

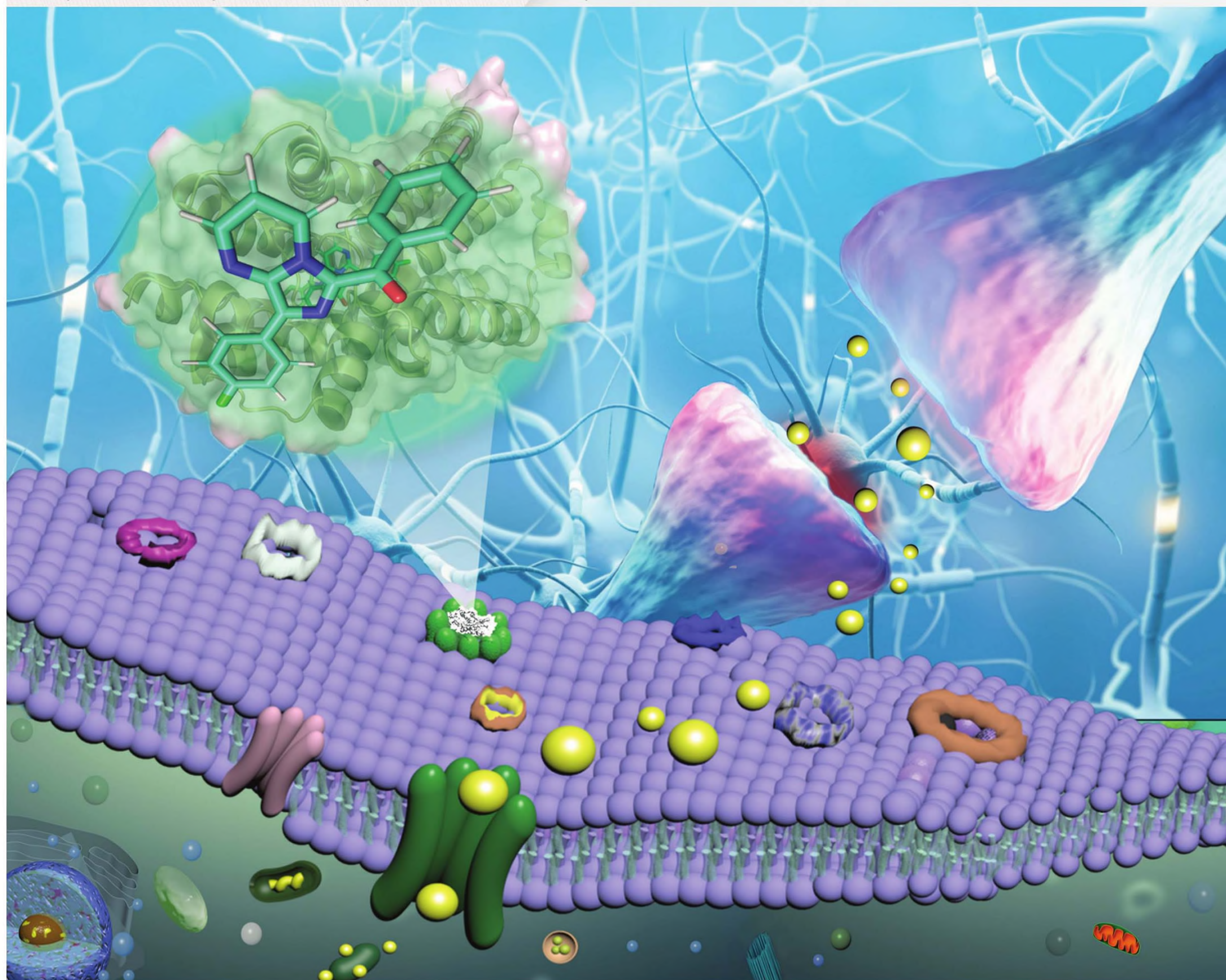
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Chinese Chemical Letters (中国化学快报)

| Volume 32 | Number 10 | OCTOBER 2021 |



COMMUNICATION

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Colorimetric recognition of melamine in milk
using novel pincer zinc complex stabilized
gold nanoparticles

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pH-Responsive amorphous room-temperature
phosphorescence polymer featuring delayed
fluorescence based on fluorescein

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



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

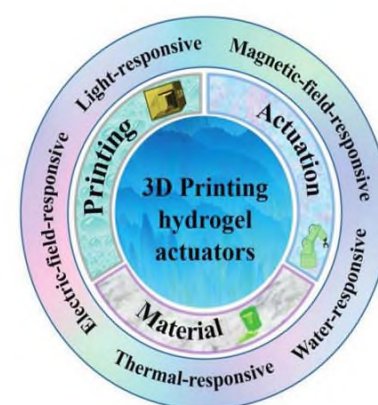
Reviews

3D printing hydrogels for actuators: A review

Aokai Zhang^a, Feng Wang^b, Lian Chen^b, Xianshuo Wei^b, Maoquan Xue^a, Feng Yang^a, Shaohua Jiang^b^a Changzhou Institute of Industry Technology, Changzhou 213164, China^b Co-Innovation Center of Efficient Processing and Utilization of Forest Resources, College of Materials Science and Engineering, Nanjing Forestry University, Nanjing 210037, China

A comprehensive overview of stimuli-responsive hydrogel actuators by 3D printing including different 3D printing technologies, actuation mechanism, applications and future acceptives was summarized and highlighted.

Chinese Chemical Letters 32 (2021) 2923

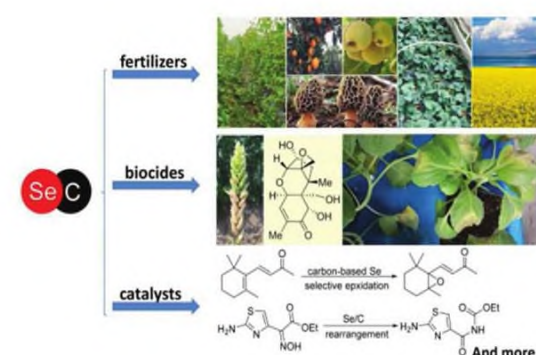


A perspective of the engineering applications of carbon-based selenium-containing materials

Xinrui Xiao^a, Zhifang Shao^{a,b}, Lei Yu^b^a Guangling College, Yangzhou University, Yangzhou 225000, China^b School of Chemistry and Chemical Engineering, Yangzhou University, Yangzhou 225002, China

Carbon-based selenium-containing materials are novel materials just being invented very recently. Owing to the low cost and bio-compatible features of carbon and selenium, these materials are very practical. The unique chemical- and bio-activities of selenium endow them very wide range of applications in catalysis, environment-protection, fertilizer and biocide development etc. Recent progresses in this field are summarized and prospected from the engineering application viewpoint in this mini-review.

Chinese Chemical Letters 32 (2021) 2933

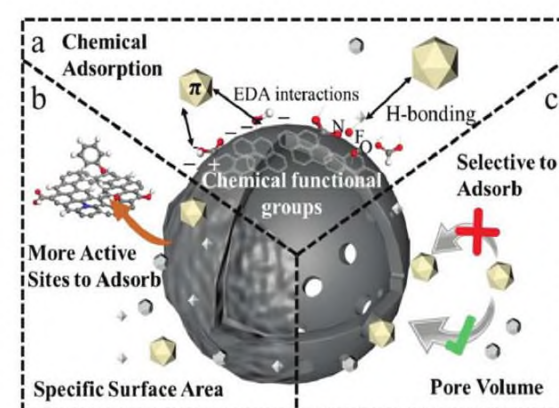


Role of biochar surface characteristics in the adsorption of aromatic compounds: Pore structure and functional groups

Xue-Fei Tan^{a,b}, Shi-Shu Zhu^{c,d}, Ru-Peng Wang^b, Yi-Di Chen^{b,e}, Pau-Loke Show^f, Feng-Fa Zhang^a, Shih-Hsin Ho^b^a College of Materials and Chemical Engineering, Heilongjiang Institute of Technology, Harbin 150050, China^b State Key Laboratory of Urban Water Resource and Environment, School of Environment, Harbin Institute of Technology, Harbin 150090, China^c School of Environmental Science and Engineering, Sun Yat-sen University, Guangzhou 510275, China^d Guangdong Provincial Key Laboratory of Environmental Pollution Control and Remediation Technology, Sun Yat-sen University, Guangzhou 510275, China^e State Key Laboratory of Urban Water Resource and Environment, School of Civil and Environmental Engineering, Harbin Institute of Technology (Shenzhen), Shenzhen 518055, China^f Department of Chemical and Environmental Engineering, Faculty of Science and Engineering, University of Nottingham Malaysia, 43500 Semenyih, Selangor, Malaysia

The underlying mechanisms of the interactions between aromatics and surface adsorption sites are summarized, which suggests that the hydrophobic effect, H-bonding, and EDA interactions, as well as Coulombic forces, correspond to the surface functional groups and pore size or volume.

Chinese Chemical Letters 32 (2021) 2939



Single atom catalyst for electrocatalysis

Chinese Chemical Letters 32 (2021) 2947

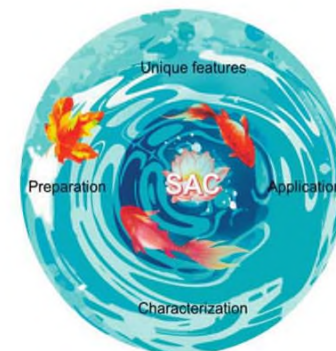
Jianan Su^a, Linzhou Zhuang^b, Shusheng Zhang^c, Qingju Liu^a, Longzhou Zhang^a, Guangzhi Hu^{a,c}

^a School of Materials and Energy and Yunnan Key Laboratory for Micro/nano Materials & Technology, Institute of Optoelectronic Information Materials, Yunnan University, Kunming 650091, China

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

^c College of Chemistry and Molecular Engineering, Zhengzhou University, Zhengzhou 450000, China

As the frontier of catalyst, single atom catalyst (SAC) with unique features is becoming hot topic recent years. Herein, we summarized the classification, preparation, characterization, and application of single atom catalyst, and the current bottlenecks and the outlooks of the SAC research are discussed.



Supported catalysts for simultaneous removal of SO₂, NO_x, and Hg⁰ from industrial exhaust gases: A review

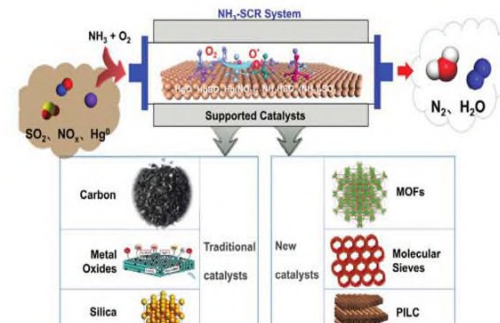
Chinese Chemical Letters 32 (2021) 2963

Ke Zhao^a, Xin Sun^a, Chi Wang^b, Xin Song^a, Fei Wang^a, Kai Li^a, Ping Ning^a

^a Faculty of Environmental Science and Engineering, Kunming University of Science and Technology, Kunming 650500, China

^b Faculty of Chemical Engineering, Kunming University of Science and Technology, Kunming 650500, China

This article summarizes and compares the difference between traditional and new supported catalysts for simultaneous removal of SO₂, NO_x and Hg⁰, and summarizes and prospects its application scope and future research directions.



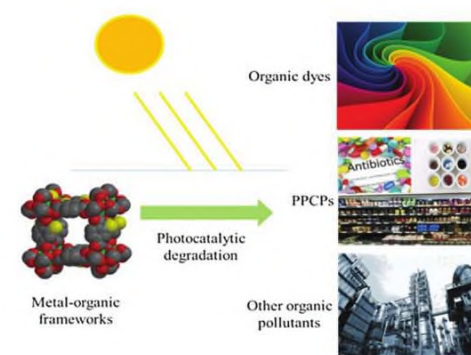
Photocatalytic degradation of organic pollutants by MOFs based materials: A review

Chinese Chemical Letters 32 (2021) 2975

Tianliang Xia, Yingchao Lin, Weizun Li, Meiting Ju

National & Local Joint Engineering Research Center on Biomass Resource Utilization, College of Environmental Science and Engineering, Nankai University, Tianjin 300350, China

Metal-organic frameworks (MOFs) are currently popular porous materials with research and application value in various fields. Aiming at the application of MOFs in photocatalysis, this paper mainly reviews the main synthesis methods of MOFs and the latest research progress of MOFs-based photocatalysts to degrade organic pollutants in water, such as organic dyes, pharmaceuticals and personal care products, and other organic pollutants.



A recent progress of room-temperature airborne ozone decomposition catalysts

Chinese Chemical Letters 32 (2021) 2985

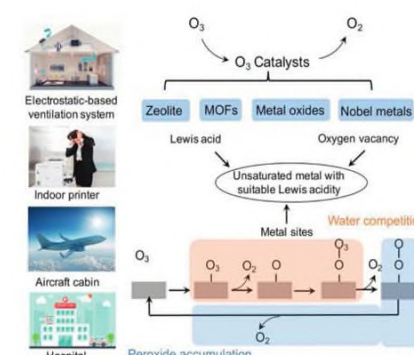
Jiami Ma^a, Ranran Cao^b, Yanliu Dang^c, Jinlong Wang^a

^a School of Resources and Environmental Engineering, Wuhan University of Technology, Wuhan 430070, China

^b School of Environment, Tsinghua University, Beijing 100084, China

^c Institute of Material Science, University of Connecticut, Storrs 06269, United States

This review presents recent advances of O₃ decomposition catalysts and provides fundamental understandings of active sites and corresponding deactivation mechanism, which is helpful for the design of new O₃ decomposition catalysts.



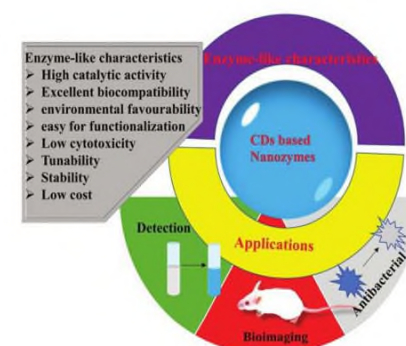
Recent progress in carbon-dots-based nanozymes for chemosensing and biomedical applications

Deming He, Minmin Yan, Pengjuan Sun, Yuanqiang Sun, Lingbo Qu, Zhaohui Li

College of Chemistry, Green Catalysis Center, Henan Joint International Research Laboratory of Green Construction of Functional Molecules and Their Bioanalytical Applications, Zhengzhou Key Laboratory of Functional Nanomaterial and Medical Theranostic, Zhengzhou University, Zhengzhou 450001, China

The advances, catalytic activities of CDs nanozymes and their applications in chemosensing and biomedical applications are highlighted and summarized. The critical issues and challenges of researching CDs nanozymes are discussed.

Chinese Chemical Letters 32 (2021) 2994



Communications

Deep insight into the charge transfer interactions in 1,2,4,5-tetracyanobenzene-phenazine cocrystal

Hongnan Wu^a, Yajing Sun^a, Lingjie Sun^{a,c}, Liwei Wang^a, Xiaotao Zhang^b, Wenping Hu^{a,c}

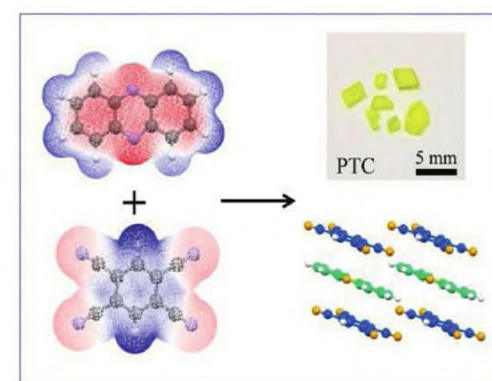
^a Tianjin Key Laboratory of Molecular Optoelectronic Sciences, Department of Chemistry, School of Science, Tianjin University, Tianjin 300072, China

^b Institute of Molecular Aggregation Science of Tianjin University, Tianjin 300072, China

^c Joint School of National University of Singapore and Tianjin University, International Campus of Tianjin University, Fuzhou 350207, China

A new 1,2,4,5-tetracyanobenzene-phenazine cocrystal with mixed stacking structure was prepared by solvent evaporation method, which exhibited different stability and unique photophysical properties from the single components.

Chinese Chemical Letters 32 (2021) 3007



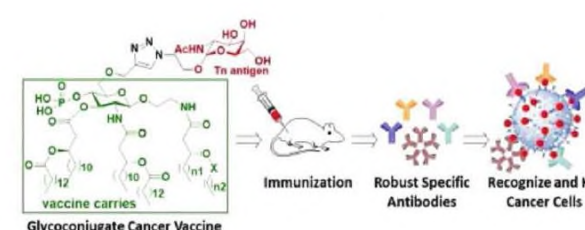
Full synthesis and bioactivity evaluation of Tn-RC-529 derivative conjugates as self-adjuvanting cancer vaccines

Lingqiang Gao, Qinghai Lian, Leilei Ma, Shiwei Su, Menglan Yang, Yuan Fang, Zhongqiu Liu, Xiang Luo, Guochao Liao

Joint Laboratory for Translational Cancer Research of Chinese Medicine of the Ministry of Education, International Institute for Translational Chinese Medicine, Guangzhou University of Chinese Medicine, Guangzhou 510006, China

Tn-based vaccines carried by RC-529 derivatives were synthesized and elicited strongly T cell-dependent immune responses without external adjuvants. The antisera induced by these conjugates could specifically recognize, bind to and kill Tn-overexpressing cancer cells.

Chinese Chemical Letters 32 (2021) 3011



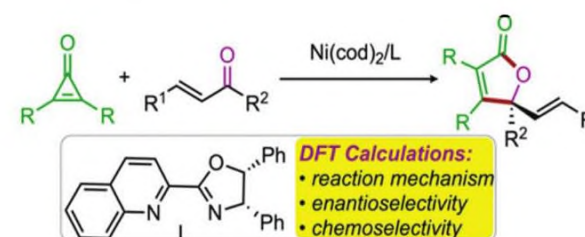
Mechanism and selectivity of nickel-catalyzed [3 + 2] cycloaddition of cyclopropenones and α,β -unsaturated ketones: A computational study

Lingling Liu, Hongli Wu, Genping Huang

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

Density functional theory calculations have been performed to investigate the mechanism and origins of enantio- and chemo-selectivities of the Ni-catalyzed [3 + 2] cycloaddition of cyclopropenones and α,β -unsaturated ketones.

Chinese Chemical Letters 32 (2021) 3015



Reviving chloroquine for anti-SARS-CoV-2 treatment with cucurbit[7]uril-based supramolecular formulation

Cheryl H.T. Kwong^a, Jingfang Mu^b, Shengke Li^a, Yaohui Fang^b, Qianyun Liu^c, Xiangjun Zhang^a, Hiotong Kam^a, Simon M.Y. Lee^a, Yu Chen^c, Fei Deng^b, Xi Zhou^{b,c}, Ruibing Wang^a

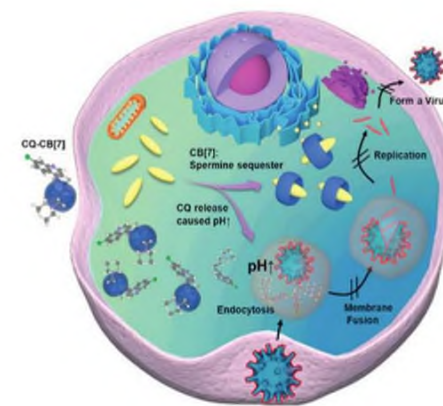
^a State Key Laboratory of Quality Research in Chinese Medicine, Institute of Chinese Medical Sciences, University of Macau, Macau 999078, China

^b State Key Laboratory of Virology, Wuhan Institute of Virology, Center for Biosafety Mega-Science, Chinese Academy of Sciences (CAS), Wuhan 430071, China

^c State Key Laboratory of Virology, College of Life Sciences, Wuhan University, Wuhan 430072, China

Chloroquine (CQ), an antimalarial drug, was found to exhibit promising antiviral activity *in vitro* and *in vivo* at a high dosage, thus CQ was approved by the FDA for the emergency use authorization (EUA) in the fight against COVID-19 in the US, but later was revoked the EUA status due to the severe clinical toxicity. Herein, we show that supramolecular formulation of CQ by a macrocyclic host, cucurbit[7]uril (CB[7]), reduced its non-specific toxicity and improved its antiviral activity against coronavirus, working in synergy with CB[7].

Chinese Chemical Letters 32 (2021) 3019



Colorimetric recognition of melamine in milk using novel pincer zinc complex stabilized gold nanoparticles

Xiaoling Bao^a, Jianhong Liu^b, Qingshu Zheng^b, Lixin Duan^b, Yuzhu Zhang^a, Junlong Qian^a, Tao Tu^{b,c,d}

^a Institute of Quality Inspection of Food and Cosmetics, Shanghai Institute of Quality Inspection and Technical Research, Shanghai 200233, China

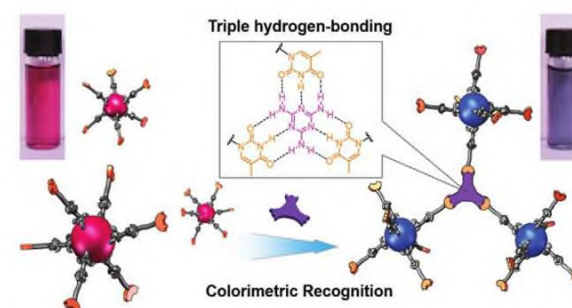
^b Shanghai Key Laboratory of Molecular Catalysis and Innovative Materials, Department of Chemistry, Fudan University, Shanghai 200438, China

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

^d College of Chemistry and Molecular Engineering, Zhengzhou University, Zhengzhou 450001, China

A convenient colorimetric approach for visual detection of melamine in milk was realized by using gold nanoparticles (AuNPs) stabilized by an unsymmetrical terpyridyl zinc complex with a detection limit as low as 2.4 ppb.

Chinese Chemical Letters 32 (2021) 3023



Decatungstate as a direct hydrogen atom transfer photocatalyst for synthesis of trifluoromethylthioesters from aldehydes

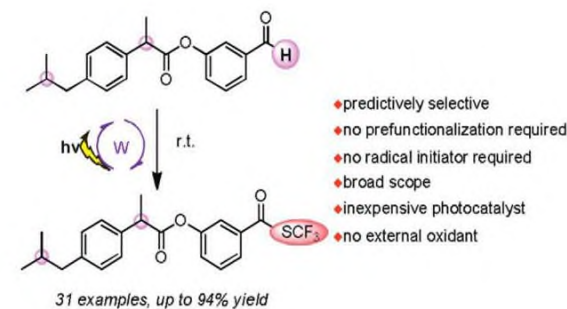
Xiaochen Wang^a, Jianyang Dong^a, Yuxiu Liu^a, Hongjian Song^a, Qingmin Wang^{a,b}

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

^b Collaborative Innovation Center of Chemical Science and Engineering (Tianjin), Tianjin 300071, China

Trifluoromethylthiolation reactions of aldehydes are operated under mild condition at room temperature. The developed method tolerates a series of functional groups and has a broad substrate scope, using TBADT as HAT photoredox catalyst, and PhthSCF₃ as SCF₃ source to afford trifluoromethylthioesters.

Chinese Chemical Letters 32 (2021) 3027



Synthesis of [6-6-6] ABE tricyclic ring analogues of methyllycaconitine

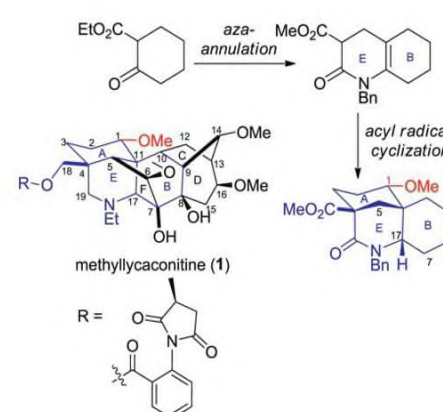
Dan Xiao^a, Xin Zhao^a, Jiang Lei^a, Mengqian Zhu^a, Liang Xu^{a,b}

^a Key Laboratory of Drug Targeting and Drug Delivery Systems of the Ministry of Education, West China School of Pharmacy, Sichuan University, Chengdu 610041, China

^b State Key Laboratory of Biotherapy, West China Hospital, West China Medical School, Sichuan University, Chengdu 610041, China

A new synthesis of the bridged [6-6-6] ABE tricyclic ring analogues of methyllycaconitine with the C-1 oxygenated substituents has been developed using an efficient aza-annulation of β -enamino ketone followed by a facile decarboxylation to form BE rings. Subsequent elaboration to form the A ring was achieved by a transannular acyl radical cyclization with concomitant equipment of the key C-1 oxygen functionality.

Chinese Chemical Letters 32 (2021) 3031



Host-guest inclusion for enhancing anticancer activity of pemetrexed against lung carcinoma and decreasing cytotoxicity to normal cells

Junyi Chen^a, Yahan Zhang^b, Yadan Zhang^b, Liang Zhao^c, Longming Chen^b, Yao Chai^c, Zhao Meng^b, Xueshun Jia^{a,c}, Qingbin Meng^b, Chunju Li^{a,c}

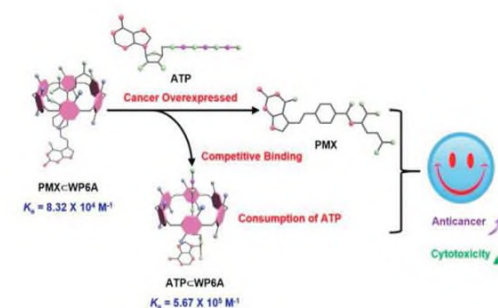
^a College of Environmental and Chemical Engineering, Shanghai University, Shanghai 200444, China

^b State Key Laboratory of Toxicology and Medical Countermeasures, Beijing Institute of Pharmacology and Toxicology, Beijing 100850, China

^c Department of Chemistry, Center for Supramolecular Chemistry and Catalysis, Shanghai University, Shanghai 200444, China

The encapsulation of pemetrexed (PMX) within a water-soluble pillar[6]arene (WP6A) is shown to decrease the chemotherapeutic agent's cytotoxicity to normal cells. Competitive binding to ATP triggers thorough release of PMX and simultaneously inhibits ATP hydrolysis due to formation of ATP/WP6A complex, resulting in enhancing anticancer activity against ATP-overexpressed cancer cells.

Chinese Chemical Letters 32 (2021) 3034



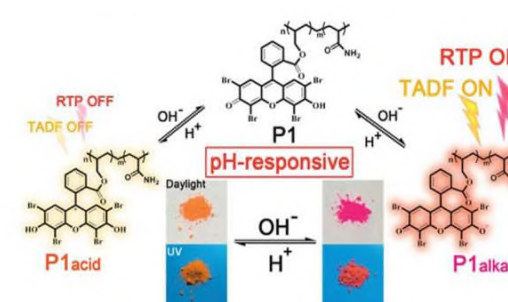
pH-Responsive amorphous room-temperature phosphorescence polymer featuring delayed fluorescence based on fluorescein

Guanghui Wang, Zifei Wang, Bingbing Ding, Xiang Ma

Key Laboratory for Advanced Materials and Feringa Nobel Prize Scientist Joint Research Center, School of Chemistry and Molecular Engineering, East China University of Science and Technology, Shanghai 200237, China

Featuring pH-responsiveness, amorphous material based on fluorescein emitting roomtemperature phosphorescence can be applied to detect gas leaking.

Chinese Chemical Letters 32 (2021) 3039



Boronic acid-containing carbon dots array for sensitive identification of glycoproteins and cancer cells

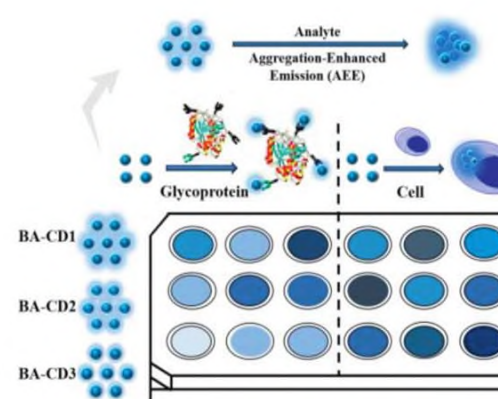
Shuai Chen^a, Xuwei Zhang^b, Yongliang Yu^b, Jianhua Wang^b

^a College of Life and Health Sciences, Northeastern University, Shenyang 110169, China

^b Research Center for Analytical Sciences, Department of Chemistry, College of Sciences, Northeastern University, Shenyang 110819, China

Fluorescence sensor array based on three boronic acid-containing carbon dots is designed and fabricated for sensitive identification of glycoproteins and cancer cells.

Chinese Chemical Letters 32 (2021) 3043



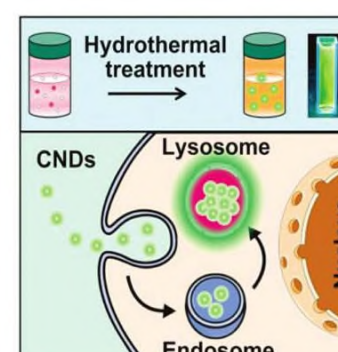
Ultrasmall green-emitting carbon nanodots with 80% photoluminescence quantum yield for lysosome imaging

Xiaokai Chen, Xiaodong Zhang, Fu-Gen Wu

State Key Laboratory of Bioelectronics, School of Biological Science and Medical Engineering, Southeast University, Nanjing 210096, China

Ultrasmall amine-terminated green-photoluminescent carbon nanodots with a high photoluminescence quantum yield of 80% were synthesized via a hydrothermal route for long-term imaging of lysosomes in live cells.

Chinese Chemical Letters 32 (2021) 3048



Real-time identification of gut microbiota with aminopeptidase N using an activable NIR fluorescent probe

Lei Feng^a, Zhenhao Tian^c, Ming Zhang^a, Xin He^a, Xiangge Tian^a, Zhenlong Yu^a, Xiaochi Ma^{a,b}, Chao Wang^a

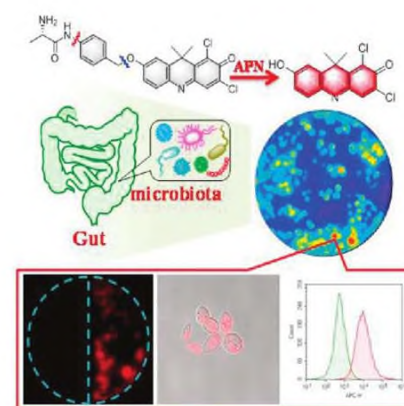
^a Dalian Key Laboratory of Metabolic Target Characterization and Traditional Chinese Medicine Intervention, College of Pharmacy, Academy of Integrative Medicine, The National & Local Joint Engineering Research Center for Drug Development of Neurodegenerative Disease, Dalian Medical University, Dalian 116044, China

^b Jiangsu Key Laboratory of New Drug Research and Clinical Pharmacy, Xuzhou Medical University, Xuzhou 221004, China

^c School of Life Sciences, Northwestern Polytechnical University, Xi'an 710072, China

A NIR fluorescent probe was developed for intestinal microbiota identification possessing active APN from human feces.

Chinese Chemical Letters 32 (2021) 3053



Monitoring intracellular pH fluctuation with an excited-state intramolecular proton transfer-based ratiometric fluorescent sensor

Bin Feng^{a,b,c}, Yingli Zhu^{a,b,c}, Jiaxin Wu^{a,b,c}, Xueyan Huang^{a,b,c}, Rong Song^{a,b,c}, Liu Huang^{a,b,c}, Xueping Feng^d, Wenbin Zeng^{a,b,c}

^a Xiangya School of Pharmaceutical Sciences, Central South University, Changsha 410013, China

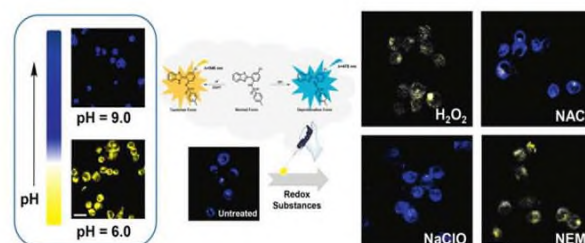
^b The Molecular Imaging Research Center, Central South University, Changsha 410013, China

^c Hunan Key Laboratory of Diagnostic and Therapeutic Drug Research for Chronic Diseases, Central South University, Changsha 410013, China

^d Xiangya Hospital, Central South University, Changsha 410013, China

An excited-state intramolecular proton transfer-based fluorescent sensor was designed and synthesized for ratiometric sensing of cellular pH via the protonation/deprotonation of sulfonamide moiety, which can be employed to monitor the intracellular pH fluctuation under oxidative stress.

Chinese Chemical Letters 32 (2021) 3057



Novel CD-MOF NIR-II fluorophores for gastric ulcer imaging

Yishen Liu^{a,b,d}, Yuzhen Yuzhen^a, Tian Tian^{a,b}, Wumei Wang^a, Jinxia Nong^{b,d}, Xue Qiao^{a,b}, Fuchun Xu^a, Jianfeng Gao^c, Xuechuan Hong^{a,b,d}

^a State Key Laboratory of Virology, College of Science, Innovation Center for Traditional Tibetan Medicine Modernization and Quality Control, Medical College, Tibet University, Lhasa 850000, China

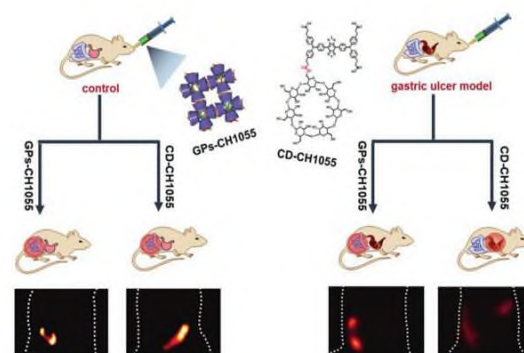
^b Key Laboratory of Combinatorial Biosynthesis and Drug Discovery (MOE), Hubei Province Engineering and Technology Research Center for Fluorinated Pharmaceuticals, Wuhan University School of Pharmaceutical Sciences, Wuhan 430071, China

^c Center for Animal Experiment, Wuhan University, Wuhan 430071, China

^d Shenzhen Institute of Wuhan University, Shenzhen 518057, China

This report presents the first cyclodextrin metal-organic frameworks based NIR-II probe GPs-CH1055 for gastric ulcer dynamic NIR-II imaging and diagnosis.

Chinese Chemical Letters 32 (2021) 3061



Molecular engineering and biomedical applications of ultra-sensitive fluorescent probe for Ag⁺

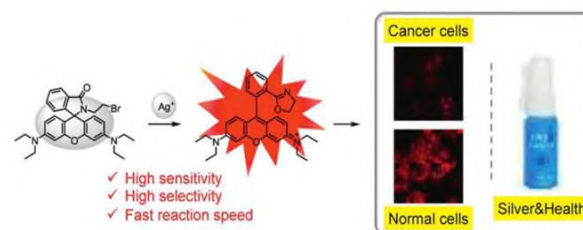
Jianfei Kan^a, Xiaonan Zhou^a, Yanyan Sun^a, Liyuan Sun^a, Hao Chu^a, Zhaosheng Qian^b, Jin Zhou^a

^a School of Pharmacy, Maternal and Child Health Hospital of Weifang Medical University, Weifang Medical University, Weifang 261053, China

^b College of Chemistry and Life Sciences, Zhejiang Normal University, Jinhua 321004, China

A rapid fluorescent probe was constructed to selectively and sensitively detect Ag⁺ in nonantibiotic fungicide and successfully applied to distinguish homologous cancer cells and normal cell.

Chinese Chemical Letters 32 (2021) 3066



Cocrystallization-like strategy for the codelivery of hydrophobic and hydrophilic drugs in a single carrier material formulation

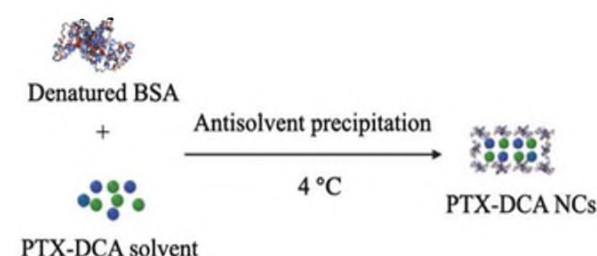
Yi Li^a, Chao Teng^a, Helena S. Azevedo^b, Lifang Yin^a, Wei He^a

^a School of Pharmacy, China Pharmaceutical University, Nanjing 210009, China

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

By using a cocrystallization-like strategy, a hydrophilic drug can be formulated into in a drug's nanocrystals for codelivery.

Chinese Chemical Letters 32 (2021) 3071



Redox-responsive micelles integrating catalytic nanomedicine and selective chemotherapy for effective tumor treatment

Ronghua Jin^{a,c}, Zhongning Liu^b, Tao Liu^a, Pingyun Yuan^a, Yongkang Bai^a, Xin Chen^a

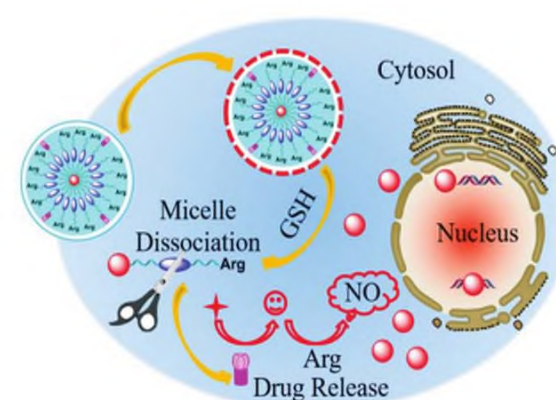
^a School of Chemical Engineering and Technology, Shaanxi Key Laboratory of Energy Chemical Process Intensification, Institute of Polymer Science in Chemical Engineering, Xi'an Jiao Tong University, Xi'an 710049, China

^b Department of Prosthodontics, Peking University School and Hospital of Stomatology, National Engineering Laboratory for Digital and Material Technology of Stomatology, Beijing Key Laboratory of Digital Stomatology, Beijing 100081, China

^c Pharmaceutical College, Guangxi Medical University, Nanning 530021, China

Carrier-free nanomicelles were fabricated by co-assembly of the doxorubin (DOX), arginine (Arg) and glucose oxidase (GOx). The nanomicelles not only exhibit a high loading capacity of therapeutic drugs for effective tumor therapy but integrate the chemotherapy, gas therapy, and starvation therapy to exert synergistic actions for precise tumor therapy.

Chinese Chemical Letters 32 (2021) 3076



Construction and regulation of imidazo[1,5-*a*]pyridines with AIE characteristics via iodine mediated Csp²-H or Csp-H amination

Jun Zhang^a, Mengyao She^{a,b}, Lang Liu^a, Mengdi Liu^a, Zhaohui Wang^a, Hua Liu^a, Wei Sun^a, Xiaogang Liu^c, Ping Liu^a, Shengyong Zhang^a, Jianli Li^a

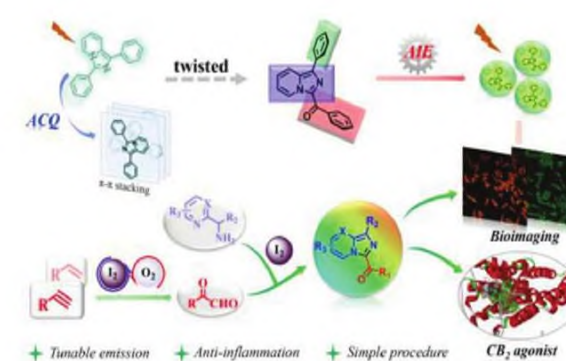
^a Ministry of Education Key Laboratory of Synthetic and Natural Functional Molecule Chemistry, College of Chemistry & Materials Science, Northwest University, Xi'an 710127, China

^b Lab of Tissue Engineering, Provincial Key Laboratory of Biotechnology of Shaanxi, Ministry of Education Key Laboratory of Resource Biology and Modern Biotechnology, The College of Life Sciences, Faculty of Life and Health Science, Northwest University, Xi'an 710127, China

^c Fluorescence Research Group, Singapore University of Technology and Design, Singapore 487372, Singapore

The optical properties of imidazo[1,5-*a*]pyridine based fluorophores were completely remodeled, leading to a series of new AIE reagents by regulating the stereochemical structures and limiting the intermolecular rotations. We presented a metal-free and highly efficient domino strategy, which enables the synthesis of these molecules from phenylacetylenes or styrenes under mild conditions. The obtained products showed both bioimaging utilities and anti-inflammation activities.

Chinese Chemical Letters 32 (2021) 3083



Nanoscale metal organic frameworks inhibition of pyruvate kinase of M2

Xiangling Ren^{a,b,c,d}, Xinyuan Huang^a, Qiong Wu^{a,c,d}, Longfei Tan^{a,c}, Changhui Fu^{a,c}, Yi Chen^b, Xianwei Meng^{a,c}

^a Laboratory of Controllable Preparation and Application of Nanomaterials, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing 100190, China

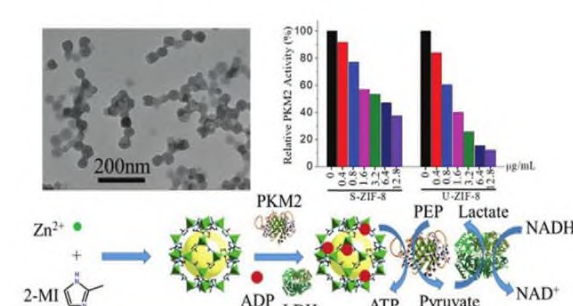
^b Key Laboratory of Photochemical Conversion and Optoelectronic Materials, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing 100190, China

^c CAS Key Laboratory of Cryogenics, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing 100190, China

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

Nanoscale ZIF-8 had a high inhibitory effect on pyruvate kinase of M2.

Chinese Chemical Letters 32 (2021) 3087



Laser-assisted synthesis of cobalt@N-doped carbon nanotubes decorated channels and pillars of wafer-sized silicon as highly efficient three-dimensional solar evaporator

Yiwei Zhao^{a,b}, Haifeng Yuan^b, Xiaofei Zhang^a, Guobin Xue^b, Jiebin Tang^b, Yuke Chen^b, Xiaoli Zhang^c, Weijia Zhou^b, Hong Liu^{a,b}

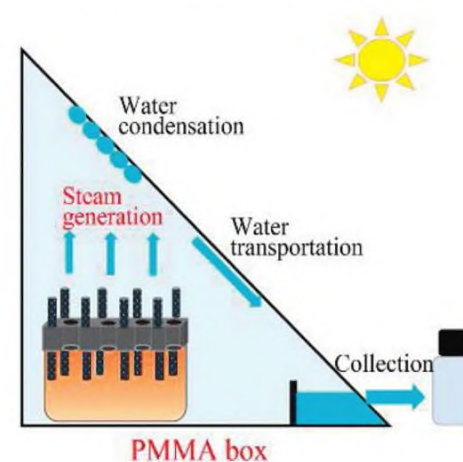
^a State Key Laboratory of Crystal Materials, Shandong University, Ji'nan 250100, China

^b 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

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

The Co@NCNTs/Si pillars with channels was assembled to a suitable pure water gathering device, which was applied in seawater desalination and sewage purification to produce pure water by utilizing solar energy.

Chinese Chemical Letters 32 (2021) 3090



A highly stable terbium metal-organic framework for efficient detection of picric acid in water

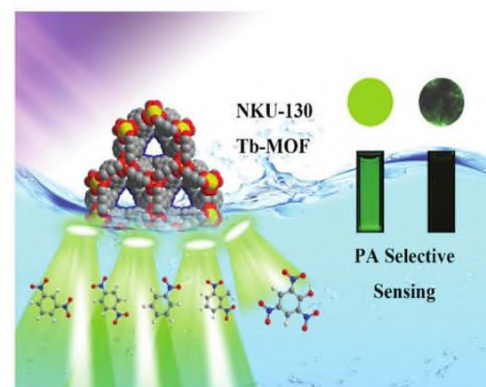
Zi-Ying Li^a, Zhao-Quan Yao^a, Rui Feng^b, Ming-Hua Sun^b, Xiao-Tian Shan^b, Zi-Hao Su^b, Wei Li^a, Xian-He Bu^{a,b}

^a TKL of Metal and Molecule Based Material Chemistry & School of Materials Science and Engineering, Tianjin 300350, China

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

A highly stable fluorescent terbium metal-organic framework exhibits high sensitivity, excellent selectivity and good recyclability for sensing picric acid in water.

Chinese Chemical Letters 32 (2021) 3095



Two-step colloidal synthesis of micron-scale Bi₂O₂Se nanosheets and their electrostatic assembly for thin-film photodetectors with fast response

Xixi Pang^{a,b}, Yingtao Zhao^{a,b}, Xiangxiang Gao^{a,b}, Guoqi Wang^{a,b}, Hao Sun^{a,b}, Jun Yin^{a,b}, Jian Zhu^{a,b,c}

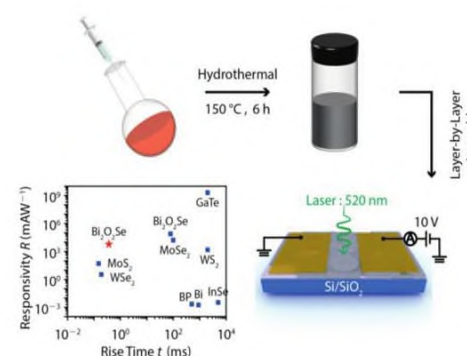
^a School of Materials Science and Engineering, Nankai University, Tianjin 300350, China

^b National Institute for Advanced Materials, Nankai University, Tianjin 300350, China

^c Tianjin Key Laboratory for Rare Earth Materials and Applications, Nankai University, Tianjin 300350, China

Micron-sized Bi₂O₂Se nanosheets are synthesized through a controllable two-step colloidal synthesis method and electrostatically assembled into thin films, from which photodetectors with high responsivity and fast response are fabricated.

Chinese Chemical Letters 32 (2021) 3099



Water molecule-induced hydrogen bonding between cellulose nanofibers toward highly strong and tough materials from wood aerogel

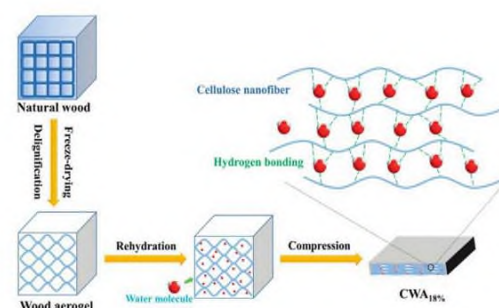
Xiaoshuai Han^a, Zhenxing Wang^b, Linhu Ding^a, Lian Chen^a, Feng Wang^a, Junwen Pu^b, Shaohua Jiang^a

^a Co-Innovation Center of Efficient Processing and Utilization of Forest Resources, College of Materials Science and Engineering, Nanjing Forestry University, Nanjing 210037, China

^b MOE Engineering Research Center of Forestry Biomass Materials and Bioenergy, Beijing Forestry University, Beijing 100083, China

Inspired by nacre, a lightweight, strong and tough cellulosic material was fabricated by means of water molecules-induced hydrogen bonding between cellulose nanofibers.

Chinese Chemical Letters 32 (2021) 3105



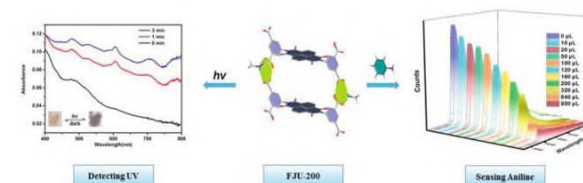
Dual-functional hydrogen-bonded organic frameworks for aniline and ultraviolet sensitive detection

Zhijun Ke, Kexin Chen, Zhenzhen Li, Jie Huang, Zizhu Yao, Wen Dai, Xiaofan Wang, Chulong Liu, Shengchang Xiang, Zhangjing Zhang

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

A dual-functional hydrogen-bonded organic frameworks **FJU-200** for aniline and ultraviolet sensitive detection.

Chinese Chemical Letters 32 (2021) 3109



FeBO₃ as a low cost and high-performance anode material for sodium-ion batteries

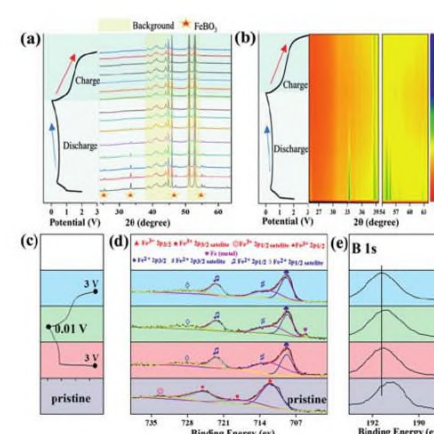
Baozhu Wu^a, Shuo Qi^b, Xikai Wu^a, Haoli Wang^a, Qiangqiang Zhuang^a, Huimin Yi^a, Pu Xu^a, Zhennan Xiong^a, Gejun Shi^a, Shuangqiang Chen^b, Baofeng Wang^a

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

^b Department of Chemical Engineering, School of Environmental and Chemical Engineering, Shanghai University, Shanghai 200444, China

FeBO₃ was synthesized via a simple solid-phase method and used as anode material for sodium-ion batteries for the first time. And the sodium storage mechanism of FeBO₃ was studied by *in-situ* XRD and *ex-situ* XPS and the possible reactions during cycling were proposed.

Chinese Chemical Letters 32 (2021) 3113



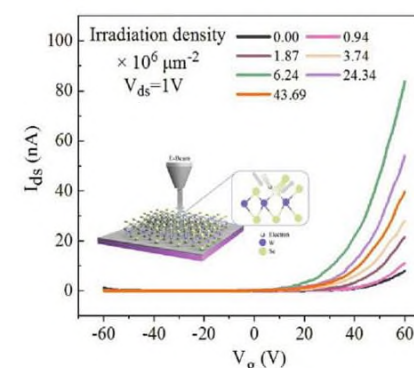
Controllable n-type doping in WSe₂ monolayer via construction of anion vacancies

Mengchen Wang, Wenhui Wang, Yong Zhang, Xing Liu, Lei Gao, Xiaoxue Jing, Zhenliang Hu, Junpeng Lu, Zhenhua Ni

School of Physics and Key Laboratory of MEMS of the Ministry of Education, Southeast University, Nanjing 211189, China

A straightforward and effective method to realize controllable n-type doping in WSe₂ monolayer by electron beam irradiation was proposed, and the doping area and degree can be precisely controlled with high resolution.

Chinese Chemical Letters 32 (2021) 3118



Formation mechanism and properties of NiCoFeLDH@ZIF-67 composites

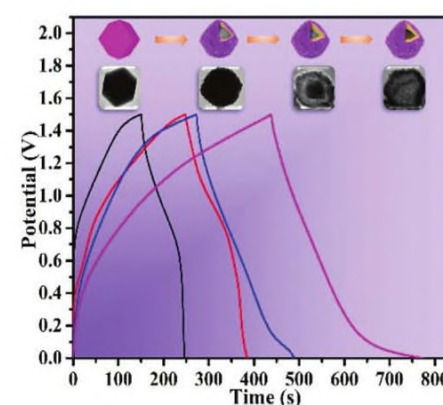
Huijie Zhou^a, Weiyi Cao^a, Nuochen Sun^a, Li Jiang^a, Yong Liu^b, Huan Pang^a

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

^b Collaborative Innovation Center of Nonferrous Metals of Henan Province, Henan Key Laboratory of High Temperature Structural and Functional Materials, School of Materials Science and Engineering, Henan University of Science and Technology, Luoyang, 471023 China

As the electrode of supercapacitor, the storage capacity of the hollow structure NiCoFeLDH@ZIF-67 composite is better than that of ZIF-67 and other structural materials.

Chinese Chemical Letters 32 (2021) 3123



2D/2D atomic double-layer WS₂/Nb₂O₅ shell/core nanosheets with ultrafast interfacial charge transfer for boosting photocatalytic H₂ evolution

Bo Lin^a, Hao Chen^b, Yao Zhou^c, Xiao Luo^a, Dan Tian^d, Xiaoqing Yan^e, Ruihuan Duan^f, Jun Di^f, Lixing Kang^f, Aimin Zhou^b, Guidong Yang^e, Yonghui Li^g, Jiadong Zhou^h, Zheng Liu^f, Fucui Liu^a

^a School of Optoelectronic Science and Engineering, University of Electronic Science and Technology of China, Chengdu 611731, China

^b Wuhan Second Ship Design and Research Institute, Wuhan 430200, China

^c School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore 637371, Singapore

^d College of Materials Science and Engineering, Co-Innovation Center of Efficient Processing and Utilization of Forest Resources, Nanjing Forestry University, Nanjing 210037, China

^e XJTU-Oxford International Joint Laboratory for Catalysis, School of Chemical Engineering and Technology, Xi'an Jiaotong University, Xi'an 710049, China

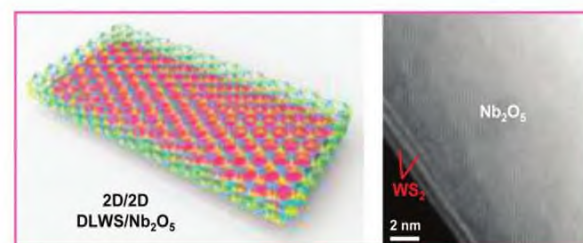
^f School of Materials Science and Engineering, Nanyang Technological University, Singapore 639798, Singapore

^g Department of Physics and Tianjin Key Laboratory of Low Dimensional Materials Physics and Preparing Technology, School of Science, Tianjin University, Tianjin 300350, China

^h Key Lab of Advanced Optoelectronic Quantum Architecture and Measurement (Ministry of Education), Beijing Key Lab of Nanophotonics & Ultrafine Optoelectronic Systems, and School of Physics, Beijing Institute of Technology, Beijing 100081, China

Novel 2D/2D atomic few-layer WS₂/Nb₂O₅ shell/core nanosheet is constructed by a new *in-situ* vapor-phase growth method, which shows ultrafast interfacial charge transfer due to the presence of the unusual 2D/2D shell/core interface.

Chinese Chemical Letters 32 (2021) 3128



Ion-induced white-light-emitting polymeric hydrogels with high mechanical strength and reversible stimuli-responsive properties

Shanshan Chen^{a,b}, Liying Yin^c, Lin Liu^c, Ning Zhang^{a,c}, Dewen Dong^{a,b}

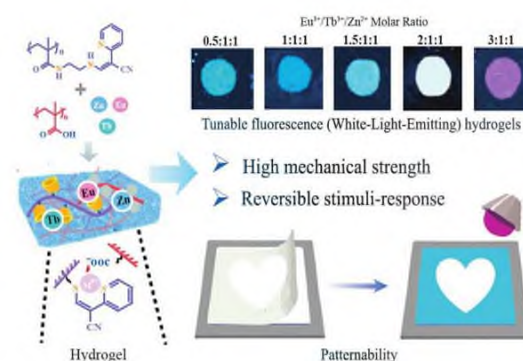
^a CAS Key Laboratory of High-Performance Synthetic Rubber and its Composite Materials, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, Changchun 130022, China

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

^c Department of Chemistry, Northeast Normal University, 5268 Renmin Street, Changchun 130024, China

We have developed a model design for facile fabrication of multicolor (including white light) fluorescent dual-polymer hydrogels by tuning the stoichiometry of metal ions. The hydrogels exhibit high mechanical strength and reversible acidity/alkalinity stimuli-responsive properties, which can further lead to fluorescent patterned hydrogels.

Chinese Chemical Letters 32 (2021) 3133



First-principles study on Fe₂B₂ as efficient catalyst for nitrogen reduction reaction

Wei Song^a, Jia Wang^{c,d}, Ling Fu^b, Chaozheng He^{c,d}, Chenxu Zhao^{c,d}, Yongliang Guo^a, Jinrong Huo^e, Guohui Dong^f

^a School of Science, Henan Institute of Technology, Xinxiang 453003, China

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

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

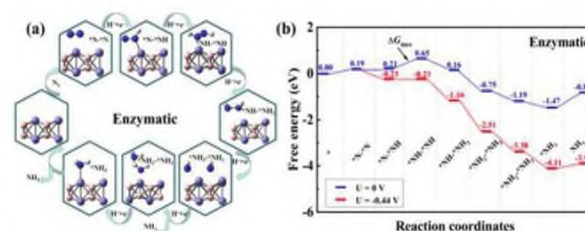
^d Institute of Environmental and Energy Catalysis, School of Materials Science and Chemical Engineering, Xi'an Technological University, Xi'an 710021, China

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

^f School of Environmental Science and Engineering, Shaanxi University of Science and Technology, Xi'an 710021, China

The efficient and stable electrocatalysts of Fe₂B₂ can promote N₂ adsorption and accelerate electron transfer using an enzymatic mechanism to activate the NRR with lower limiting potential (−0.44 V).

Chinese Chemical Letters 32 (2021) 3137



Nanofibrils in 3D aligned channel arrays with synergistic effect of Ag/NPs for rapid and highly efficient electric field disinfection

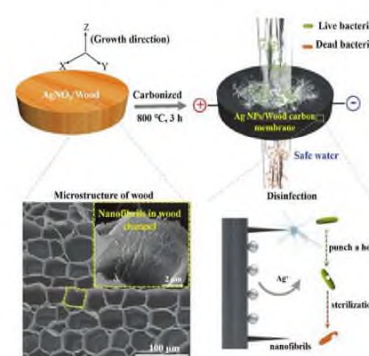
Zi Yang^a, Hongyuhang Ni^b, Pu Liu^b, Hanwen Liu^a, Ke Yang^a, Zhengze Zhang^a, Baodui Wang^a, Xiangkai Li^b, Fengjuan Chen^a

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

^b Ministry of Education Key Laboratory of Cell Activities and Stress Adaptations, School of Life Sciences, Lanzhou University, Lanzhou 730000, China

Silver nanoparticles anchoring wood carbon (Ag NPs/WC) membrane is developed as cost-effective, high flux, scalable filter for highly efficient electric field disinfection of water. Under electric field of 4 V voltage, the designed membrane achieved more than 5 log (99.999%) disinfection performance for different model bacteria.

Chinese Chemical Letters 32 (2021) 3143



Prediction of stable BC_3N_2 monolayer from first-principles calculations: Stoichiometry, crystal structure, electronic and adsorption properties

Jiahui Yu^{a,b,d}, Chaozheng He^{a,d}, Chunying Pu^c, Ling Fu^e, Dawei Zhou^c, Kun Xie^a, Jinrong Huo^f, Chenxu Zhao^{a,d}, Lingmin Yu^{a,d}

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

^b School of Mathematics and Physics, Nanyang Institute of Technology, Nanyang 473004, China

^c College of Physics and Electronic Engineering, Nanyang Normal University, Nanyang 473061, China

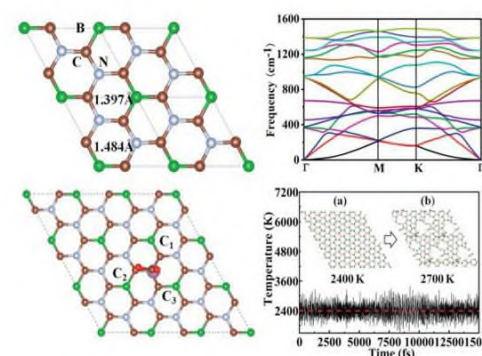
^d Shaanxi Key Laboratory of Optoelectronic Functional Materials and Devices, School of Materials Science and Chemical Engineering, Xi'an Technological University, Xi'an 710021, China

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

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

We predicted a two dimensional BC_3N_2 with metallic character and potential application in surface catalysis.

Chinese Chemical Letters 32 (2021) 3149



Target-induced mimic enzyme deactivation based on mixed-node metal-organic frameworks for colorimetric assay of hydrogen sulfide

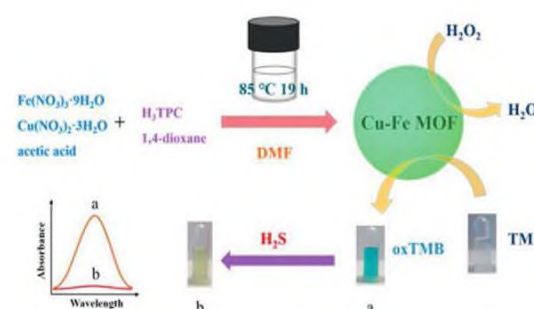
Fenfen Zhou^a, Yanli Zhou^b, Jianwei Zhang^b, Hui Dong^{a,b}, Lantao Liu^{a,b}, Yintang Zhang^b, Maotian Xu^{a,b}

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

^b Henan Key Laboratory of Biomolecular Recognition and Sensing, College of Chemistry and Chemical Engineering, Shangqiu Normal University, Shangqiu 476000, China

Colorimetric sensing for hydrogen sulfide was designed by the target-induced deactivation of mixed-node Cu-Fe MOFs.

Chinese Chemical Letters 32 (2021) 3155



Effect of load-cycling amplitude on performance degradation for proton exchange membrane fuel cell

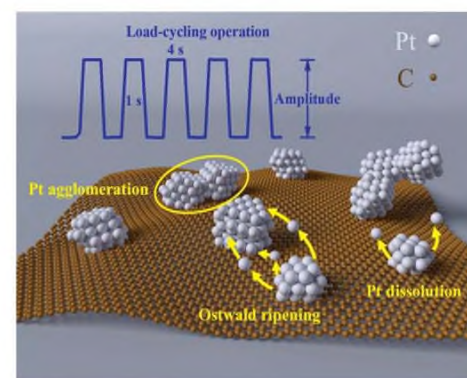
Kun Wang^a, Ning Li^a, Yanan Yang^a, Shaojie Ke^a, Zhengping Zhang^{a,b}, Meiling Dou^{a,b}, Feng Wang^{a,b}

^a State Key Laboratory of Chemical Resource Engineering, Beijing Key Laboratory of Electrochemical Process and Technology for Materials, Beijing University of Chemical Technology, Beijing 100029, China

^b Beijing Advanced Innovation Center for Soft Matter Science and Engineering, Beijing University of Chemical Technology, Beijing 100029, China

The effect of load amplitude on the performance degradation of PEMFC was investigated, and results show that a higher amplitude load-cycling operation leads to a larger percentage of performance loss due to the more serious degradation of cathodic catalyst.

Chinese Chemical Letters 32 (2021) 3159



Oxygen dependent oxidation of trimethoprim by sulfate radical: Kinetic and mechanistic investigations

Xuerui Yang^{a,b}, Xi Ding^{a,b}, Lei Zhou^{a,b,c}, Yuefei Ji^d, Guangli Xiu^{a,b,c}

^a Shanghai Environmental Protection Key Laboratory for Environmental Standard and Risk Management of Chemical Pollutants, School of Resources & Environmental Engineering, East China University of Science and Technology, Shanghai 200237, China

^b State Environmental Protection Key Lab of Environmental Risk Assessment and Control on Chemical Processes, School of Resources & Environmental Engineering, East China University of Science and Technology, Shanghai 200237, China

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

^d College of Resources and Environmental Sciences, Nanjing Agricultural University, Nanjing 210095, China

In the presence of dissolved oxygen (DO), the carbon-centered radical generated by TMP reacting with $\text{SO}_4^{\cdot-}$, could combine with oxygen, leading to the formation of peroxy radical and a tetroxide, finally to TMP-OH and TMP=O . While oxygen is absent, this carbon-centered radical could undergo hydrolysis to produce TMP-OH , sequentially to TMP=O .

Chinese Chemical Letters 32 (2021) 3164



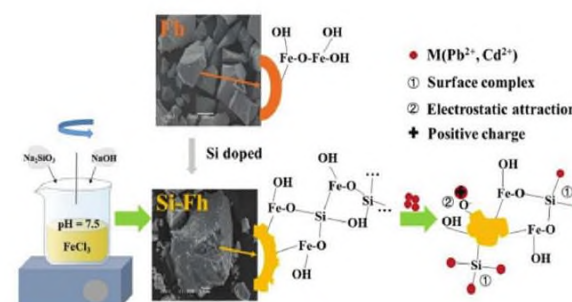
Preparation of silicon-doped ferrihydrite for adsorption of lead and cadmium: Property and mechanism

Yiran Song, Zhuanjun Zhao, Jing Li, Yang You, Xiangbang Ma, Jie Li, Xiuwen Cheng

Key Laboratory of Western China's Environmental Systems (Ministry of Education) and Key Laboratory for Environmental Pollution Prediction and Control, College of Earth and Environmental Sciences, Lanzhou University, Lanzhou 730000, China

Si-doped ferrihydrite composite was synthesized. Influences of pH and co-existing ion on the adsorption properties of composite were studied. The lead and cadmium adsorption mechanism on composite was proposed.

Chinese Chemical Letters 32 (2021) 3169



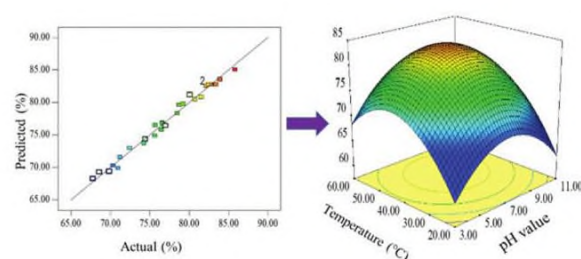
Nitric oxide removal from flue gas by ferrate(VI)/urea solutions

Feiqiang He, Xinyu Zhu, Lirong Zhong, Zhuyao Li, Yong Qian

School of Chemistry, Biology and Materials Science, East China University of Technology, Nanchang 330013, China

NO absorption process by using ferrate(VI)/urea was investigated with response surface methodology, which provides a theoretical guidance for developing a high efficiency and low cost denitification technology.

Chinese Chemical Letters 32 (2021) 3175



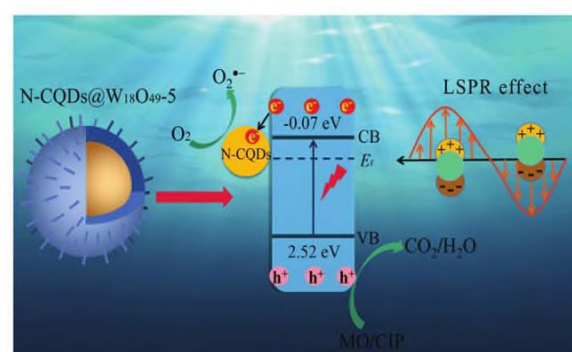
Fabrication of N-CQDs@W₁₈O₄₉ heterojunction with enhanced charge separation and photocatalytic performance under full-spectrum light irradiation

Ju Huang, Jiawen Wang, Zhengjia Hao, Chensha Li, Binsong Wang, Yang Qu

Department of Environmental Science, School of Chemistry and Materials Science, Key Laboratory of Functional Inorganic Material Chemistry, Ministry of Education of the People's Republic of China, Heilongjiang University, Harbin 150080, China

N-CQDs@W₁₈O₄₉ nanocomposites showed high activity in the photodegradation of ciprofloxacin (CIP) and methyl orange (MO). The excellent photocatalytic performance of N-CQDs@W₁₈O₄₉ was attributed to the promotion of charge separation by N-CQDs and the local surface plasmon resonance (LSPR) effect of W₁₈O₄₉ under full-spectrum light irradiation.

Chinese Chemical Letters 32 (2021) 3180



Bird nest-like zinc oxide nanostructures for sensitive electrochemical glucose biosensor

Feng Shi^a, Jinming Xu^a, Zhongfang Hu^a, Chuanli Ren^d, Yadong Xue^c, Yongcai Zhang^a, Juan Li^a, Chengyin Wang^a, Zhanjun Yang^{a,b}

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

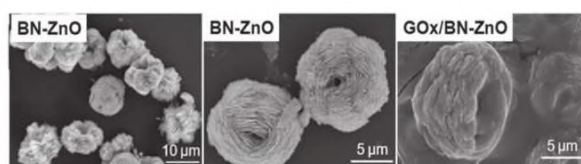
^b Guangling College, Yangzhou University, Yangzhou 225002, Zhenjiang Precise Intelligent Technology Co. Ltd., Zhenjiang 212016, China

^c Central Laboratory, Affiliated Jinhua Hospital, Zhejiang University School of Medicine, Jinhua 321000, China

^d Department of Laboratory Medicine and Clinical Medical College of Yangzhou University, Yangzhou 225001, China

Novel bird nest-like zinc oxide (BN-ZnO) nanostructures were for the first time exploited to develop a sensitive electrochemical glucose biosensor based on direct electron transfer of glucose oxidase (GOx) immobilized on nanostructured BN-ZnO modified electrode.

Chinese Chemical Letters 32 (2021) 3185



Microwave-assisted synthesis of colorimetric and fluorometric dual-functional hybrid carbon nanodots for Fe³⁺ detection and bioimaging

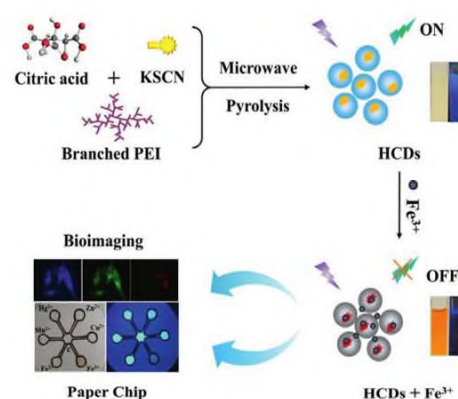
Yupeng Shi^a, Jingjing Liu^a, Yong Zhang^a, Jianfeng Bao^a, Jingliang Cheng^a, Changqing Yi^b

^a Key Laboratory of Functional Magnetic Resonance Imaging and Molecular Imaging (Henan Province), Department of MRI, The First Affiliated Hospital of Zhengzhou University, Zhengzhou 450052, China

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

In this study, N, S-doped fluorescent carbon nanodots are synthesized to integrate the colorimetric and fluorometric readouts in a single carbon nanodot, and successfully demonstrated for Fe³⁺ sensing with dual signals.

Chinese Chemical Letters 32 (2021) 3189



Enzyme immobilization on a pH-responsive porous polymer membrane for enzymatic kinetics study

Juan Qiao^{a,b}, Lili Liu^{a,c}, Ji Shen^{a,b}, Li Qia^{a,b}

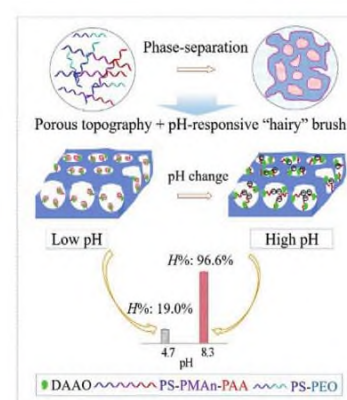
^a Beijing National Laboratory of Molecular Sciences, Key Laboratory of Analytical Chemistry for Living Bio-systems, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China

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

^c College of Chemistry & Environmental Science, Hebei University, Baoding 071002, China

A protocol for immobilization of D-amino acid oxidase (DAAO) on a pH-sensitive porous polymer membrane (PMER) was explored. Combining the merits of the topography and confinement effect of the PMER, the enzymolysis efficiency of the constructed DAAO@PMER could be dramatically enhanced by simply adjusting the polymer mass ratio and buffer pH.

Chinese Chemical Letters 32 (2021) 3195



A hybrid monolithic column based on flower-shaped zeolitic imidazolate framework for efficient capillary microextraction of brominated flame retardants

Xuemei Wang, Xinglan Cui, Hong Ji, Fangbing Wang, Yacong Liu, Xinzheng Du, Xiaoquan Lu

Key Laboratory of Bioelectrochemistry & Environmental Analysis of Gansu Province, College of Chemistry and Chemical Engineering, Northwest Normal University, Lanzhou 730070, China

A novel flower-shaped zeolitic imidazolate framework (ZIF) doped organic-inorganic hybrid monolithic column (ZIF-HMC) was prepared by a simple sol-gel "one-step" method and utilized for efficient capillary microextraction (CME) of four brominated flame retardants.

Chinese Chemical Letters 32 (2021) 3199



Capture and separation of CO₂ on BC₃ nanosheets: A DFT study

Houyong Yang^{a,b}, Chaozheng He^{a,b}, Ling Fu^c, Jinrong Huo^d, Chenxu Zhao^{a,b}, Xiuyuan Li^{a,b}, Yan Song^{a,b}

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

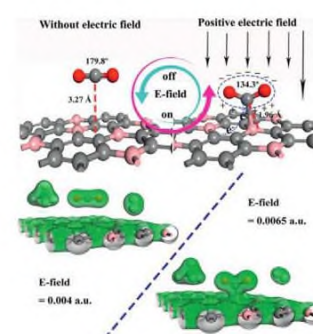
^b Institute of Environmental and Energy Catalysis, School of Materials Science and Chemical Engineering, Xi'an Technological University, Xi'an 710021, China

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

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

On the BC₃ nanosheets a negative external electric field was turned on to control the arrangement of CO₂ surrounding electrons to capture CO₂ gas. This property can be used to separate CO₂ from CH₄/H₂/CO₂ mixed gas.

Chinese Chemical Letters 32 (2021) 3202



Database-assisted global metabolomics profiling of pleural effusion induced by tuberculosis and malignancy

Guodong Cao^a, Zhengbo Song^b, Zhiyi Yang^a, Zhongjian Chen^c, Yanjun Hong^{a,d}, Zongwei Cai^a

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

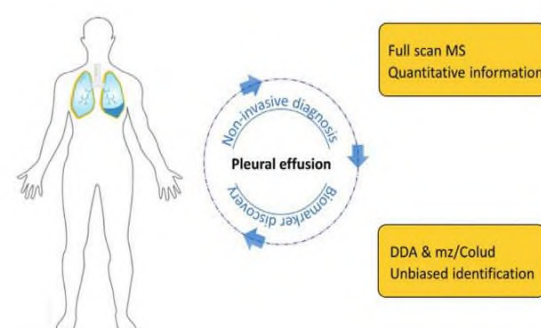
^b Department of Thoracic Oncology, Zhejiang Cancer Hospital, Hangzhou 310000, China

^c Department of Cancer Research, Zhejiang Cancer Hospital, Hangzhou 310000, China

^d School of Pharmaceutical Sciences (Shenzhen), Sun Yat-sen University, Shenzhen 518000, China

A database-assisted global metabolomics method was developed for investigation of metabolic traits of pleural effusions caused by tuberculosis and malignancy; some of the metabolites were found to be able to discriminate tuberculous and malignant pleural effusions with high sensitivity and specificity.

Chinese Chemical Letters 32 (2021) 3207



Design and synthesis of unique thiazoloisoquinolinium thiolates and derivatives

Wasim Ahmed^a, Zi-Hao Huang^a, Zi-Ning Cui^{a,b,c}, Ri-Yuan Tang^{a,c}

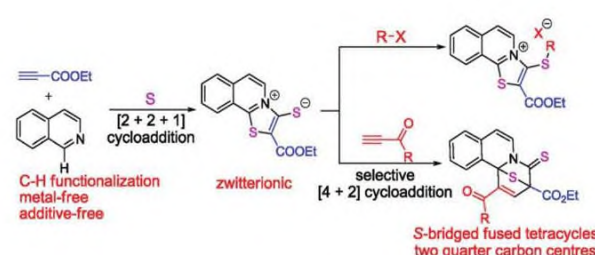
^a Department of Applied Chemistry, College of Materials and Energy, South China Agricultural University, Guangzhou 510642, China

^b State Key Laboratory for Conservation and Utilization of Subtropical Agro-Bioresources, Integrative Microbiology Research Centre, Guangdong Province Key Laboratory of Microbial Signals and Disease Control, South China Agricultural University, Guangzhou 510642, China

^c Guangdong Laboratory for Lingnan Modern Agriculture, Guangzhou 510642, China

A unique thiazoloisoquinolinium thiolates and the corresponding thioether-containing thiazoloisoquinolinium halides and S-bridged fused tetracyclic compounds have been designed and synthesized. Such thiazoloisoquinolinium thiolates show good inhibitory activity against duckweed.

Chinese Chemical Letters 32 (2021) 3211



Photocatalytic degradation of sulfadiazine in suspensions of TiO₂ nanosheets with exposed (001) facets

Xiaofan Xiang^a, Laiyan Wu^a, Junjiang Zhu^b, Jiazhou Li^a, Xi Liao^a, Hongcheng Huang^a, Jiajie Fan^c, Kangle Lv^a

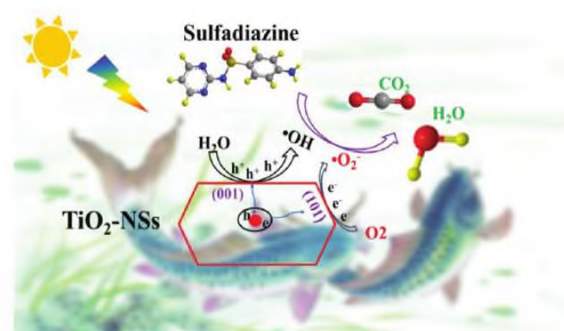
^a Key Laboratory of Resources Conversion and Pollution Control of the State Ethnic Affairs Commission, College of Resources and Environmental Science, South-Central University for Nationalities, Wuhan 430074, China

^b Hubei Key Laboratory of Biomass Fibers and Eco-Dyeing & Finishing, College of Chemistry and Chemical Engineering, Wuhan Textile University, Wuhan 430200, China

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

Photocatalytic oxidation mechanism of sulfadiazine over TiO₂ nanosheets (TiO₂-NSs) with exposed high energy (001) facets was systematically studied.

Chinese Chemical Letters 32 (2021) 3215



Electro-catazone treatment of an ozone-resistant drug: Effect of sintering temperature on TiO₂ nanoflower catalyst on porous Ti gas diffuser anodes

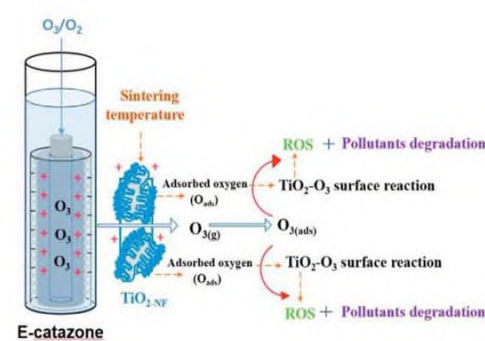
Xinyang Li^a, Yannan Li^a, Hao Zhang^a, Zhen Shen^a, Shuang Cheng^a, Guicheng Liu^b, Hong Yao^a

^a Beijing International Scientific and Technological Cooperation Base of Water Pollution Control Techniques for Antibiotics and Resistance Genes, Beijing Key Laboratory of Aqueous Typical Pollutants Control and Water Quality Safeguard, Department of Municipal and Environmental Engineering, School of Civil Engineering, Beijing Jiaotong University, Beijing 100044, China

^b Department of Physics, Dongguk University, Seoul 04620, Republic of Korea

Sintering temperature of TiO_{2-NF} is the key factor affecting the oxidation ability of the E-catazone system.

Chinese Chemical Letters 32 (2021) 3221



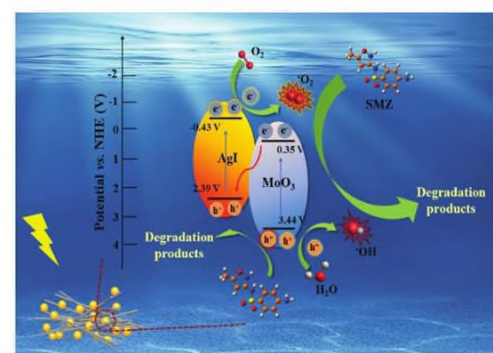
0D/1D AgI/MoO₃ Z-scheme heterojunction photocatalyst: Highly efficient visible-light-driven photocatalyst for sulfamethoxazole degradation

Jing Xu, Juan Chen, Yanhui Ao, Peifang Wang

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

A novel AgI/MoO₃ Z-scheme photocatalyst was elaborately synthesized with a unique 0D/1D nanostructures. The results show that the as-prepared 0D/1D AgI/MoO₃ Z-scheme photocatalyst exhibited excellent activity for sulfamethoxazole (SMZ) degradation.

Chinese Chemical Letters 32 (2021) 3226



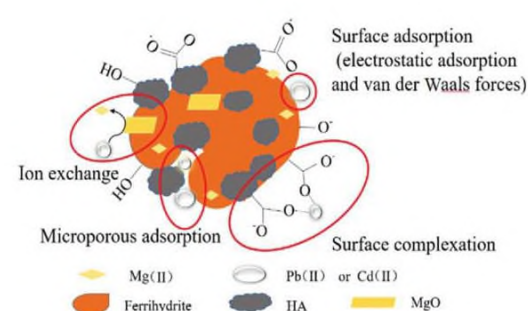
Synthesis of Mg(II) doped ferrihydrite-humic acid coprecipitation and its Pb(II)/Cd(II) ion sorption mechanism

Jing Li, Zhuanjun Zhao, Yiran Song, Yang You, Jie Li, Xiuwen Cheng

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

A magnesium doped ferrihydrite-humic acid coprecipitation (Mg-doped Fh-HA) was synthesized by coprecipitation method. Meanwhile, The removal of heavy metals such as Pb(II) and Cd(II) was assessed. Also, the adsorption mechanism of Mg-doped Fh-HA for Pb(II) and Cd(II) was proposed.

Chinese Chemical Letters 32 (2021) 3231



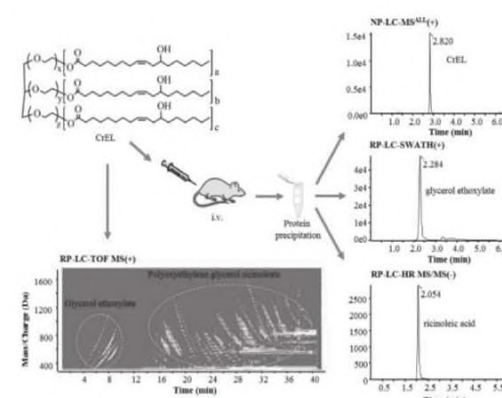
Disposition and fate of polyoxyethylene glycerol ricinoleate as determined by LC-Q-TOF MS coupled with MS^{ALL}, SWATH and HR MS/MS techniques

Ruifeng Bai, Dong Sun, Yuqin Shan, Zhiqiong Guo, Dafeng Chu, JohnPaul Fawcett, Jingkai Gu

Center for Drug Metabolism Research, School of Life Sciences, Jilin University, Changchun 130012, China

LC-Q-TOF MS coupled with MS^{ALL}, SWATH and HR MS/MS techniques provides a new strategy for comprehensively qualitative and quantitative bioanalysis of pharmaceutical polymer materials and their metabolites.

Chinese Chemical Letters 32 (2021) 3237



Anion engineering of hierarchical Co-A (A = O, Se, P) hexagrams for efficient electrocatalytic oxygen evolution reaction

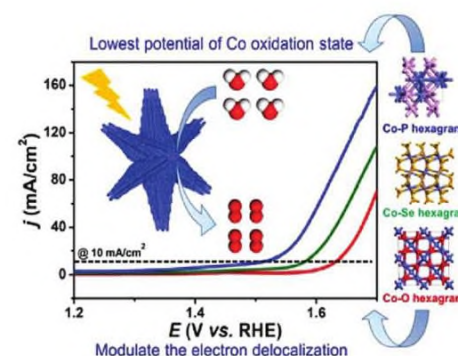
Zuozhong Liang^a, Chenxi Yang^b, Wei Zhang^a, Haoquan Zheng^a, Rui Cao^a

^a Key Laboratory of Applied Surface and Colloid Chemistry, Ministry of Education, School of Chemistry and Chemical Engineering, Shaanxi Normal University, Xi'an 710119, China

^b Sinopec Beijing Research Institute of Chemical Industry, Beijing 100013, China

Anion engineering of hierarchical Co-A (A = O, Se, P) hexagrams has been studied for the OER by combining the electrocatalytic measurements and theoretical calculations.

Chinese Chemical Letters 32 (2021) 3241



Magnetic rod-based metal-organic framework metal composite as multifunctional nanostirrer with adsorptive, peroxidase-like and catalytic properties

Benjamin Edem Meteku^{a,b}, Jiankun Huang^a, Jingbin Zeng^a, Sobia Aslam^c, Yu Zhang^b, Xue Zhang^a, Bingwen Cui^a, Cong-ying Wen^a, Zifeng Yan^{a,b}

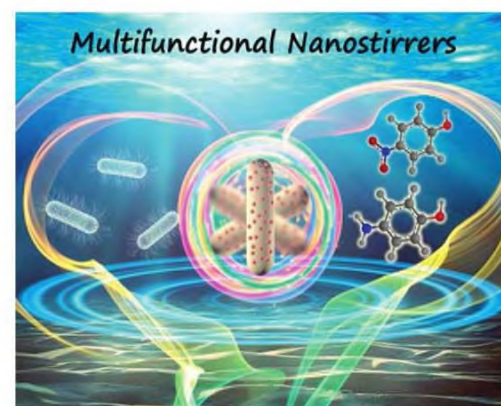
^a College of Science and State Key Laboratory of Heavy Oil Processing, China University of Petroleum (East China), Qingdao 266580, China

^b College of Chemical Engineering, China University of Petroleum (East China), Qingdao 266580, China

^c Department of Chemistry, Abdul Wali Khan University, Mardan 23200, Pakistan

Effective mixing is crucial for enhancing the kinetics of chemical and biochemical processes. The synergistic effect on the properties of fabricated $\text{Fe}_3\text{O}_4@\text{MIL-100}(\text{Fe})\text{-Au}$ makes it conducive for the magnetic property to be harnessed as a nanostirrer to significantly enhance the kinetics of pathogen sequestration, colorimetric detection of H_2O_2 , and the reduction of organic pollutants.

Chinese Chemical Letters 32 (2021) 3245



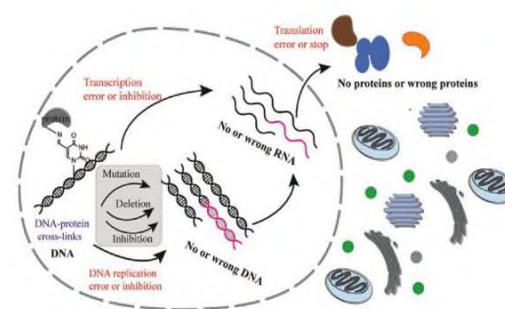
5-Formyluracil targeted biochemical reactions with proteins inhibit DNA replication, induce mutations and interference gene expression in living cells

Guangrong Zou, Kaiyuan Zhang, Wei Yang, Chaoxing Liu, Zhentian Fang, Xiang Zhou

College of Chemistry and Molecular Sciences, Key Laboratory of Biomedical Polymers of Ministry of Education, The Institute for Advanced Studies, Hubei Province Key Laboratory of Allergy and Immunology Wuhan University, Wuhan 430072, China

By introducing 5-formyluracil (5fU) based covalent DNA-peptide or DNA-protein cross-links into DNA duplexes and using various methods, this study demonstrates the first attempt to explore the functional impacts of 5fU intermediated biochemical reactions between peptides or proteins on DNA replication, transcription and gene expression *in vitro* and in living cells.

Chinese Chemical Letters 32 (2021) 3252



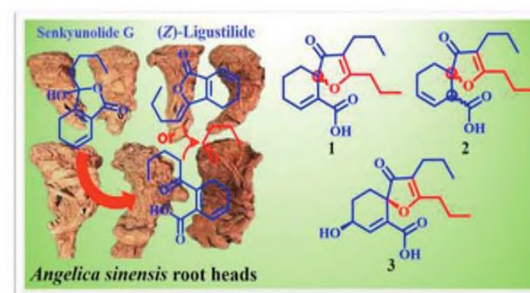
Phthalide-derived oxaspiroangelioic acids A–C with an unprecedented carbon skeleton from an aqueous extract of the *Angelica sinensis* root head

Youzhe Chen, Chengbo Xu, Weiping Wang, Xiaoliang Wang, Qinglan Guo, Jiangong Shi

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

Three phthalide-derived analogues with an undescribed carbon skeleton were isolated and structurally characterized from an aqueous extract of the *Angelica sinensis* root heads (guitou). Biogenetically the carbon skeleton is proposed from coupling between phthalide derivatives and butanal. Racemate **1** and its enantiomers showed activity inhibiting the K^+ channel TREK-1.

Chinese Chemical Letters 32 (2021) 3257



Insight into the improvement mechanism of Co–Pi-modified hematite nanowire photoanodes for solar water oxidation

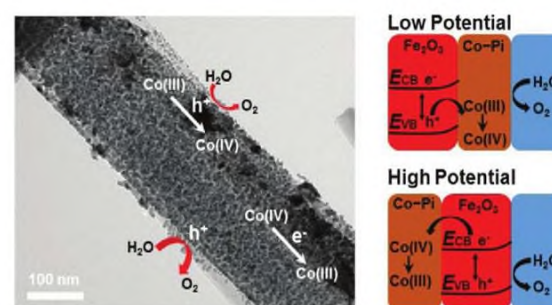
Xu Zhou^a, Chunyan Wang, Fulin Liu^a, Chengyu He, Shiming Zhang^{a,b}

^a Key Laboratory of Flexible Electronics (KLOFE) & Institute of Advanced Materials (IAM), Nanjing Tech University (NanjingTech), Nanjing 211816, China

^b Jiangsu Seenbom Flexible Electronics Institute Co., Ltd., Nanjing 210061, China

The Co–Pi catalyst can efficiently promote the transfer of photo-generated holes to the Co–Pi layer by increasing the electrical conductivity of the composite structure under a low potential. The Co–Pi catalyst can recombine with photo-generated electrons to reduce the surface recombination efficiency of photo-generated carriers under a high potential.

Chinese Chemical Letters 32 (2021) 3261



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