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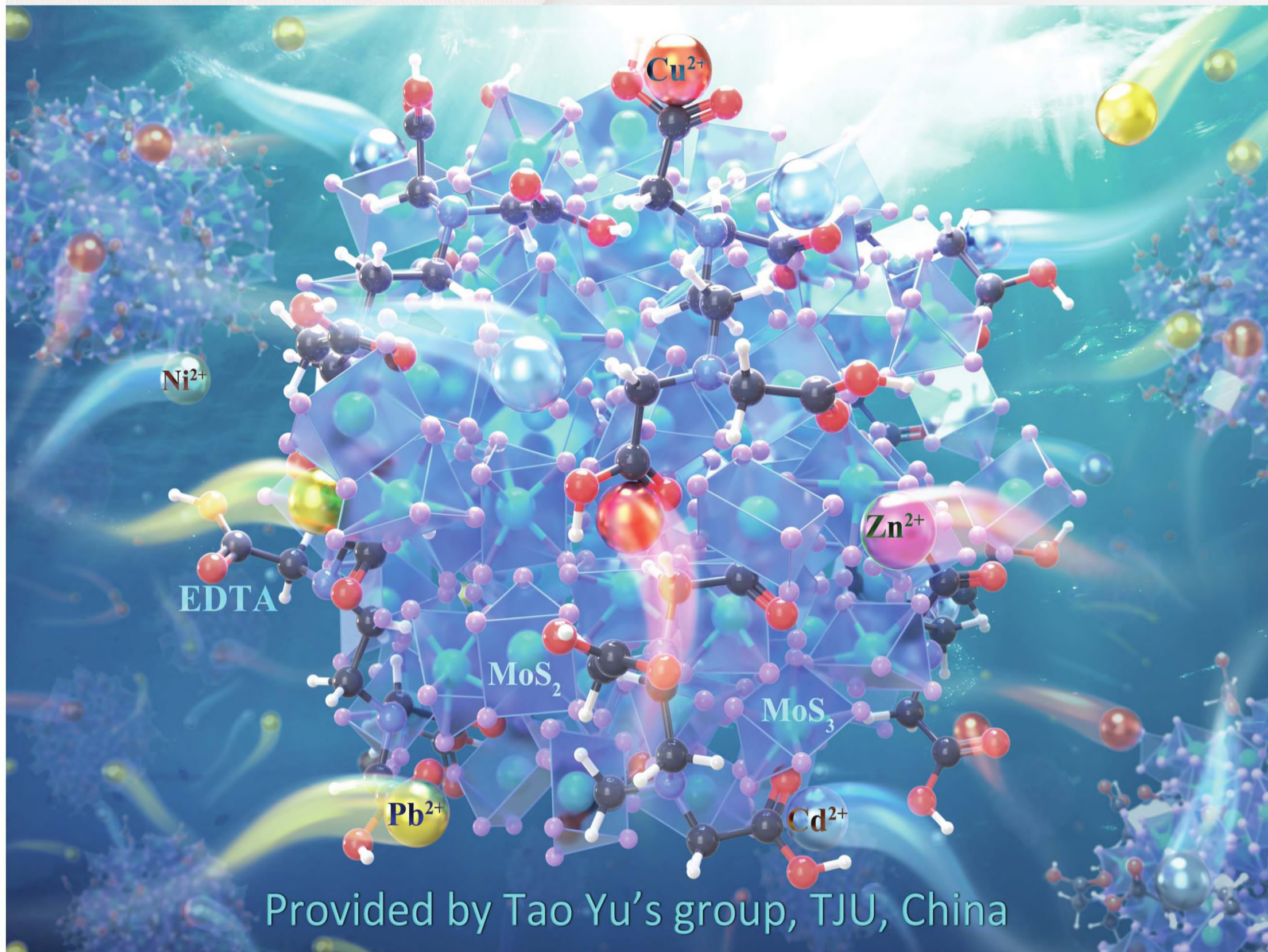
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REVIEW
Linlin Li et al.
Nanozymes for regulation of reactive oxygen
species and disease therapy

COMMUNICATION
Zhimin Ao et al.
Density functional theory investigation
on selective adsorption of VOCs on borophene

Chinese Chemical Society
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Reviews

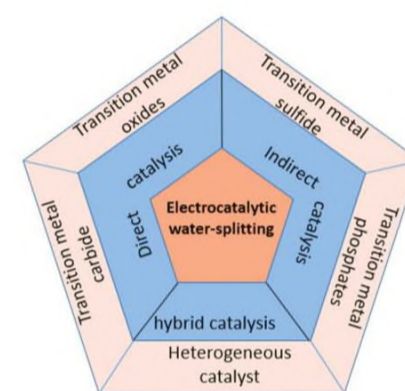
Transition metal-based electrocatalysts for overall water splitting

Xiao-Peng Li, Can Huang, Wen-Kai Han, Ting Ouyang, Zhao-Qing Liu

School of Chemistry and Chemical Engineering, Institute of Clean Energy and Materials, Guangzhou Key Laboratory for Clean Energy and Materials, Key Laboratory for Water Quality and Conservation of the Pearl River Delta, Ministry of Education, Guangzhou University, Guangzhou Higher Education Mega Center, Guangzhou 510006, China

Considering to better understanding the application of transition metal-based catalysts in overall water decomposition, this work divides into three major types basing on the intrinsic catalytic active substances, and overviews the basic principles and recent progresses of transition metal-based overall water decomposition in terms of active sites, defects, morphological structures and interfacial effects.

Chinese Chemical Letters 32 (2021) 2597



Recent advances in kaolinite-based material for photocatalysts

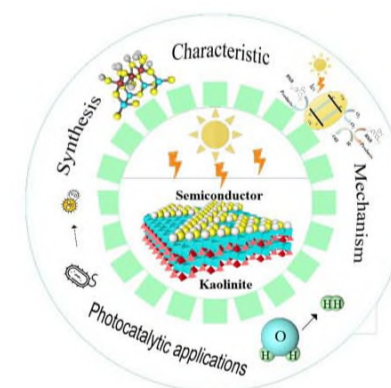
Zhou Cao^a, Qizhao Wang^a, Hongfei Cheng^{a,b}

^a School of Water and Environment, Key Laboratory of Subsurface Hydrology and Ecological Effects in Arid Region of Ministry of Education, Chang'an University, Xi'an 710054, China

^b Department of Materials Science and Engineering, Northwestern University, Evanston, IL 60208, United States

This article discusses the synthesis, characteristics and photocatalytic mechanism of different kinds of kaolinite composite photocatalysts in detail. The latest progress of kaolinite-based photocatalytic materials in the fields of environment and energy is reviewed. On the basis of analyzing and discussing the limiting factors of composite photocatalyst performance, some ideas on the future development direction of this field are put forward.

Chinese Chemical Letters 32 (2021) 2617



Application of magnetic solid phase extraction in separation and enrichment of glycoproteins and glycopeptides

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^b Key Laboratory for Molecular Enzymology and Engineering of Ministry of Education, School of Life Sciences, Jilin University, Changchun 130012, China

This review mainly focus on the recent advances in the application of magnetic solid phase extraction (MSPE) technology and magnetic adsorbents for the separation and enrichment of glycoproteins and glycopeptides in human body fluids.

Chinese Chemical Letters 32 (2021) 2629



Selective adsorption of phosphate in water using lanthanum-based nanomaterials: A critical review

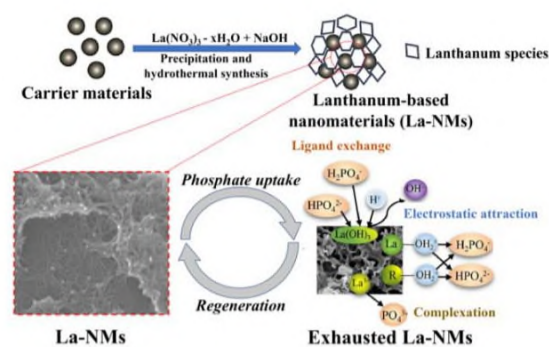
Mamitiana Roger Razanajatovo^a, Wenyan Gao^a, Yaran Song^a, Xuan Zhao^a, Qina Sun^a, Qingrui Zhang^{a,b}

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

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

The selective phosphate adsorption capacity and regeneration efficiency of various lanthanum-based nanomaterials (La-NMs) prepared by different synthesis methods are summarized. Additionally, the application of La-NMs to real wastewater is also discussed.

Chinese Chemical Letters 32 (2021) 2637



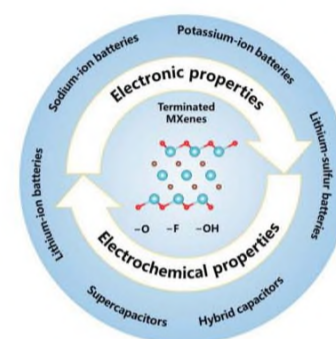
Role of MXene surface terminations in electrochemical energy storage: A review

Zhuoheng Bao, Chengjie Lu, Xin Cao, Peigen Zhang, Li Yang, Heng Zhang, Dawei Sha, Wei He, Wei Zhang, Long Pan, Zhengming Sun

School of Materials Science and Engineering, Southeast University, Nanjing 211189, China

This review focuses on the up-to-date progress in surface terminations of MXenes with the aim of providing guidance for future researches and applications of these materials.

Chinese Chemical Letters 32 (2021) 2648



Recent progress of composite solid polymer electrolytes for all-solid-state lithium metal batteries

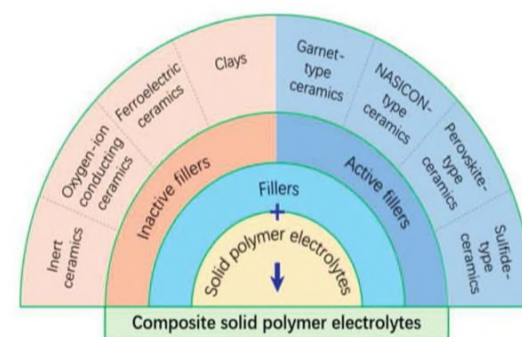
Qingjiang Yu^a, Kecheng Jiang^a, Cuiling Yu^b, Xianjin Chen^a, Chuanjian Zhang^a, Yi Yao^a, Bin Jiang^a, Huijin Long^a

^a Jiangsu TAFEL New Energy Technology Co., Ltd., Nanjing 211106, China

^b School of Physics, Harbin Institute of Technology, Harbin 150001, China

Solid-state electrolytes play a crucial role in the improvements of safety and electrochemical stability in all-solid-state lithium batteries (ASSLBs). In this review, we present the recent research and development of the composite solid polymer electrolytes for ASSLBs.

Chinese Chemical Letters 32 (2021) 2659



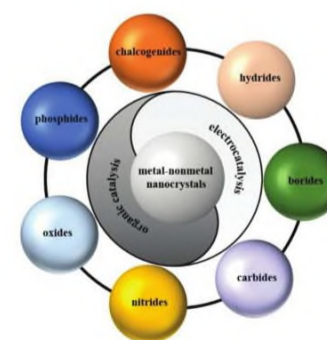
Recent advances in nonmetallic atom-doped metal nanocrystals: Synthesis and catalytic applications

Ruiyun Guo, Ke Zhang, Shangdong Ji, Yangzi Zheng, Mingshang Jin

Frontier Institute of Science and Technology and State Key Laboratory of Multiphase Flow in Power Engineering, Xi'an Jiaotong University, Xi'an 710049, China

Nonmetallic atoms-doped metal catalysts (metal-nonmetal catalysts) would be the most promising candidates for noble metal catalysts, playing important role in organic catalysis and electrocatalysis. The introduction of metal-nonmetal catalysts in this review can provide guidance and serve as a resource for researchers who are interested in this topic.

Chinese Chemical Letters 32 (2021) 2679



Structural engineering design of carbon dots for lubrication

Chinese Chemical Letters 32 (2021) 2693

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^a State Key Laboratory of Structural Analysis for Industrial Equipment, Dalian University of Technology, Dalian 116024, China

^b Research Center for Analytical Sciences, Northeastern University, Shenyang 110819, China

In this review, three strategies for structural engineering design of carbon dots (CDs) to improve their tribological characteristics are fully analyzed, in terms of size and shape control, surface modification and heteroatom doping. And the lubricating mechanisms of CDs as additives, including protective film, rolling effect, mending effect and polishing effect, are introduced in detail.



Nanozymes for regulation of reactive oxygen species and disease therapy

Chinese Chemical Letters 32 (2021) 2715

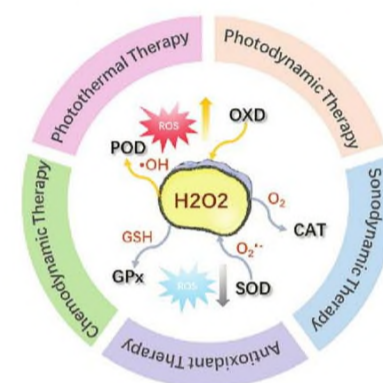
Yujie Dai^{a,b}, Yiming Ding^{a,c}, Linlin Li^{a,b,c}

^a Beijing Institute of Nanoenergy and Nanosystems, Chinese Academy of Sciences, Beijing 101400, China

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

^c Center on Nanoenergy Research, School of Chemistry and Chemical Engineering, School of Physical Science and Technology, Guangxi University, Nanning 530004, China

This reviewer paper summarizes recent progresses in nanozymes for disease therapy through regulation of reactive oxygen species.



Recent advances towards electrochemical transformations of α -keto acids

Chinese Chemical Letters 32 (2021) 2729

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

^b Faculty of Environment and Life, Beijing University of Technology, Beijing 100024, China

^c College of Chemistry and Pharmaceutical Engineering, Nanyang Normal University, Nanyang 473061, China

α -Keto acids have been extensively employed as key starting materials in the synthesis of value-added chemicals. This review covers the recent breakthroughs achieved in the electrochemical transformations of α -keto acids.



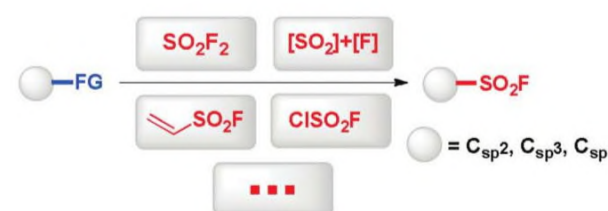
Recent progress in the synthesis of sulfonyl fluorides for SuFEx click chemistry

Chinese Chemical Letters 32 (2021) 2736

Tao Zhong, Zhida Chen, Jitao Yi, Gui Lu, Jiang Weng

Guangdong Provincial Key Laboratory of Chiral Molecule and Drug Discovery, School of Pharmaceutical Sciences, Sun Yat-sen University, Guangzhou 510006, China

Sulfonyl fluorides, one of the most useful connective hubs for SuFEx click chemistry, have found widespread application and received increasing attention in recent years. This review aims to give a timely summary of recent progresses on the synthetic methods of sulfonyl fluorides.



Narasaka reaction: Desilylative acylation of 1-alkenylsilanes with acid anhydrides

Wei Xiao^a, Jie Wu^{a,b,c}

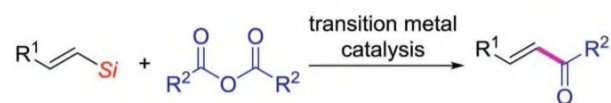
^a School of Pharmaceutical and Materials Engineering & Institute for Advanced Studies, Taizhou University, Taizhou 318000, China

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

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

Recent advances in the desilylative acylation of 1-alkenylsilanes with acid anhydrides under transition metal catalysis are summarized. This catalytic desilylative acylation of 1-alkenylsilanes provides an efficient route to α,β -unsaturated ketones by using rhodium or iridium as the catalyst. Moreover, various one pot sequence reactions have been developed, which can synthesize α,β -unsaturated ketones from simple starting materials in an economic way. Additionally, this approach is applied to the asymmetric synthesis of atropisomers possessing silanol groups with excellent enantioselectivity.

Chinese Chemical Letters 32 (2021) 2751



Communications

Pd-catalyzed halocyclizations of unactivated 1,6-diynes through a formal *anti*-carbopalladation/bromide radical cascade

Zhihua Wang, Li Wei, Zhendong Cheng, Jianhui Xia, Zhiyuan Chen

Key Laboratory of Functional Small Organic Molecules, Ministry of Education and Jiangxi Key Laboratory of Green Chemistry, College of Chemistry & Chemical Engineering, Jiangxi Normal University, Nanchang 330022, China

Pd-catalyzed halocyclization of unactivated 1,6-diynes with *N*-bromosuccinimide (NBS) to produce stereo-defined dibromo substituted dihydropyrans, tetrahydropyridines, and 3-methylene cyclohexenes. A formal *anti*-carbopalladation and a bromide radical promoted the Pd^{II}-Pd^{III}-Pd^I-Pd^{II} catalytic cycles were proposed to be involved in the formation of the dibromo-substituted products.

Chinese Chemical Letters 32 (2021) 2756



Synergistic effect of T80/B30 vesicles and T80/PN320 mixed micelles with Se/C on nasal mucosal immunity

Hongen Cao^a, Ruonan Ma^b, Sainan Chu^a, Juqun Xi^b, Lei Yu^a, Rong Guo^a

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

^b Medical College, Yangzhou University, Yangzhou 225001, China

Selenium doped carbon (Se/C) could serve as an adjuvant to enhance the immune effect of Tween 80/Brij 30 vesicles and Tween 80/polymer cationic surfactant PN320 mixed micelles. The synergistic effect of the combination of T80/B30 vesicles and T80/PN320 mixed micelles with Se/C on nasal mucosal immunity was studied in this work, which might provide theoretical basis for developing the related new adjuvant for nasal immunization of recombinant protein, peptide and split protein vaccine.

Chinese Chemical Letters 32 (2021) 2761



Palladium-catalyzed diarylative dearomatization of indoles with aryl thioesters

Wei Huang^a, Ming-Liang Han^{d,e}, Yu-Wen Liu^{b,c}, Hui Xu^b, Hui-Xiong Dai^{b,c}

^a School of Pharmacy, Nanchang University, Nanchang 330006, China

^b Chinese Academy of Sciences Key Laboratory of Receptor Research, Shanghai Institute of Materia Medica, Shanghai 201203, China

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

^d Institute for Advanced Study, Shenzhen University, Shenzhen 518060, China

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

We report herein a palladium-catalyzed dearomatizative diarylation of indole by employing thioester and arylboronic acid as the aryl electrophiles. The reaction involved a decarbonylation/migratory insertion/terminal Suzuki coupling procedure. Substrates bearing various functional groups are well tolerated in the reaction, affording the diarylated indoline skeletons in moderate to good yields.

Chinese Chemical Letters 32 (2021) 2765



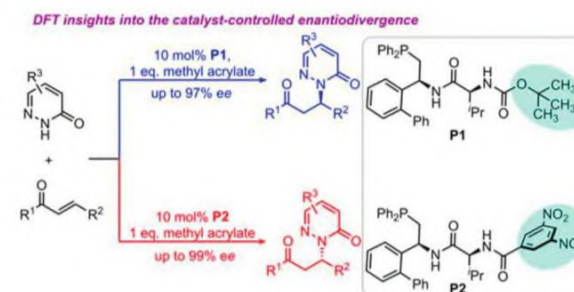
Origins of catalyst-controlled enantiodivergent hydroamination of enones with pyridazinones: A computational study

Xiangwei Ren, Hongli Wu, Mei Zhang, Wentao Zhao, Genping Huang

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

Dipeptide phosphine-catalyzed hydroamination of enones with pyridazinones has been investigated by means of DFT calculations to elucidate the origins of the catalyst-controlled enantiodivergence.

Chinese Chemical Letters 32 (2021) 2769



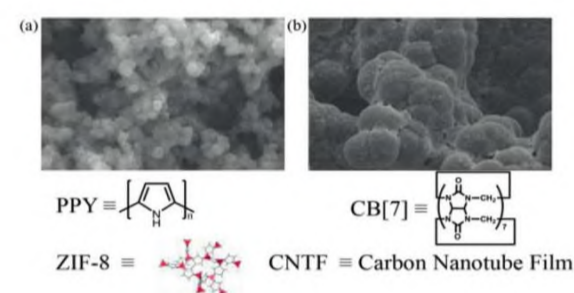
Pyrrole/macrocycle/MOF supramolecular co-assembly for flexible solid state supercapacitors

Shan-Shan Jia, Wen-Shi Xu, Yong Chen, Yu Liu

College of Chemistry, State Key Laboratory of Elemento-Organic Chemistry, Nankai University, Tianjin 300071, China

In this work, an effective strategy was reported to improve the stability and conductivity of CPs by electrochemically constructing different supramolecular assemblies composed of macrocycles and CPs, significantly improve the areal capacitance up to 1533 mF/cm².

Chinese Chemical Letters 32 (2021) 2773



Silver-catalyzed decarboxylative C–H functionalization of cyclic aldimines with aliphatic carboxylic acids

Jingjing Wang^a, Xue Liu^c, Ziyang Wu^a, Feng Li^a, Tingting Qin^a, Siyuan Zhang^a, Weiguang Kong^b, Lantao Liu^{a,c}

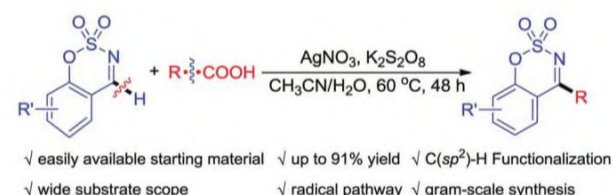
^a Henan Key Laboratory of Biomolecular Recognition and Sensing, College of Chemistry and Chemical Engineering, Shangqiu Normal University, Shangqiu 476000, China

^b College of Chemistry and Pharmaceutical Engineering, Nanyang Normal University, Nanyang 473061, China

^c College of Chemistry, Zhengzhou University, Zhengzhou 450052, China

Silver-catalyzed decarboxylative C–H alkylation of cyclic aldimines with abundant aliphatic carboxylic acids has been realized under mild reaction conditions generating the corresponding products in moderate to good yields (32%–91%). In addition, a gram-scale reaction, late-stage modification of drug, synthetic transformation of the product, and further application of the catalytic strategy were also performed. Preliminary studies indicate that the reaction undergoes a radical process.

Chinese Chemical Letters 32 (2021) 2777



Isotopic heterojunction based on Fe-doped and terephthalaldehyde-modified carbon nitride for improving photocatalytic degradation with simultaneous hydrogen production

Xun-Heng Jiang^{a,b,c}, Fan Yu^{b,c}, Dai-She Wu^a, Lei Tian^{a,b,c}, Ling-Ling Zheng^{a,b,c}, Li-Sha Chen^a, Peng Chen^{a,b,c}, Long-Shuai Zhang^{b,c}, Hui Zeng^{a,b,c}, Ying Chen^{a,b,c}, Jian-Ping Zou^{a,b,c}

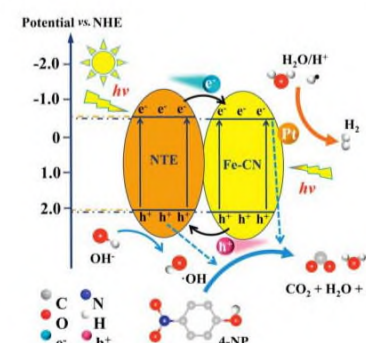
^a Key Laboratory of Poyang Lake Environment and Resource Utilization of Ministry of Education, School of Resources Environmental and Chemical Engineering, Nanchang University, Nanchang 330031, China

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

^c National-Local Joint Engineering Research Center of Heavy Metals Pollutants Control and Resource Utilization, Nanchang Hangkong University, Nanchang 330063, China

Fe-CN/NTE improved degradation of 4-NP coupled with simultaneous photocatalytic H₂ evolution under visible light irradiation.

Chinese Chemical Letters 32 (2021) 2782



A carbon-rich g-C₃N₄ with promoted charge separation for highly efficient photocatalytic degradation of amoxicillin

Dan Huang^a, Xianbo Sun^a, Yongdi Liu^a, Haodong Ji^b, Wen Liu^b, Chong-Chen Wang^c, Weiyu Ma^a, Zhengqing Cai^a

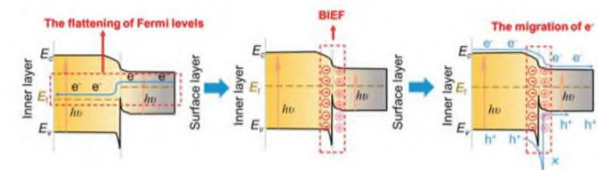
^a National Engineering Laboratory for High-concentration Refractory Organic Wastewater Treatment Technologies, East China University of Science and Technology, Shanghai 200237, China

^b The Key Laboratory of Water and Sediment Sciences, Ministry of Education, College of Environmental Sciences and Engineering, Peking University, Beijing 100871, China

^c Beijing Key Laboratory of Functional Materials for Building Structure and Environment Remediation, School of Environment and Energy Engineering, Beijing University of Civil Engineering and Architecture, Beijing 100044, China

A carbon-rich g-C₃N₄ was prepared by facile thermal polymerization method, its constructed built-in electric field induced fast charge separation and offered the material superior photocatalytic activity. The engineering application potentials of the material was evaluated, and the contaminants degradation mechanism was elucidated.

Chinese Chemical Letters 32 (2021) 2787



Sequential separation of Cu(II)/Ni(II)/Fe(II) from strong-acidic pickling wastewater with a two-stage process based on a bi-pyridine chelating resin

Yingzhi Lv^a, Lidan Zong^a, Zicheng Liu^a, Jianwei Du^c, Fenghe Wang^d, Yanhong Zhang^{a,e}, Chen Ling^b, Fuqiang Liu^a

^a State Key Laboratory of Pollution Control and Resource Reuse, School of the Environment, Nanjing University, Nanjing 210023, China

^b College of Biology and the Environment, Nanjing Forestry University, Nanjing 210037, China

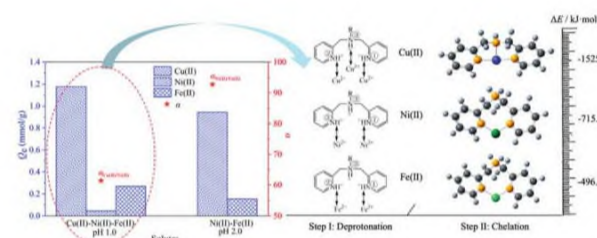
^c South China Institute of Environmental Sciences, Ministry of Ecology and Environment, Guangzhou 510530, China

^d Jiangsu Key Laboratory of Material Cycle and Pollution Control, School of Environment, Nanjing Normal University, Nanjing 210023, China

^e Jiangsu Provincial Key Laboratory of Environmental Engineering, Jiangsu Provincial Academy of Environmental Science, Nanjing 210036, China

A self-synthesized bi-pyridine chelating resin (PAPY) could separate Cu(II)/Ni(II)/Fe(II) sequentially by a two-stage pH-adjusted process and showed a great potential in the purification of heavy metal resources from strong-acidic pickling wastewaters.

Chinese Chemical Letters 32 (2021) 2792



Amorphous molybdenum sulfide mediated EDTA with multiple active sites to boost heavy metal ions removal

Qi Huang^{b,e}, Yizhong Zhang^b, Wei Zhou^d, Xiang Huang^c, Yiliang Chen^a, Xin Tan^{b,c}, Tao Yu^a

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

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

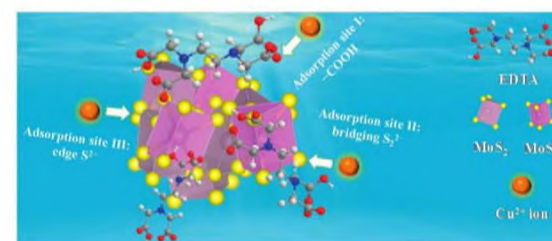
^c School of Science, Tibet University, Lhasa 850000, China

^d School of Science, Tianjin University, Tianjin 300350, China

^e Research Center of Environmental Pollution Control Engineering Technology, Chinese Research Academy of Environmental Sciences, Beijing 100012, China

Amorphous EDTA-MoS_x (x = 2, 3) with multiple active sites can effectively enhance removal of heavy metal ions compared with crystalline MoS₂.

Chinese Chemical Letters 32 (2021) 2797



Density functional theory investigation on selective adsorption of VOCs on borophene

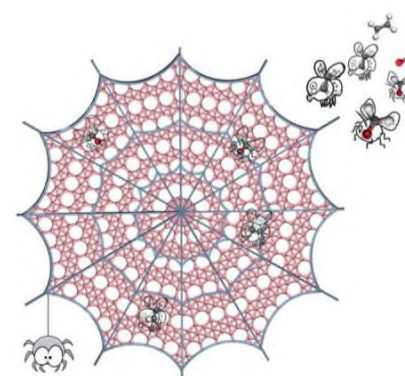
Wenlang Li^a, Quanguo Jiang^b, Didi Li^a, Zhimin Ao^a, Taicheng An^a

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

^b College of Mechanics and Materials, Hohai University, Nanjing 210098, China

The 2D materials borophenes are able to selective chemical adsorption for C₂H₄ and H₂CO from typical VOCs.

Chinese Chemical Letters 32 (2021) 2803



Highly sensitive colorimetric detection of NH₃ based on Au@Ag@AgCl core-shell nanoparticles

Zhiwei Qiu^a, Yitong Xue^b, Jiyong Li^c, Yunzhi Zhang^c, Xinyi Liang^b, Congying Wen^b, Houjian Gong^a, Jingbin Zeng^b

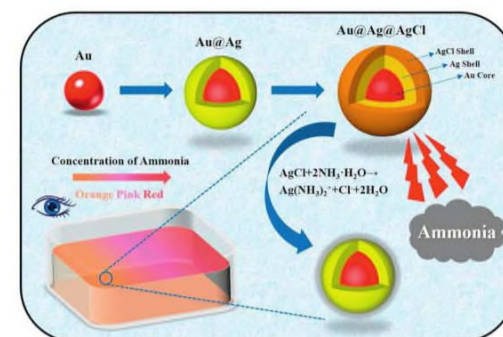
^a College of Petroleum Engineering, China University of Petroleum (East China), Qingdao 266580, China

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

^c Petroleum Engineering Technology Research Institute, Sinopec Shengli Oilfield Company, Dongying 257067, China

In this work, we have synthesized Au@Ag@AgCl core-shell nanoparticles (NPs) by oxidative etching and precipitating Au@Ag core-shell NPs using FeCl₃, offering a simple and efficient method for the colorimetric detection of ammonia.

Chinese Chemical Letters 32 (2021) 2807



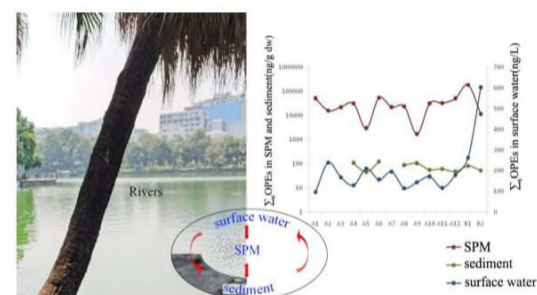
Organophosphate esters in water, suspended particulate matter (SPM) and sediments of the Minjiang River, China

Hongling Yin, Qin Liu, Xu Deng, Xiaowen Liu, Shuhong Fang, Yuanming Xiong, Jiaojiao Song

College of Resources and Environment, Chengdu University of Information Technology, Chengdu 610025, China

The OPE concentration in SPM was markedly higher than in water and sediments of the Minjiang River. The partition behavior of OPEs was affected by OPE properties and environmental conditions.

Chinese Chemical Letters 32 (2021) 2812



Graphdiyne as a novel nonactive anode for wastewater treatment: A theoretical study

Guoshuai Liu^a, Yanan Zhou^b, Qun Yan^a, Yasmina Doekhi-Bennani^c

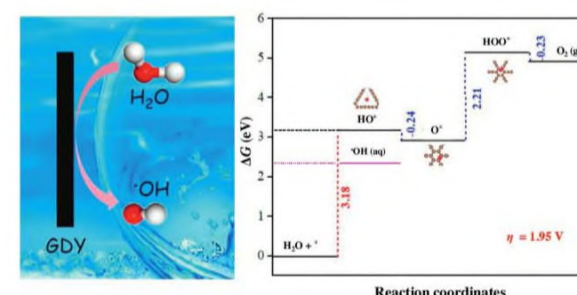
^a School of Environmental and Civil Engineering, Jiangnan University, Wuxi 214122, China

^b School of Chemical Engineering, Sichuan University, Chengdu 610065, China

^c Department of Water Management, Section Sanitary Engineering, Delft University of Technology, PO Box 5048, 2600 GA, Delft, the Netherlands

Graphdiyne (GDY) anode can be considered as an alternative "nonactive" anode for effective degradation refractory organic compounds in electrochemical advanced oxidation process (EAOP).

Chinese Chemical Letters 32 (2021) 2819



Efficient removal of tetracycline in water by a novel chemical and biological coupled system with non-woven cotton fabric as carrier

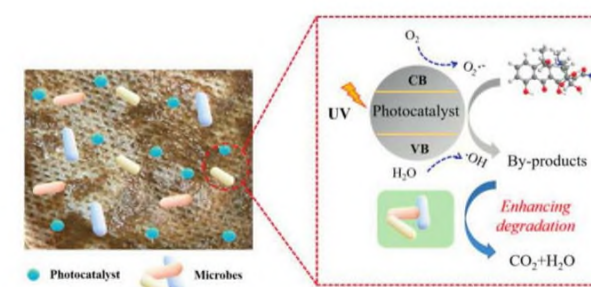
Peng Yang^a, Yuxuan Ye^{a,b}, Zidu Yan^a, Qiang Li^{a,b}, Kun Zhang^a, Yezhi Yang^a, Qiuyue Zhang^a, Hang Yin^a, Dongsheng Xia^{a,b}, Fei Pan^{a,b}

^a School of Environmental Engineering, Wuhan Textile University, Wuhan 430073, China

^b Engineering Research Center for Clean Production of Textile Dyeing and Printing, Ministry of Education, Wuhan 430073, China

A novel intimate coupling of photocatalysis and biodegradation (ICPB) system with non-woven cotton fabric as carrier was constructed for efficient degradation of antibiotics in water.

Chinese Chemical Letters 32 (2021) 2823



Combustion synthesis of mesoporous CoAl_2O_4 for peroxydisulfate activation to degrade organic pollutants

Sheng Guo^{a,b,c}, Huiling Tang^{a,d}, Liming You^b, Huali Zhang^a, Jun Li^e, Kun Zhou^{b,c}

^a School of Chemistry and Environmental Engineering, Wuhan Institute of Technology, Wuhan 430205, China

^b Environmental Process Modelling Centre, Nanyang Environment and Water Research Institute, Nanyang Technological University, Singapore 637141, Singapore

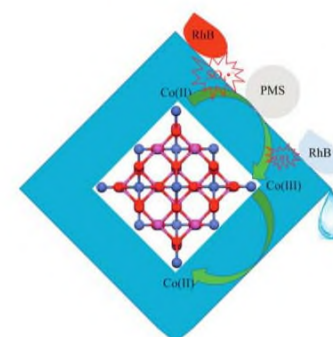
^c School of Mechanical and Aerospace Engineering, Nanyang Technological University, Singapore 639798, Singapore

^d Department of Environmental Science and Engineering, Wuhan University, Wuhan 430079, China

^e Henan Institute of Advanced Technology, Zhengzhou University, Zhengzhou 450052, China

A mesoporous CoAl_2O_4 spinel that is highly efficient for the degradation of RhB, MB, MO, and TCH is prepared through a combustion approach. Both $\text{SO}_4^{\cdot-}$ and $\cdot\text{OH}$ are present in the $\text{CoAl}_2\text{O}_4/\text{PMS}$ system, and $\text{SO}_4^{\cdot-}$ is the dominant reactive oxygen species.

Chinese Chemical Letters 32 (2021) 2828



Highly ordered Nb_2O_5 nanochannel film with rich oxygen vacancies for electrocatalytic N_2 reduction: Inactivation and regeneration of electrode

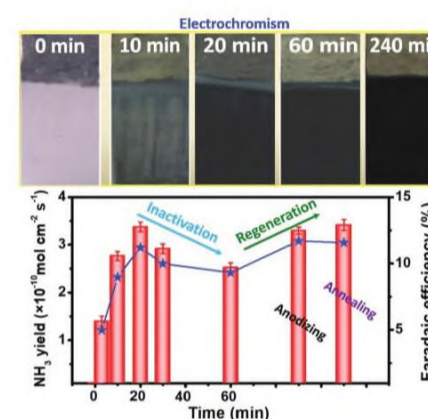
Jialu Wang^{a,b}, Shenghong Kang^a, Xiaoguang Zhu^a, Guozhong Wang^a, Haimin Zhang^a

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

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

We reported highly ordered Nb_2O_5 nanochannel film electrode for electrocatalytic NRR to NH_3 , and understood in depth its inactivation and regeneration process associated with the crystalline phase transformation of Nb_2O_5 .

Chinese Chemical Letters 32 (2021) 2833



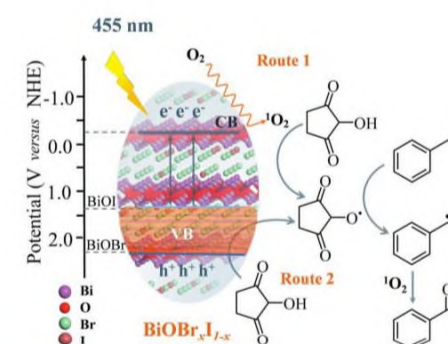
Engineering $\text{BiOBr}_x\text{I}_{1-x}$ solid solutions with enhanced singlet oxygen production for photocatalytic benzylic C—H bond activation mediated by *N*-hydroxyl compounds

Yucui Bian, Yongpan Gu, Xiaofei Zhang, Haijun Chen, Zhongjun Li

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

This work shows the achievement of the room temperature visible-light-driven photocatalytic activation of benzylic C—H bonds with *N*-hydroxysuccinimide over $\text{BiOBr}_x\text{I}_{1-x}$ ($0 \leq x \leq 1$) solid solutions. The optimal $\text{BiOBr}_{0.85}\text{I}_{0.15}$ photo-catalyzed ethylbenzene conversion ratio was about 3.9 and 8.9 times that of pure BiOBr and BiOI , respectively.

Chinese Chemical Letters 32 (2021) 2837



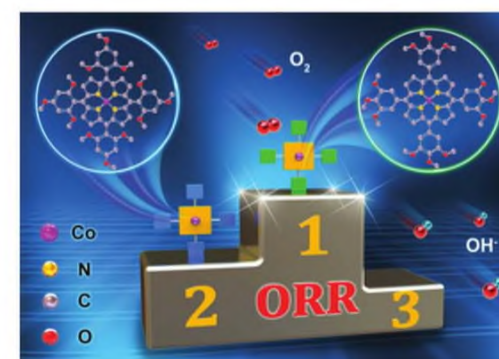
Substituent position effect of Co porphyrin on oxygen electrocatalysis

Haoyuan Lv, Hongbo Guo, Kai Guo, Haitao Lei, Wei Zhang, Haoquan Zheng, Zuozhong Liang, Rui Cao

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

Substituent position effect of Co porphyrins with three $-\text{OCH}_3$ groups at 2,4,6- and 3,4,5-positions of *meso*-phenyl groups on oxygen reduction reaction and oxygen evolution reaction was investigated.

Chinese Chemical Letters 32 (2021) 2841



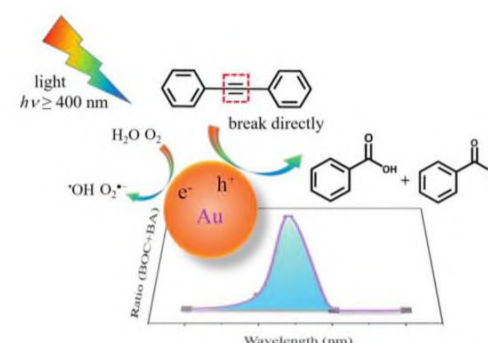
Reaction pathway change on plasmonic Au nanoparticles studied by surface-enhanced Raman spectroscopy

Ran Li, Can-Can Zhang, Dan Wang, Yan-Fang Hu, Yong-Long Li, Wei Xie

Key Lab of Advanced Energy Materials Chemistry (Ministry of Education), Tianjin Key Lab Mol Recognit & Biosensing, Renewable Energy Conversion and Storage Center, College of Chemistry, Nankai University, Tianjin 300071, China

Gold nanoparticle was served as photocatalyst and surface-enhanced Raman spectroscopy substrate to monitor the diphenylacetylene oxidation reaction, showing both plasmon-driven and conventional heterogeneous roles.

Chinese Chemical Letters 32 (2021) 2846



Artful union of a zirconium-porphyrin MOF/GO composite for fabricating an aptamer-based electrochemical sensor with superb detecting performance

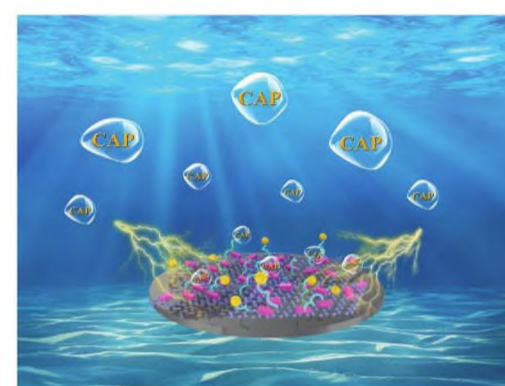
Hong-Kai Li^a, Hai-Lin Ye^a, Xiao-Xue Zhao^a, Xiao-Long Sun^a, Qian-Qian Zhu^a, Zhang-Ye Han^a, Rongrong Yuan^b, Hongming He^a

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

^b Department of Materials Science and Engineering, Jilin Jianzhu University, Changchun 130118, China

A zirconium-porphyrin metal-organic framework/graphene oxide composite is successfully constructed and employed to fabricate an aptamer-based electrochemical aptasensor with ultra-sensitive detecting performance for chloramphenicol.

Chinese Chemical Letters 32 (2021) 2851



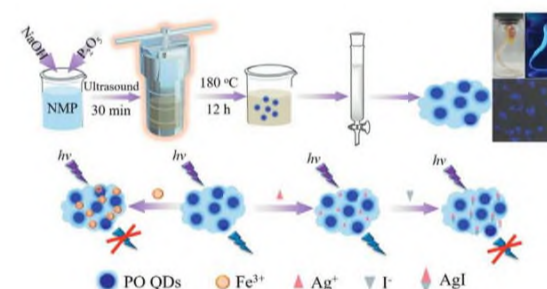
A novel phosphorus oxide quantum dots as an emissive nanomaterial for inorganic ions screening and bioimaging

Zhen Fang, Yuting Liang, Xiaomei Wang, Shuhan Zhang, Jun Yu, Hu Xu, Yuhong Wang

Research Institute of Applied Catalysis, School of Chemical and Environmental Engineering, Shanghai Institute of Technology, Shanghai 201418, China

A novel phosphorus containing nanoparticle *i.e.*, phosphorus oxide quantum dots (PO QDs) was firstly synthesized. The resulting PO QDs exhibited the good photoluminescence feature, excellent biocompatibility, and low toxicity, which enabled it to serve as a promising emissive nanomaterial for inorganic ions screening as well as bioimaging application.

Chinese Chemical Letters 32 (2021) 2856



Flexibly regulated electrochemiluminescence of all-inorganic perovskite CsPbBr₃ quantum dots through electron bridge to across interfaces between polar and non-polar solvents

Nan Hao^a, Yu Qiu^a, Jinwen Lu^a, Xu Han^c, Yaqi Li^d, Jing Qian^a, Kun Wang^{a,b}

^a School of Chemistry and Chemical Engineering, Jiangsu University, Zhenjiang 212013, China

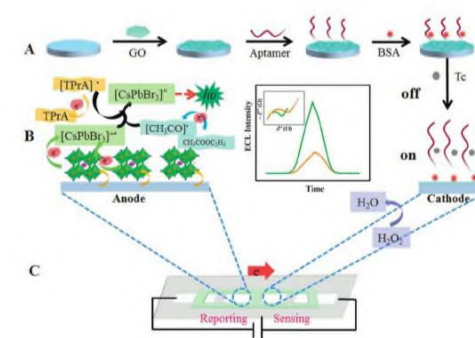
^b Key Laboratory of Sensor Analysis of Tumor Marker, Ministry of Education, College of Chemistry and Molecular Engineering, Qingdao University of Science and Technology, Qingdao 266042, China

^c Science and Technology on Space Physics Laboratory, Beijing 10076, China

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

The flexibly regulated electrochemiluminescence of all-inorganic perovskite CsPbBr₃ quantum dots through electron bridge to across interfaces between polar and non-polar solvents was successfully explored using the closed bipolar electrode.

Chinese Chemical Letters 32 (2021) 2861



An intriguing electrochemical impedance aptasensor based on a porous organic framework supported silver nanoparticles for ultrasensitively detecting theophylline

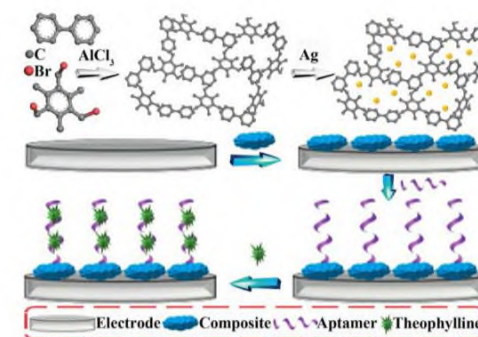
Zhang-Ye Han^a, Hong-Kai Li^a, Qian-Qian Zhu^a, Rongrong Yuan^b, Hongming He^a

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

^b Department of Materials Science and Engineering, Jilin Jianzhu University, Changchun 130118, China

An electrochemical aptasensor based on the Ag@POF composite is successfully fabricated with ultra-sensitiveness, high selectivity, remarkable stability and good repeatability in the detection of theophylline even in various real samples.

Chinese Chemical Letters 32 (2021) 2865



Dual emission of singlet and triplet states boost the sensitivity of pressure-sensing

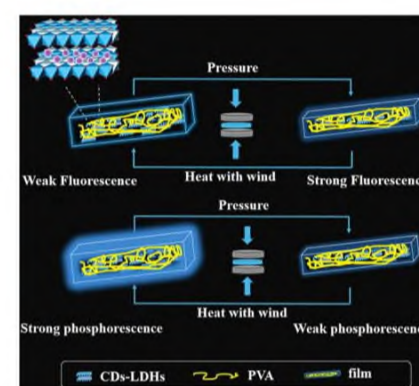
Xingyu Cui^a, Xia Xing^a, Xinrui Wang^b, Wenyong Shi^a, Chao Lu^a

^a State Key Laboratory of Chemical Resource Engineering, Beijing University of Chemical Technology, Beijing 100029, China

^b Key Laboratory of Cosmetic, China National Light Industry, Beijing Technology and Business University, Beijing 100048, China

We have constructed piezochromic luminescence film with dual emission (fluorescence and phosphorescence) characteristic, which boosts the sensitivity of pressure-sensing.

Chinese Chemical Letters 32 (2021) 2869



A special o-dialdehyde fluorescent probe simultaneously sensing Hcy, GSH and its application in living cells and zebrafish imaging

Yongbin Zhang^a, Yu Zhang^{a,b}, Yongkang Yue^c, Jianbin Chao^d, Fangjun Huo^a, Caixia Yin^{b,c}

^a Shanxi Key Laboratory of Functional Molecules, Research Institute of Applied Chemistry, Shanxi University, Taiyuan 030006, China

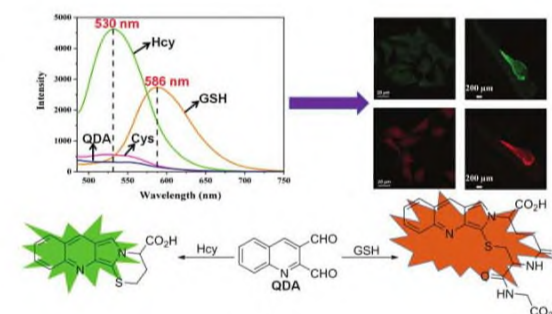
^b School of Chemistry and Chemical Engineering, Shanxi University, Taiyuan 030006, China

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

^d Scientific Instrument Center, Shanxi University, Taiyuan 030006, China

As a special o-dialdehyde fluorescent probe, quinoline-2,3-dicarboxaldehyde (QDA) was developed to selectively distinguish Hcy and GSH from different signal channels, and have successfully been applied to living cells and zebrafish imaging.

Chinese Chemical Letters 32 (2021) 2873



Combined nanosuspensions from two natural active ingredients for cancer therapy with reduced side effects

Yonghui Qiao^a, Zhihao Wei^b, Tingting Qin^c, Rufeng Song^b, Zhiqiang Yu^c, Qi Yuan^b, Juan Du^d, Qingbing Zeng^c, Lanlan Zong^b, Shaofeng Duan^b, Xiaohui Pu^b

^a Henan University of Chinese Medicine, Zhengzhou 450046, China

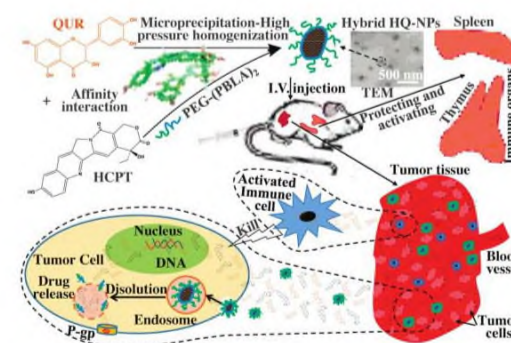
^b Institute of Pharmacy, School of Pharmacy, Henan University, Kaifeng 475004, China

^c School of Pharmaceutics Sciences, Southern Medical University, Guangzhou 510515, China

^d Department of Pharmacy, The Affiliated Cancer Hospital of Zhengzhou University, Zhengzhou 450003, China

In this paper, a new nanosuspensions, hydroxycamptothecin (HCPT) and quercetin (QR) hybrid nanosuspensions (HQ-NPs), was constructed by intermolecular force in the process of microprecipitation. HQ-NPs showed a unique shape, changed crystalline and different dissolution rates compared with HCPT-NPs and QR-NPs *in vitro*. We found that HQ-NPs can significantly enhance the accumulation of HCPT in tumor sites (reversing tumor drug resistance), improve the antitumor activity of HCPT, and protect the immune organs and other normal tissues (reducing toxicity), compared with HCPT-NPs. Therefore, hybrid nanosuspensions offer promising potential as the drug delivery system for HCPT and QR to increase the therapeutic efficacy and reduce the toxicity of HCPT.

Chinese Chemical Letters 32 (2021) 2877



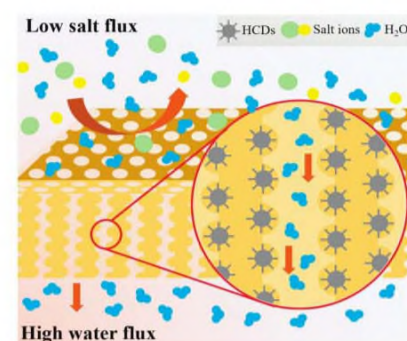
Channel regulation of TFC membrane with hydrophobic carbon dots in forward osmosis

Zongju Zhang, Jiugang Hu, Shijun Liu, Xin Hao, Lin Li, Guoqiang Zou, Hongshuai Hou, Xiaobo Ji

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

Hydrophobic carbon dots (HCDs) were introduced into the polyacrylonitrile support layer as the nanofiller to regulate water channels for an efficient forward osmosis (FO) membrane.

Chinese Chemical Letters 32 (2021) 2882



Tunable light emission from carbon dots by controlling surface defects

Huijun Li^a, Sancang Han^a, Bowen Lyu^a, Ting Hong^b, Shibo Zhi^a, Ling Xu^c, Fengfeng Xue^d, Liman Sai^e, Junhe Yang^a, Xianying Wang^a, Bin He^b

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

^b Department of Critical Care Medicine, Shanghai Chest Hospital, Shanghai Jiao Tong University, Shanghai 200030, China

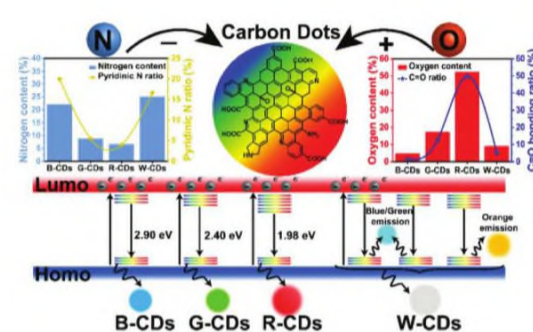
^c School of Microelectronics, Fudan University, Shanghai 200093, China

^d Shanghai Key Laboratory of Molecular Imaging, Shanghai University of Medicine and Health Sciences, Shanghai 201318, China

^e Department of Physics, Shanghai Normal University, Shanghai 200234, China

A new approach is demonstrated to tune the bandgap and color of light emission of CDs through nitrogen substitution and oxidation in a one-step facile reaction.

Chinese Chemical Letters 32 (2021) 2887



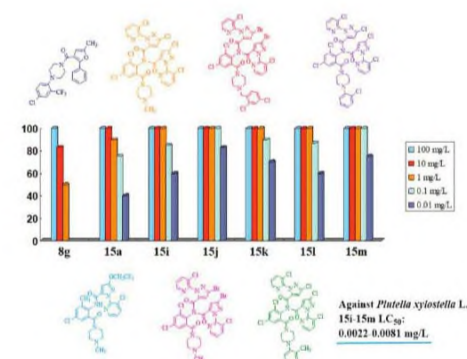
Synthesis, insecticidal activities, and SAR studies of novel piperazine-containing heterocyclic mono-/di-/tri-amide derivatives

Huan Li, Hang Liu, Yan Zhang, Na Yang, Lixia Xiong, Zhengming Li, Baolei Wang

State Key Laboratory of Elemento-Organic Chemistry, College of Chemistry, Nankai University, Tianjin 300071, China

Based on the molecular structure information of the literature computational design for RyR insecticides, this article reports synthesis, insecticidal activities and SAR studies of novel heterocyclic mono-/di-/tri-amide derivatives containing piperazine motif.

Chinese Chemical Letters 32 (2021) 2893



Surface-tuned two-dimension MXene scaffold for highly reversible zinc metal anode

Xiaoyu Liu^a, Yongzheng Fang^b, Pengcheng Liang^a, Jiahao Xu^c, Bo Xing^c, Kai Zhu^b, Yuyu Liu^a, Jiujun Zhang^a, Jin Yi^a

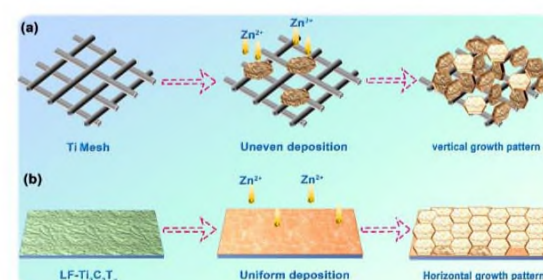
^a Department of Chemistry & Institute for Sustainable Energy, Shanghai University, Shanghai 200444, China

^b Key Laboratory of Superlight Materials and Surface Technology (Ministry of Education), College of Material Science and Chemical Engineering, Harbin Engineering University, Harbin 150001, China

^c College of Mechanical and Electrical Engineering, Jiaying University, Jiaying 314001, China

A surface-tuned two-dimension $\text{Ti}_3\text{C}_2\text{T}_x$ MXene scaffold provides fast ionic-transport paths, promising even Zn^{2+} stripping/plating processes for zinc metal anode.

Chinese Chemical Letters 32 (2021) 2899



Enhancing the performances of all-small-molecule ternary organic solar cells via achieving optimized morphology and 3D charge pathways

Yanhong Chang^{a,c}, Jing Li^{a,b,c}, Yilin Chang^{b,d}, Yixiao Zhang^{b,d}, Jianqi Zhang^b, Kun Lu^{b,d}, Xiangnan Sun^{b,d,e,f}, Zhixiang Wei^{b,d}

^a Department of Environmental Science and Engineering, University of Science and Technology Beijing, Beijing 100083, China

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

^c Beijing Key Laboratory of Resource-oriented Treatment of Industrial Pollutants, Beijing 100083, China

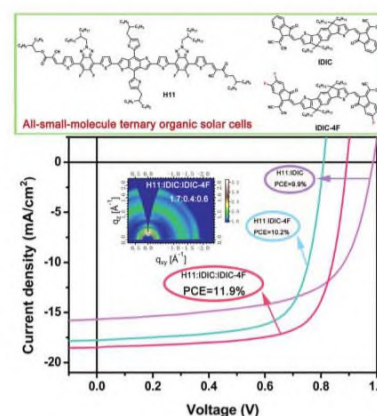
^d University of Chinese Academy of Sciences, Beijing 100049, China

^e Shandong First Medical University & Shandong Academy of Medical Sciences, Taian 271016, China

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

An all-small-molecule (ASM) ternary solar cell has been constructed by using a donor of H11 and two acceptors (IDIC and IDIC-4F) with similar backbone. The third component of IDIC plays an important role in optimizing the morphology and forming 3D charge pathways for high-efficiency charge transport and photovoltaic performance.

Chinese Chemical Letters 32 (2021) 2904



Solvent regulation strategy of Co-MOF-74 microflower for supercapacitors

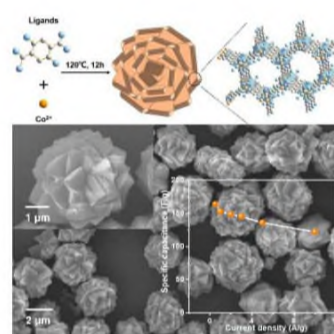
Changli Wang^a, Xinran Li^a, Wenping Yang^a, Yuxia Xu^b, Huan Pang^a

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

^b Guangling College, Yangzhou University, Yangzhou 225009, China

A solvent regulation strategy is presented for preparing Co-MOF-74 microflower with expected proportions of each component and optimized crystal growth orientation, which accelerates the interfacial electron and ion transfer and enhances the electrochemical stability for supercapacitors.

Chinese Chemical Letters 32 (2021) 2909



Highly elastic cobweb-like SiO/CNF composites with reconstructed heterostructure for high-efficient lithium storage

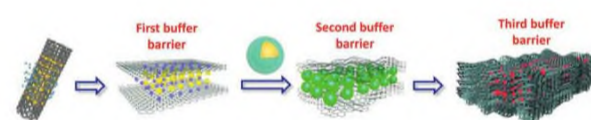
Jie Liu^a, Miao Ben^a, Andeng Liu^a, Jianwen Liu^a, Shiquan Wang^a, Jiujuan Zhang^b

^a Hubei Collaborative Innovation Center for Advanced Organic Chemical Materials & Ministry of Educational Key Laboratory for the Synthesis and Application of Organic Functional Molecules & College of Chemistry and Chemical Engineering, Hubei University, Wuhan 430062, China

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

The lithium oxide and lithium silicate compounds can be regarded as the first buffer barrier. The cobweb-like carbon nanofibers constructed by electrostatic spinning can act as the second and third buffer barriers simultaneously.

Chinese Chemical Letters 32 (2021) 2914



Hierarchically porous nitrogen-doped carbon foams decorated with zinc nanodots as high-performance sulfur hosts for lithium-sulfur battery

Zhibo Liu^{a,b}, Li Wang^{a,b}, Wantai Yang^{a,b,c}

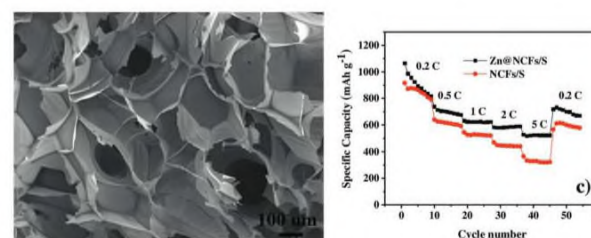
^a State Key Laboratory of Chemical Resource Engineering, Beijing University of Chemical Technology, Beijing 100029, China

^b School of Materials Science and Engineering, Beijing University of Chemical Technology, Beijing 100029, China

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

Hierarchically porous nitrogen-doped carbon foams decorated with zinc nanodots are used as high-performance sulfur hosts, whose synergistic effect results in superior sulfur utility and large capacity.

Chinese Chemical Letters 32 (2021) 2919



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