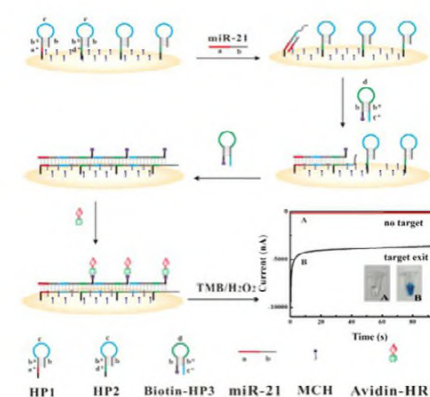
Jing Zhang^a, Meifeng Hou^a, Guanyu Chen^b, Huifang Mao^a, Wenqian Chen^b, Wenshen Wang^a, Jinghua Chen^b

^a College of Life Sciences, Fujian Agriculture and Forestry University, Fuzhou 350002, China

^b Department of Pharmaceutical Analysis, The School of Pharmacy, Fujian Medical University, Fuzhou 350108, China

The DNA nanobridge structure was constructed on the electrode by hybridization chain reaction (HCR) for the detection of exosomal miRNA-21. Horizontal DNA nanostructures make the signal groups closer to the electrode surface and increase the efficiency and reliability of signal transmission.

Chinese Chemical Letters 32 (2022) 3474



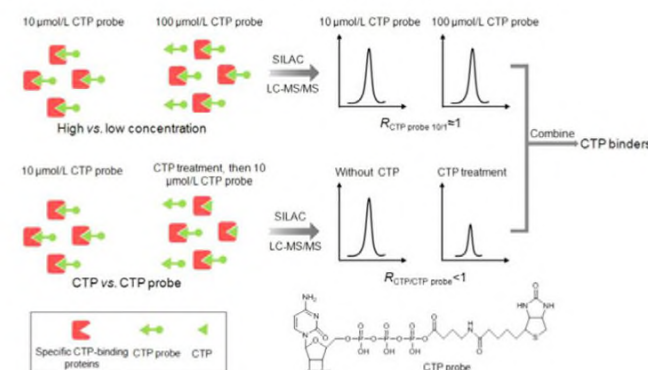
Comprehensive profiling of CTP-binding proteins using a biotinylated CTP affinity probe

Mengting Pan, Yunming Liu, Xiaofang Zheng, Meijuan Zhou, Changjun You, Xiaoxia Dai

State Key Laboratory of Chemo/Biosensing and Chemometrics, College of Chemistry and Chemical Engineering, Molecular Science and Biomedicine Laboratory, Hunan Provincial Key Laboratory of Biomacromolecular Chemical Biology, Hunan University, Changsha 410082, China

A high-throughput chemical proteomic strategy was employed for profiling CTP-binding proteins in human cells by using a biotinylated CTP affinity probe. About 90 candidate CTP-binding proteins were identified, which are involved in multiple cellular processes.

Chinese Chemical Letters 32 (2022) 3479



-22-Fold of ^1H signal enhancement *in-situ* low-field liquid NMR using nanodiamond as polarizer of overhauser dynamic nuclear polarization

Zhen Zhang^{a,b}, Fang Chen^{a,b}, Jiwen Feng^{a,b}, Junfei Chen^{a,b}, Li Chen^{a,b}, Zhi Zhang^{a,b}, Huijuan Wang^{a,b}, Xin Cheng^{a,b}, Maili Liu^{a,b,c}, Chaoyang Liu^{a,b,c}

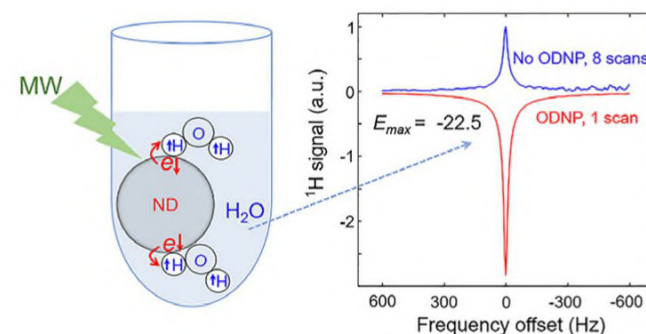
^a State Key Laboratory of Magnetic Resonance and Atomic and Molecular Physics, Wuhan Center for Magnetic Resonance, Wuhan Institute of Physics and Mathematics, Innovation Academy for Precision Measurement Science and Technology, Chinese Academy of Sciences, Wuhan 430071, China

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

^c Wuhan National Laboratory for Optoelectronics, Huazhong University of Science and Technology, Wuhan 430074, China

A -22.5-fold of ^1H ODNP enhancement is achieved *in-situ* liquid at room temperature at 0.06 T using nanodiamond (ND) as polarizer. The influence factors of ^1H enhancement *via* ND is discussed which points out a direction to improve enhancement.

Chinese Chemical Letters 32 (2022) 3483



Novel photo-theranostic GdB₆ nanoparticles for fluorescence imaging and NIR-photothermal therapy

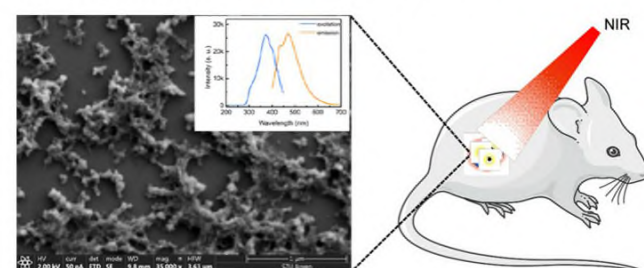
Yuqi Chen^a, Mengna Jiang^a, Liwei Xiong^b, Xianxian Yao^a, Mingjian Fan^a, Danyang Chen^a, Qi Jiang^a, Zhaokui Jin^a, Qianjun He^a

^a Guangdong Provincial Key Laboratory of Biomedical Measurements and Ultrasound Imaging, National-Regional Key Technology Engineering Laboratory for Medical Ultrasound, Marshall Laboratory of Biomedical Engineering, School of Biomedical Engineering, Health Science Center, Shenzhen University, Shenzhen 518060, China

^b Hubei Key Laboratory of Plasma Chemistry and Advanced Materials, Wuhan Institute of Technology, Wuhan 430205, China

Novel GdB₆ nanoparticles are synthesized by a microwave-assisted chemical etching method, and have exhibited both NIR-photothermal conversion capability and unique fluorescence property, enabling fluorescence bio-imaging and NIR-photothermal therapy.

Chinese Chemical Letters 32 (2022) 3487



Synergistic tuning of electrochemical surface area and surface Co³⁺ by oxygen plasma enhances the capacities of Co₃O₄ lithium–oxygen battery cathodes

Xueli Guo^a, Liang Xiao^{a,d}, Pengfei Yan^c, Ming Li^d, Mingjun Zhu^a, Jinping Liu^{a,b}

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

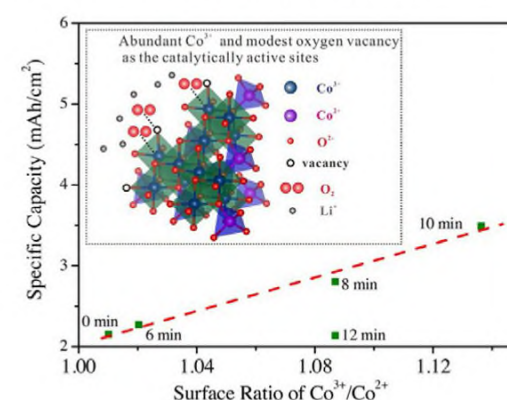
^b Key Laboratory for Photonic and Electronic Bandgap Materials, Ministry of Education, School of Physics and Electronic Engineering, Harbin Normal University, Harbin 150025, China

^c Beijing Key Laboratory of Microstructure and Property of Solids, Faculty of Materials and Manufacturing, Beijing University of Technology, Beijing 100124, China

^d School of Materials Science and Engineering, Wuhan University of Technology, Wuhan 430070, China

The synergistic effects of enhanced electrochemical surface area, modest oxygen vacancy and high surface Co³⁺ concentration introduced via oxygen plasma etching extremely improve the reversible capacity of Co₃O₄ NAs cathode for lithium–oxygen batteries.

Chinese Chemical Letters 32 (2022) 3491



Flexible lithium metal capacitors enabled by an *in situ* prepared gel polymer electrolyte

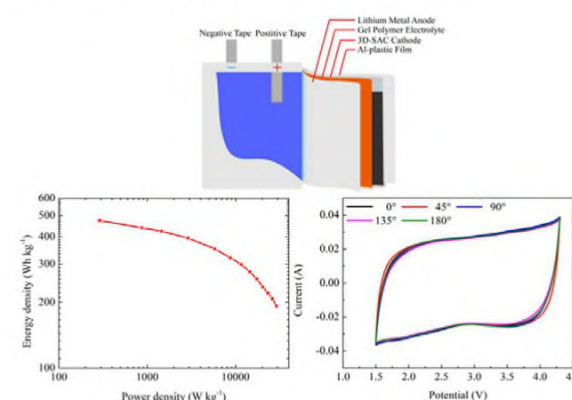
Qizhi Zhong^a, Bao Liu^b, Bingjun Yang^b, Yali Li^a, Junshuai Li^a, Xingbin Yan^b

^a Key Laboratory of Special Function Materials & Structure Design of the Ministry of Education, and School of Materials & Energy, Lanzhou University, Lanzhou 730000, China

^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

Via an *in situ* prepared gel polymer electrolyte, we realized a flexible and safe Li metal capacitor with high capacitance (210 F/g at 0.1 A/g within 1.54.3 V vs. Li/Li⁺), high energy density (474 Wh/kg) and high power density (29 kW/kg).

Chinese Chemical Letters 32 (2022) 3496



The metallic 1T-WS₂ as cocatalysts for promoting photocatalytic N₂ fixation performance of Bi₅O₇Br nanosheets

Pengyuan Qiu^a, Jianwei Wang^a, Zhangqian Liang^a, Yanjun Xue^a, Yanli Zhou^b, Xiaoli Zhang^c, Hongzhi Cui^a, Guiqing Cheng^a, Jian Tian^a

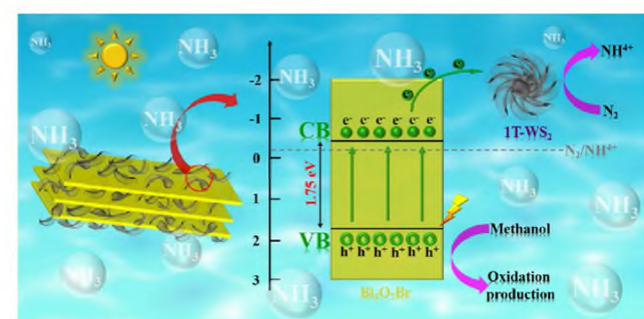
^a School of Materials Science and Engineering, Shandong University of Science and Technology, Qingdao 266590, China

^b School of Environmental and Material Engineering, Yantai University, Yantai 264005, China

^c School of Materials Science and Engineering, Zhengzhou University, Zhengzhou 450001, China

In this research work, the 1T phase WS₂ NSs decorated Bi₅O₇Br NSs (named 1T-WS₂@Bi₅O₇Br composites) have narrower band gap, more effective carrier transport efficiency and better light absorption ability. After testing, 1T-WS₂@Bi₅O₇Br-5 composites present the best photocatalytic nitrogen fixation performance (8.43 mmol L⁻¹ h⁻¹ g⁻¹) and excellent stability. The probable photocatalytic mechanism of 1T-WS₂@Bi₅O₇Br composites is proposed.

Chinese Chemical Letters 32 (2022) 3501



An efficient Ag/MIL-100(Fe) catalyst for photothermal conversion of CO₂ at ambient temperature

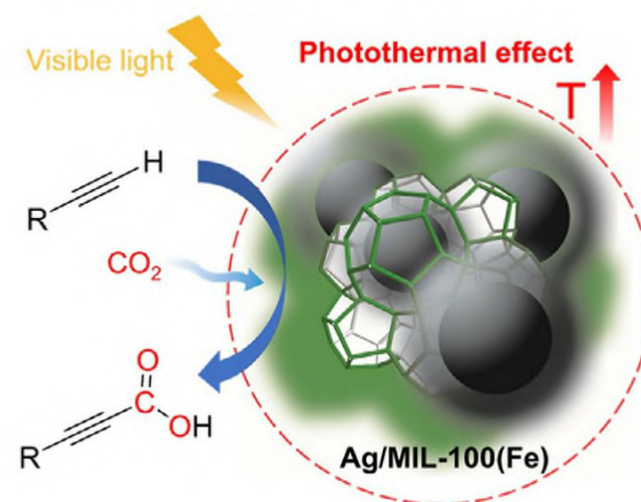
Peng Jing^a, Boyuan Wu^a, Zongsu Han^a, Wei Shi^a, Peng Cheng^{a,b}

^a Key Laboratory of Advanced Energy Materials Chemistry (MOE), College of Chemistry, Nankai University, Tianjin 300071, China

^b Renewable Energy Conversion and Storage Center, Nankai University, Tianjin 300071, China

Taking advantage of photothermal effects and catalytic activities of both Ag nanoparticles and MIL-100(Fe), Ag nanoparticles/MIL-100(Fe) composites showed superior catalytic performance for carboxylation of terminal alkynes with 1 atm CO₂ at ambient temperature.

Chinese Chemical Letters 32 (2022) 3505



Preparation of quaternarized N-halamine-grafted graphene oxide nanocomposites and synergetic antibacterial properties

Danlin Bu^{a,b}, Yu Zhou^{a,b}, Chang Yang^{a,b}, Hengyu Feng^{a,b}, Chunxia Cheng^{a,b}, Mengjie Zhang^a, Zice Xu^a, Linghan Xiao^{a,b}, Yujing Liu^c, Zhenai Jin^d

^a Jilin Province Key Laboratory of Carbon Fiber Development and Application, College of Chemistry and Life Science, Changchun University of Technology, Changchun 130012, China

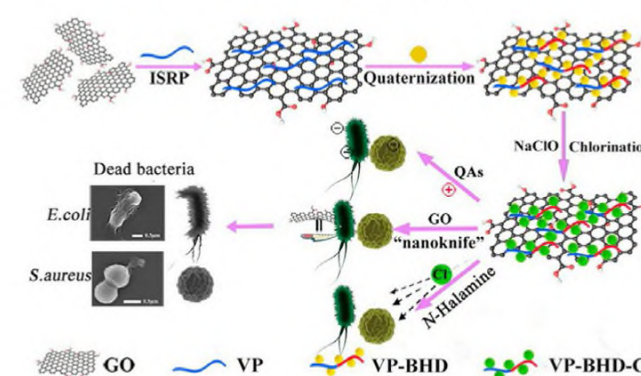
^b Advanced Institute of Materials Science, Changchun University of Technology, Changchun 130012, China

^c College of Materials Science and Engineering, Zhejiang University of Technology, Hangzhou 310014, China

^d Department of Pediatrics, Affiliated Hospital of Yanbian University, Yanji 133000, China

Graphene oxide (GO) grafted with quaternarized N-halamine polymer has combined with “release-kill” and “contact-kill” methods, the bactericidal efficacy of the material on *E. coli* and *S. aureus* represented by Gram-negative and Gram-positive bacteria was studied. The synergistic effect greatly improved the germicidal efficacy.

Chinese Chemical Letters 32 (2022) 3509



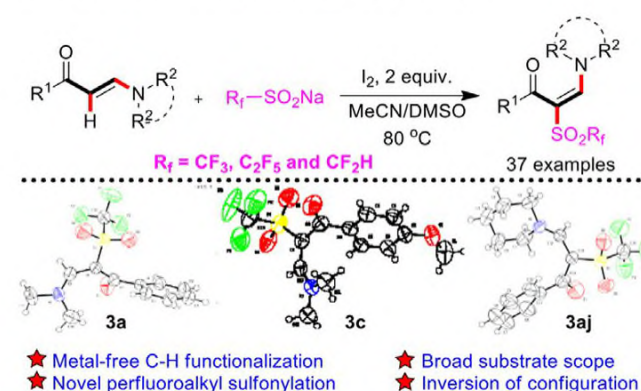
Metal-free C(sp²)-H perfluoroalkylsulfonylation and configuration inversion: Stereoselective synthesis of α -perfluoroalkylsulfonyl *E*-enaminones

Qing Yu, Yunyun Liu, Jie-Ping Wan

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

The C-H perfluoroalkylsulfonylation of enaminones leading to the synthesis diverse perfluoroalkyl functionalized enamines is realized via the promotion of molecular iodine. As the first method in enaminone C-H perfluoroalkylsulfonylation, this work features advantage of metal-free conditions, novel and selective stereoselectivity and broad substrate tolerance.

Chinese Chemical Letters 32 (2022) 3514



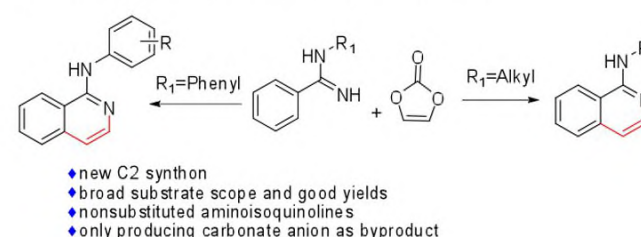
Synthesis of aminoisoquinolines via Rh-catalyzed [4 + 2] annulation of benzamidamides with vinylene carbonate

Xin Huang, Yingying Xu, Jianglian Li, Ruizhi Lai, Yi Luo, Qiantao Wang, Zhongzhen Yang, Yong Wu

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

A new strategy is developed for the synthesis of 1-aminoisoquinoline derivatives, employing benzamidines as efficient directing groups and the vinylene carbonate as an acetylene surrogate. The reaction features broad substrate scopes and good yields, only producing carbonate anion as byproduct.

Chinese Chemical Letters 32 (2022) 3518



Tunable organic particles: An efficient approach from solvent-dependent Schiff base macrocycles

Ying Xiong^{a,b}, Chao Huang^a, Hongjuan Liu^a, Rui Yi^a, Bi-Xue Zhu^a, Xin-Long Ni^{a,c}

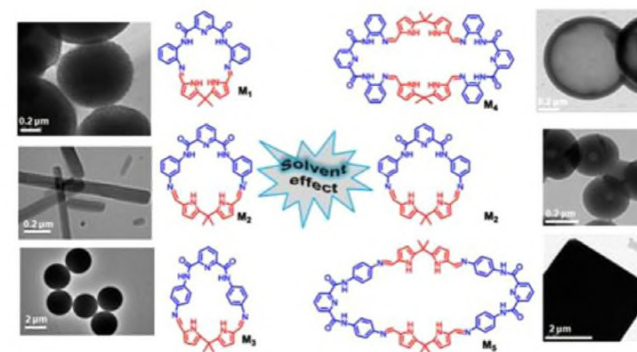
^a Key Laboratory of Macrocyclic and Supramolecular Chemistry of Guizhou Province, Guizhou University, Guiyang 550025, China

^b School of Chemistry and Materials, Guizhou Normal University, Guiyang 550025, China

^c College of Chemistry and Chemical Engineering, Key Laboratory of the Assembly and Application of Organic Functional Molecules of Hunan Province, Hunan Normal University, Changsha 410081, China

Tunable organic particles were controlled formed from solvent-dependent Schiff base macrocycles at room temperature with high yield.

Chinese Chemical Letters 32 (2022) 3522



Intermolecular [4 + 2] process of *N*-acyliminium ions with simple olefins for construction of functional substituted-1,3-oxazinan-2-ones

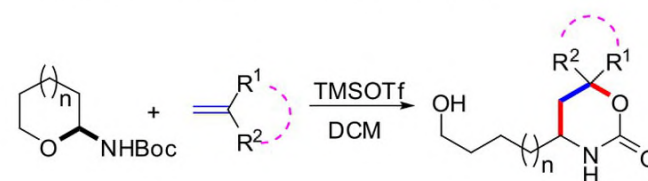
Xiaoli Han^a, Xiaodi Nie^a, Yiman Feng^a, Bangguo Wei^a, Changmei Si^a, Guoqiang Lin^b

^a Institutes of Biomedical Sciences and School of Pharmacy, Fudan University, Shanghai 200433, China

^b Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, Shanghai 200032, China

An efficient approach to functionalized 4,6-disubstituted-and 4,6,6-trisubstituted-1,3-oxazinan-2-ones skeletons has been developed through the reaction of semicyclic *N,O*-acetals with 1,1-disubstituted ethylenes.

Chinese Chemical Letters 32 (2022) 3526



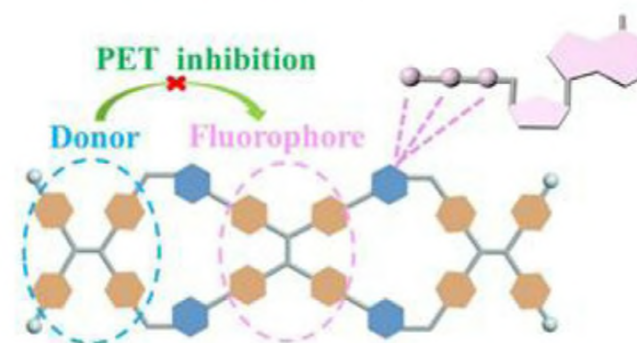
Aggregation-induced emission and self-assembly of functional tetraphenylethene-based tetracationic dicyclophanes for selective detection of ATP in water

Chunyan Qin, Yawen Li, Qingfang Li, Chaochao Yan, Liping Cao

College of Chemistry and Materials Science, Northwest University, Xi'an 710069, China

Dicyclophanes with electron-withdrawing groups (e.g., NO₂) could prohibit the intramolecular PET process between the outer substituted TPE units as donor and the central TPE core as acceptor, resulting in fluorescence enhancement and selective detection of ATP in aqueous solution.

Chinese Chemical Letters 32 (2022) 3531



Photoinduced reaction of potassium alkyltrifluoroborates, sulfur dioxide and *para*-quinone methides via radical 1,6-addition

Min Yang^a, Huiqi Han^a, Hui Jiang^b, Shengqing Ye^b, Xiaona Fan^a, Jie Wu^{b,c,d}

^a Department of Forensic Science, Collaborative Innovation Center for Gannan Oil-tea Camellia Industrial Development, Gannan Medical University, Ganzhou 341000, China

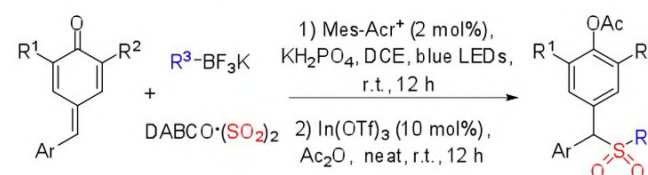
^b School of Pharmaceutical and Materials Engineering, Taizhou University, Taizhou 318000, China

^c State Key Laboratory of Organometallic Chemistry, Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, Shanghai 200032, China

^d School of Chemistry and Chemical Engineering, Henan Normal University, Xinxiang 453007, China

A sulfonylation reaction of potassium alkyltrifluoroborates, DABCO·(SO₂)₂, and *para*-quinone methides at room temperature in the presence of photoredox catalysis under visible light irradiation is developed, affording the corresponding diarylmethyl alkylsulfones in moderate to good yields.

Chinese Chemical Letters 32 (2022) 3535



The facile preparation of *p*-(methoxy)calix[*n*]arenes (*n* = 6, 7, or 8) and their permethylated derivatives

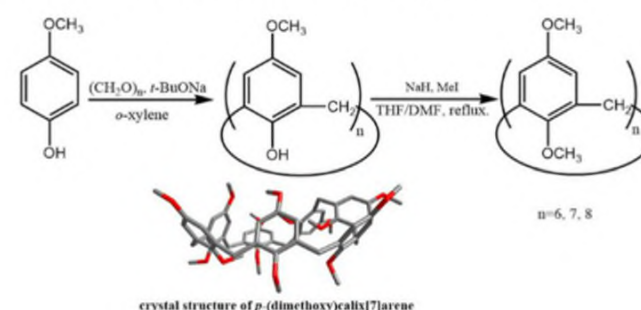
Yihan Ding^a, Jianmin Jiao^a, Baobao Sun^a, Zhen Yang^a, Chen Lin^a, Leyong Wang^{a,b}

^a Key Laboratory of Mesoscopic Chemistry of MOE, Jiangsu Key Laboratory of Advanced Organic Materials, School of Chemistry and Chemical Engineering, Nanjing University, Nanjing 210023, China

^b School of Petrochemical Engineering, Changzhou University, Changzhou 213164, China

The mixture of *p*-(methoxy)calix[*n*]arenes (*n* = 6, 7, or 8) was prepared in one step, and *p*-(methoxy)calix[6]- and [8]-arenes could be separated from the mixture by solvent extraction. Their permethylated derivatives were also prepared. The host-guest property of *p*-(dimethoxy)calix[6]arene was studied and the single crystal of *p*-(dimethoxy)calix[7]arene was obtained to verify its structure and conformation.

Chinese Chemical Letters 32 (2022) 3539



Microwave-assisted controllable synthesis of 2-acylbenzothiazoles and bibenzo[*b*][1,4]thiazines from aryl methyl ketones and disulfanediyl dianilines

Yuquan Qi^a, Xiaoyu Gu^a, Xianqiang Huang^a, Guodong Shen^a, Bingchuan Yang^a, Qingpeng He^a, Zechun Xue^a, Mengcheng Du^c, Lilong Shi^c, Bing Yu^b

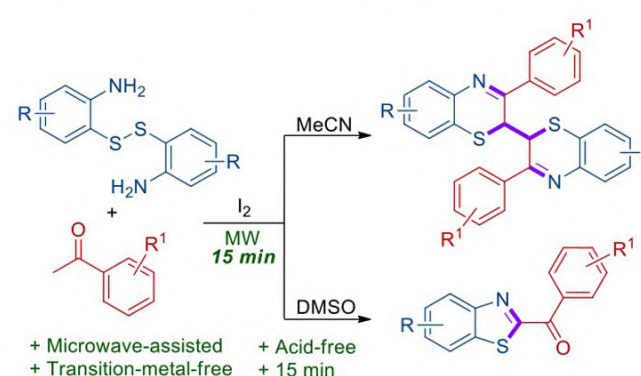
^a Shandong Provincial Key Laboratory of Chemical Energy Storage and Novel Cell Technology, School of Chemistry & Chemical Engineering, Liaocheng University, Liaocheng 252059, China

^b Green Catalysis Center, College of Chemistry, Zhengzhou University, Zhengzhou 450001, China

^c National Rubber Additive Engineering Technology Center, Liaocheng 252059, China

A condition-controlled strategy to selectively synthesize nitrogen-sulfur heterocycles through microwave-assisted high-efficiency protocol has been proven. This method can selectively synthesize five-membered ring and six-membered ring benzoheterocyclic compounds through the control of solvents and the consumption of iodine in high yields.

Chinese Chemical Letters 32 (2022) 3544



High temperature thermo-photocatalysis driven carbon removal in direct biogas fueled solid oxide fuel cells

Doudou Gu^{a,c}, Guan Zhang^{a,c}, Jing Zou^b

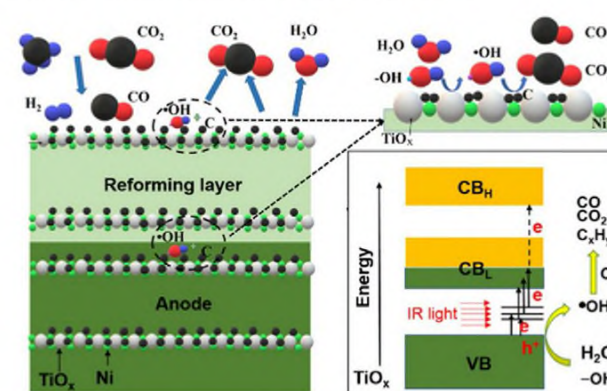
^a Institute of Hydrogen and Fuel Cell, Harbin Institute of Technology, Shenzhen, Shenzhen 518055, China

^b General Education Division, School of Humanities & Social Science, The Chinese University of Hong Kong, Shenzhen, Shenzhen 518172, China

^c School of Civil and Environmental Engineering, Harbin Institute of Technology, Shenzhen, Shenzhen 518055, China

Carbon removal in biogas fueled SOFCs anode is realized by *in situ* generated hydroxyl radical from reduced TiO_x powder under high temperature infrared light excitation.

Chinese Chemical Letters 32 (2022) 3548



Enriching redox active sites by interconnected nanowalls-like nickel cobalt phospho-sulfide nanosheets for high performance supercapacitors

Kaiyang Zhang^a, Yazhou Xu^a, Yingchun Lin^a, Yushuai Xiong^a, Jun Huang^a, Li Wang^a, Mengke Peng^a, Ting Hu^b, Kai Yuan^a, Yiwang Chen^{a,c}

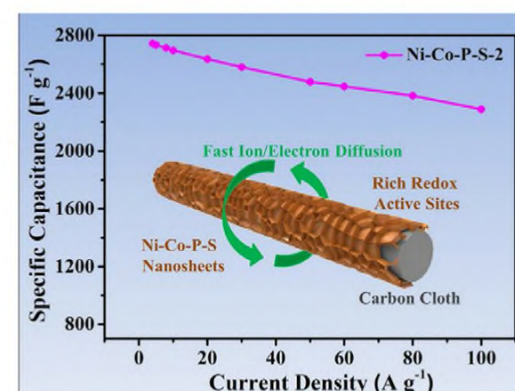
^a Institute of Polymers and Energy Chemistry (IPEC), College of Chemistry, Nanchang University, Nanchang 330031, China

^b School of Materials Science and Engineering, Nanchang University, Nanchang 330031, China

^c Institute of Advanced Scientific Research (IASR), Jiangxi Normal University, Nanchang 330022, China

Nickel cobalt phospho-sulfide (Ni-Co-P-S) nanosheets were deposited on the surface of carbon cloth by a facile one-step electrodeposition method. The interconnected thin Ni-Co-P-S nanosheets delivered rich active sites and fast ion/electron diffusion path, leading to enhanced reversible capacitance and excellent electrochemical performance.

Chinese Chemical Letters 32 (2022) 3553



X-site doping in ABX_3 triggers phase transition and higher T_c of the dielectric switch in perovskite

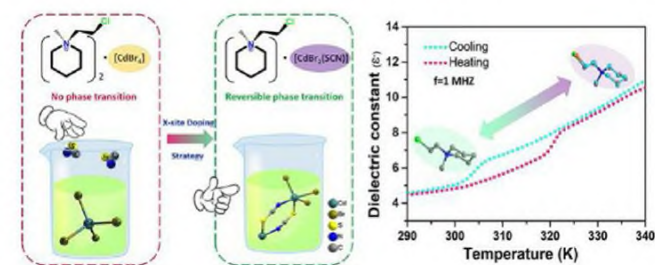
Youy^a Yu^{a,b}, Peizhi Huang^b, Yuzhen Wang^{a,b}, Zhixu Zhang^a, Tie Zhang^a, Yi Zhang^a, Dawei Fu^{a,b}

^a Ordered Matter Science Research Center, Jiangsu Key Laboratory for Science and Applications of Molecular Ferroelectrics, Southeast University, Nanjing 211189, China

^b Institute for Science and Applications of Molecular Ferroelectrics, Key Laboratory of the Ministry of Education for Advanced Catalysis Materials, Zhejiang Normal University, Jinhua 321004, China

The novel $ABX_2X'_1$ (X-site doping in an ABX_3) compound [CEMP]-[$CdBr_2(SCN)$] (CEMP = 1-(2-chloro-ethyl)-1-methyl-piperidine) with remarkable high-temperature reversible dielectric switching properties was successfully designed by X-site doping strategy.

Chinese Chemical Letters 32 (2022) 3558



The competitive and synergistic effect between adsorption enthalpy and capacity in D_2/H_2 separation of $M_2(m\text{-dobdc})$ frameworks

Fan Wu^{a,b}, Liqiong Li^{a,c}, Yanxi Tan^a, El-Sayed M. El-Sayed^{a,b,d}, Daqiang Yuan^a

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

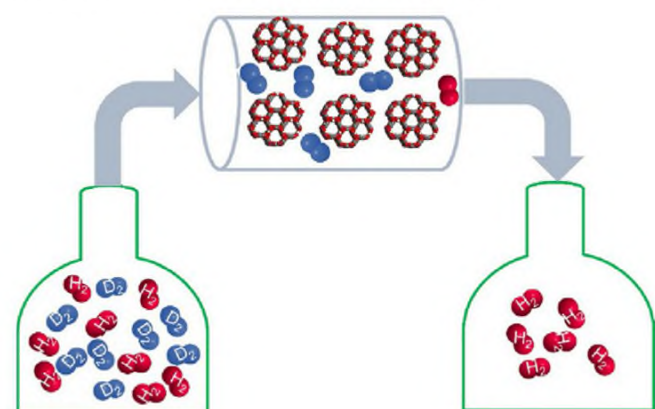
^b University of the Chinese Academy of Sciences, Beijing 100049, China

^c College of Chemistry, Fuzhou University, Fuzhou 350108, China

^d Chemical Refining Laboratory, Refining Department, Egyptian Petroleum Research Institute, Nasr City, Cairo 11727, Egypt

D_2/H_2 separation performance of $M_2(m\text{-dobdc})$ ($M = Co, Ni, Mg, Mn$) are studied by breakthrough experiments. The competitive and synergistic effect of gas uptake and adsorption enthalpy make $Co_2(m\text{-dobdc})$ the best material for D_2/H_2 separation among $M_2(m\text{-dobdc})$ frameworks during the breakthrough process.

Chinese Chemical Letters 32 (2022) 3562



Aza-BODIPY molecular assembly at the liquid-solid interface driven by $Br \cdots F \cdots BF$ interactions

Yuchuan Xiao^{a,c,d}, Fangjian Cai^b, Xuan Peng^{a,d}, Xiyuan Kang^b, Peng Lei^{a,d}, Xin Li^e, Haijun Xu^{b,f}, Xunwen Xiao^c, Bin Tu^a, Qingdao Zeng^{a,d}

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

^b Jiangsu Co-Innovation Center of Efficient Processing and Utilization of Forest Resources, College of Chemical Engineering, Nanjing Forestry University, Nanjing 210037, China

^c School of Materials and Chemical Engineering, Ningbo University of Technology, Ningbo 315211, China

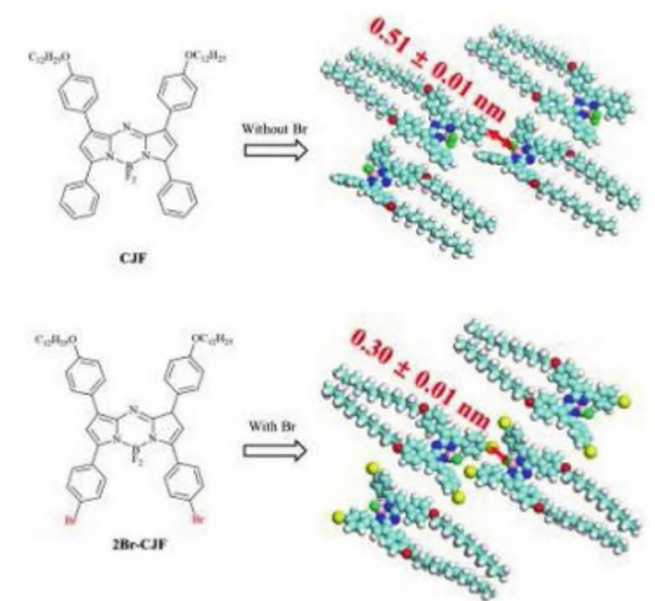
^d Center of Materials Science and Optoelectronics Engineering, University of Chinese Academy of Sciences, Beijing 100049, China

^e CAS Center for Excellence in Nanoscience, Beijing Key Laboratory of Micro-Nano Energy and Sensor, Beijing Institute of Nanoenergy and Nanosystems, Chinese Academy of Sciences, Beijing 100083, China

^f School of Chemistry and Chemical Engineering, Henan Normal University, Xinxiang 453002, China

This work describes the role of $Br \cdots F \cdots BF$ interaction in the self-assembly aza-BODIPY derivatives. The intermolecular $Br \cdots F \cdots BF$ interaction exists in 2Br-CJF self-assembly structure, which strengthens the stability of 2Br-CJF self-assembly structure.

Chinese Chemical Letters 32 (2022) 3566



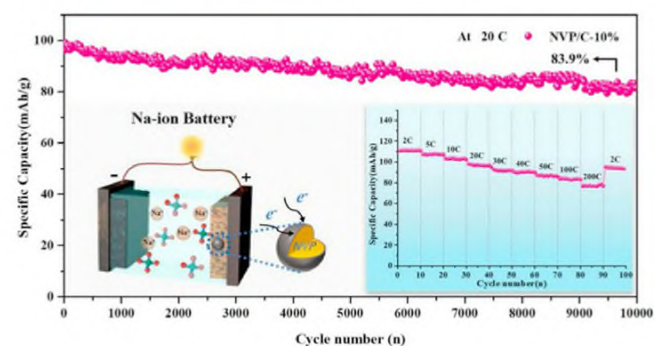
A robust carbon coating of $Na_3V_2(PO_4)_3$ cathode material for high performance sodium-ion batteries

Liyang Shen, Yong Li, Swagata Roy, Xiuping Yin, Wenbo Liu, Shanshan Shi, Xuan Wang, Xuemin Yin, Jiujun Zhang, Yufeng Zhao

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

A simple two-step method has been implemented for the successful preparation of carboncoated $Na_3V_2(PO_4)_3$ materials. As synthesized sample displays a remarkable electrochemical performance of 78.5 mAh/g under an ultra-high current density of 200 C and a long cycle- performance (discharge capacity 80.7 mAh/g at 20 C after 10000 cycles), outperforming the state-of-the-art cathode materials as reported in literatures.

Chinese Chemical Letters 32 (2022) 3570



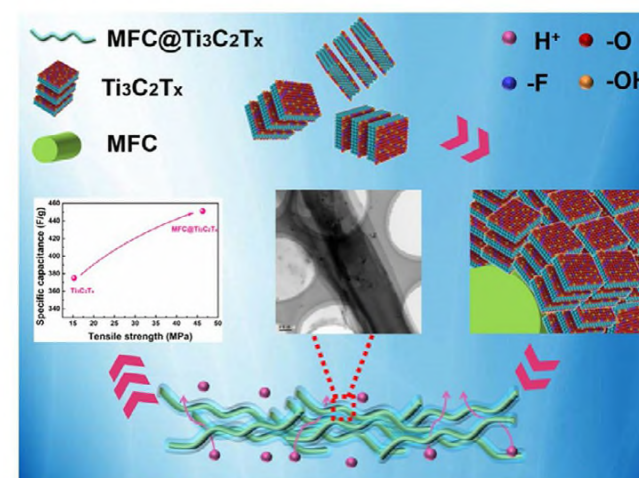
Fast self-assembled microfibrillated cellulose@MXene film with high-performance energy storage and superior mechanical strength

Zhirong Zhang, Zhongping Yao, Zhaohua Jiang

Harbin Institute of Technology, School of Chemical Engineering and Technology, Harbin 150001, China

The $\text{Ti}_3\text{C}_2\text{T}_x$ nanosheets fast and automatic coated on the MFC to form the $\text{MFC@Ti}_3\text{C}_2\text{T}_x$ microgel due to the rich hydroxyl on MFC, and resulting microgel film delivery a high capacitance of 451 F/g at 1 A/g and a promoted tensile strength of 46.3 MPa due to the unique anti-aggregation structure and hydrogen bonding linkage.

Chinese Chemical Letters 32 (2022) 3575



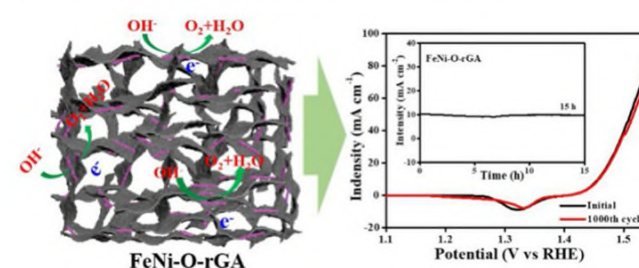
Surface oxidized iron-nickel nanorods anchoring on graphene architectures for oxygen evolution reaction

Xu Yu, Zhixin Zhao, Chengang Pei

School of Chemistry and Chemical Engineering, Yangzhou University, Yangzhou 225000, China

Surface oxidized iron-nickel nanorods coupling with reduced graphene architectures (FeNi-O-rGA) were synthesized by combining hydrothermal, freeze-drying and thermal activation approach. Due to the hierarchical structure and optimized composition effects, FeNi-O-rGA exhibited excellent catalytic performance for oxygen evolution reaction.

Chinese Chemical Letters 32 (2022) 3579



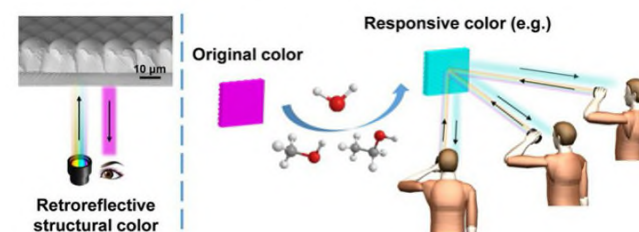
Angle-independent responsive organogel retroreflective structural color film for colorimetric sensing of humidity and organic vapors

Cuiping Ji, Jing Zeng, Sijia Qin, Min Chen, Limin Wu

Department of Materials Science and State Key Laboratory of Molecular Engineering of Polymers, Fudan University, Shanghai 200433, China

The color remains angle-independent when the retroreflective structural color film responds to varied humidity and organic vapors (methanol and ethanol).

Chinese Chemical Letters 32 (2022) 3584



Engineering heterostructure and crystallinity of Ru/RuS₂ nanoparticle composited with N-doped graphene as electrocatalysts for alkaline hydrogen evolution

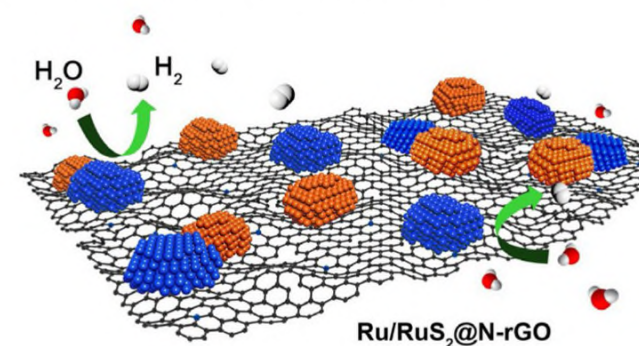
Xuyun Gao^{a,b}, Bo Li^a, Xuzhuo Sun^a, Baofan Wu^a, Yanping Hu^b, Zhichao Ning^a, Jun Li^b, Ning Wang^b

^a College of Chemistry and Chemical Engineering, Henan University of Technology, Zhengzhou 450001, China

^b Key Laboratory of Synthetic and Natural Functional Molecule of the Ministry of Education, College of Chemistry & Materials Science, Northwest University, Xi'an 710069, China

Ru/RuS₂ heterostructure with low crystallinity has been successfully synthesized by control calcining temperature and adjusting the amount of Na₂SO₄, revealed highly efficient HER activities with overpotential 18 mV at current density 10 mA/cm² and remarkable stability for 24 h in 1.0 mol/L KOH.

Chinese Chemical Letters 32 (2022) 3591



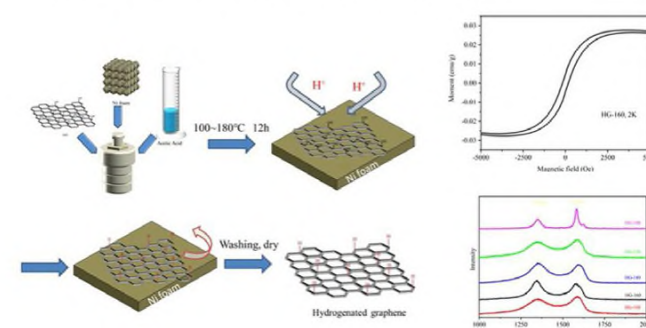
Facile preparation of hydrogenated graphene by hydrothermal methods and the investigation of its ferromagnetism

Yunpeng Wu, Yi Feng, Zhongyu He, Deyang Yu, Ying Xue, Xilong Liu, Leiyun Han, Xudong Zhao, Xiaoyang Liu

State Key Laboratory of Inorganic Synthesis and Preparative Chemistry, College of Chemistry, Jilin University, Changchun 130012, China

Hydrogenated graphene (HG) was prepared by hydrothermal method and the ferromagnetism of the HG was studied.

Chinese Chemical Letters 32 (2022) 3596



Engineering of yolk-shelled FeSe_2 @nitrogen-doped carbon as advanced cathode for potassium-ion batteries

Chang Liu^{a,b}, Yujie Li^a, Yanhong Feng^b, Sen Zhang^b, Di Lu^a, Boyun Huang^a, Tao Peng^c, Weiwei Sun^a

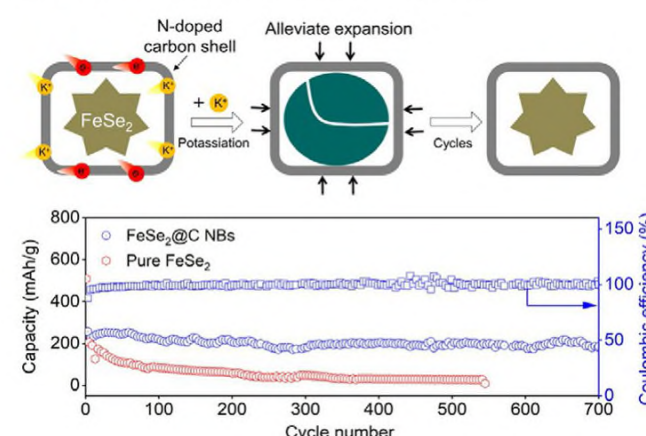
^a College of Aerospace Science and Engineering, National University of Defense Technology, Changsha 410073, China

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

^c School of Physics and Electronic Engineering, Xinyang Normal University, Xinyang 464000, China

Here, yolk-shelled FeSe_2 @N-doped carbon nanoboxes, in which the inner highly-crystalline FeSe_2 clusters are completely surrounded by the self-supported carbon shell. As a conversion-type cathode material for potassium-ion battery, the FeSe_2 @C electrode delivers a relatively ultra-high specific capacity of 257 mAh/g and ultra-long cycle life exceeding 700 cycles.

Chinese Chemical Letters 32 (2022) 3601



Improving Na^+ transport kinetics and Na^+ storage of hierarchical rhenium-nickel sulfide (ReS_2 @ NiS_2) hollow architecture by assembling layered 2D-3D heterostructures

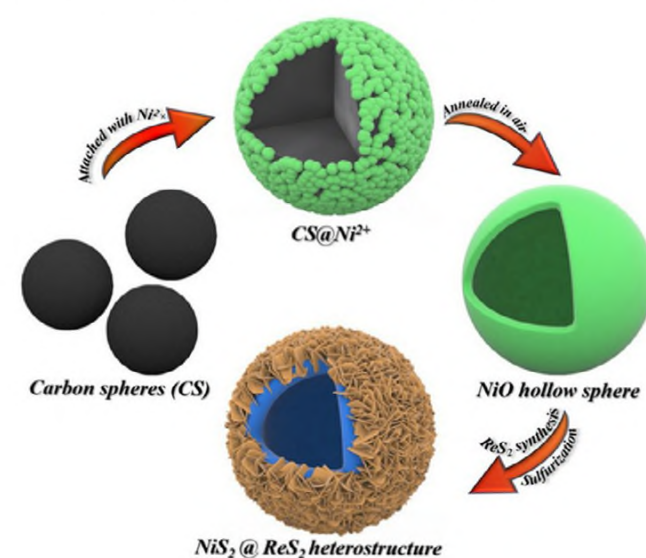
Zelin Cai^a, Zilin Peng^a, Xinlong Liu^a, Rui Sun^a, Zhaoxi^a Qin^a, Haosen Fan^a, Yufei Zhang^b

^a School of Chemistry and Chemical Engineering, Guangzhou University, Guangzhou 510006, China

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

ReS_2 @ NiS_2 heterostructures have been successfully prepared through anchoring ReS_2 nanosheet arrays on the surface of NiS_2 hollow nanosphere. When used as anode materials for sodium ion battery, this heterostructure electrode can achieve a high specific capacity of 400 mAh/g at the high current density of 1 A/g and still maintain a stable cycle stability even after 220 cycles.

Chinese Chemical Letters 32 (2022) 3607



Steering spatially separated dual sites on nano- TiO_2 through SMSI and lattice matching for robust photocatalytic hydrogen evolution

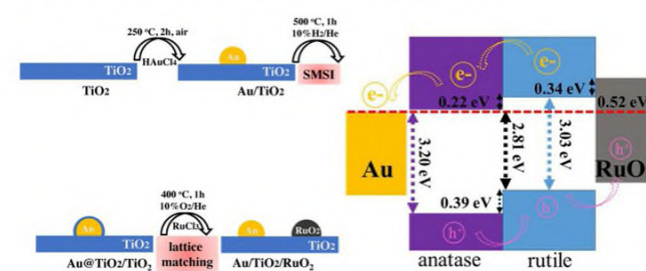
Mingjun Ma^a, Haiqing Wang^a, Hong Liu^{a,b}

^a Collaborative Innovation Center of Technology and Equipment for Biological Diagnosis and Therapy in Universities of Shandong, Institute for Advanced Interdisciplinary Research (iAIR), University of Jinan, Ji'nan 250022, China

^b State Key Laboratory of Crystal Materials, Shandong University, Ji'nan 250100, China

Spatially separated dual-site Au and RuO_2 on the nanosurface of TiO_2 ($\text{Au}/\text{TiO}_2/\text{RuO}_2$) was successfully constructed through the strong metal-support interaction (SMSI) and the lattice matching (LM) for robust photocatalytic hydrogen evolution.

Chinese Chemical Letters 32 (2022) 3613



Hollow Fe₂O₃/Co₃O₄ microcubes derived from metal-organic framework for enhanced sensing performance towards acetone

Ruixue Mo^a, Dongqiang Han^b, Zeng Ren^c, Dazhuang Yang^a, Fei Wang^a, Caolong Li^a

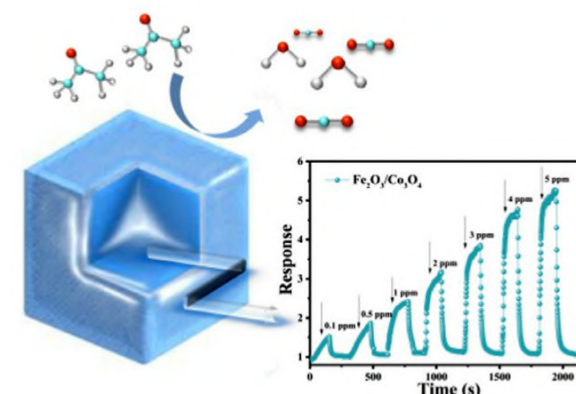
^a Key Laboratory of Biomedical Functional Materials, College of Science, China Pharmaceutical University, Nanjing 211198, China

^b Department of Physics, College of Science, China Pharmaceutical University, Nanjing 211198, China

^c Institute of Tibetan Medicine, University of Tibetan Medicine, Lhasa 850000, China

Synergistic effect of Co₃O₄ decorated Fe₂O₃ hollow microcubes showed enhanced sensing performance to acetone.

Chinese Chemical Letters 32 (2022) 3619



Proximity-induced amino-yne reaction for selective MDM4 conjugation via propargylated sulfonium

Chenshan Lian^a, Yang Li^{b,d}, Zhanfeng Hou^a, Wanjin Zhong^b, Ye Tian^a, Feng Yin^a, Zigang Li^{a,b}, Dongxian Zhou^c, Rui Wang^a

^a Pingshan Translational Medicine Center, Shenzhen Bay Laboratory, Shenzhen 518118, China

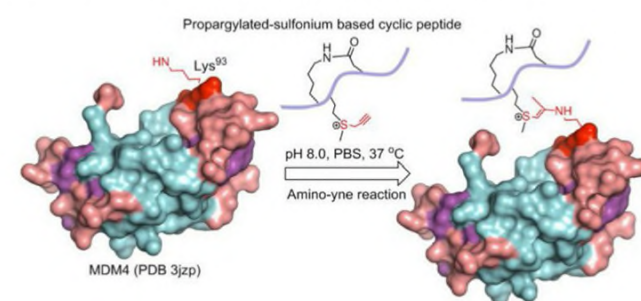
^b State Key Laboratory of Chemical Oncogenomics, School of Chemical Biology and Biotechnology, Peking University Shenzhen Graduate School, Shenzhen, 518055 China

^c Department of Breast and Thyroid Surgery, Shenzhen People's Hospital, Shenzhen 518020, China

^d Department of Student Affairs, Beihang University, Beijing 100191, China

When the propargylated sulfonium encounters the selected lysine in proximity, it happens covalently modification on protein via proximity-induced reaction.

Chinese Chemical Letters 32 (2022) 3623



Rapid alkenylation of quinoxalin-2(1H)-ones enabled by the sequential Mannich-type reaction and solar photocatalysis

Lin Huang^a, Jun Xu^a, Lei He^a, Chenfeng Liang^a, Yani Ouyang^a, Yongping Yu^b, Wanmei Li^a, Pengfei Zhang^a

^a College of Material, Chemistry and Chemical Engineering, Hangzhou Normal University, Hangzhou 311121, China

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

A rapid alkenylation of quinoxalin-2(1H)-ones enabled by a combination of Mannich-type reaction and solar photocatalysis is demonstrated.

Chinese Chemical Letters 32 (2022) 3627



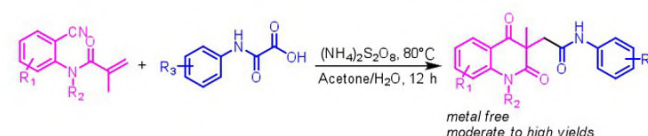
Persulfate promoted tandem radical cyclization of ortho-cyanoarylacrylamides with oxamic acids for construction of carbamoyl quinoline-2,4-diones under metal-free conditions

Qing-Qing Han, Yuan-Yuan Sun, Shao-Hui Yang, Jing-Cheng Song, Zu-Li Wang

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

An efficient and practical method for the synthesis of carbamoyl quinoline-2,4-diones via the reaction of ortho-cyanoarylacrylamides with oxamic acids was described. This cyclic reaction could be performed efficiently under metal-free conditions. Various products with functional groups could be obtained with moderate to high yields via radical mechanism.

Chinese Chemical Letters 32 (2022) 3632



Supramolecular hydrogels of self-assembled zwitterionic-peptides

Yiming Zhang^{a,b}, Yinghao Ding^c, Xinxin Li^{a,b}, Debin Zheng^{a,b}, Jie Gao^{a,b}, Zhimou Yang^{a,b}

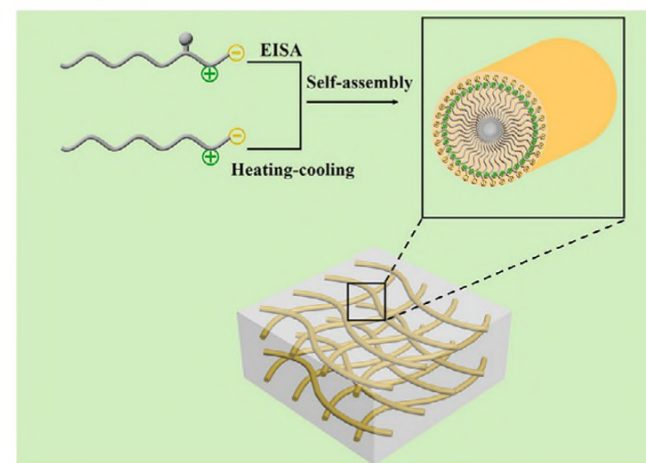
^a State Key Laboratory of Medicinal Chemical Biology, Key Laboratory of Bioactive Materials, Ministry of Education and College of Life Sciences, Nankai University, Tianjin 300071, China

^b College of Life Sciences, Key Laboratory of Bioactive Materials, Ministry of Education, and Collaboration Innovation Center of Chemical Science and Engineering (Tianjin), Nankai University, Tianjin 300071, China

^c State Key Laboratory of Medicinal Chemical Biology, College of Pharmacy, Tianjin Key Laboratory of Molecular Drug Research, Nankai University, Tianjin 300071, China

We designed two zwitterionic hydrogels of self-assembled peptides containing zwitterionic groups which can be triggered by heating-cooling and enzyme catalysis. The gel shows strong hydration capacity with good biocompatibility.

Chinese Chemical Letters 32 (2022) 3636



Visualization of endoplasmic reticulum viscosity in the liver of mice with nonalcoholic fatty liver disease by a near-infrared fluorescence probe

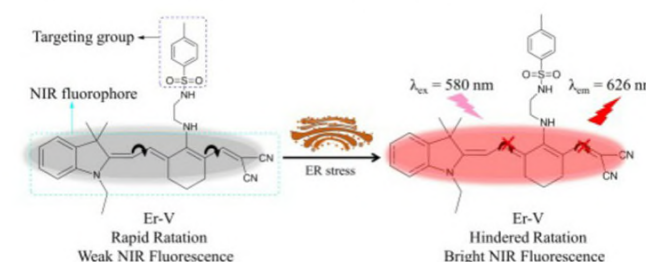
Yongqing Zhou^a, Zhenzhen Liu^a, Guangming Qiao^b, Bo Tang^a, Ping Li^a

^a College of Chemistry, Chemical Engineering and Materials Science, Key Laboratory of Molecular and Nano Probes, Ministry of Education, Institutes of Biomedical Sciences, Shandong Normal University, Ji'nan 250014, China

^b Environment Pollution Control Center, Zibo 255000, China

We report a novel ultrasensitive near-infrared fluorescence method for monitoring viscosity in the endoplasmic reticulum, enabling an accurate diagnosis and early detection of nonalcoholic fatty liver disease.

Chinese Chemical Letters 32 (2022) 3641



Fluorine-defects induced solid-state red emission of carbon dots with an excellent thermosensitivity

Haizhen Ding^a, Jiahui Xu^a, Lei Jiang^a, Chen Dong^a, Qi Meng^a, Sajid ur Rehman^b, Junfeng Wang^b, Zhishen Ge^c, Vladimir Yu. Osipov^{a,d}, Hong Bi^a

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

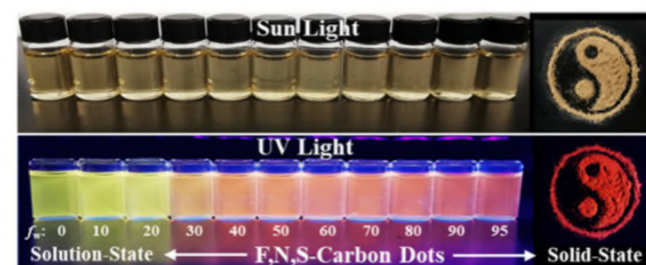
^b High Magnetic Field Laboratory, Hefei Institutes of Physical Science, Chinese Academy of Sciences, Hefei 230031, China

^c CAS Key Laboratory of Soft Matter Chemistry, Department of Polymer Science and Engineering, University of Science and Technology of China, Hefei 230601, China

^d Ioffe Institute, Russian Academy of Sciences, St. Petersburg 194021, Russian Federation

A novel fluorine-defect induced solid-state red fluorescence in carbon dots is reported. Interestingly, the solution-state F,N,S-CDs exhibits a "chameleon-like" phenomenon (emission shifts from yellow to red) in a mixed solvent of H₂O/DMSO with different H₂O fractions (*f_w*).

Chinese Chemical Letters 32 (2022) 3646



Publisher's note

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