

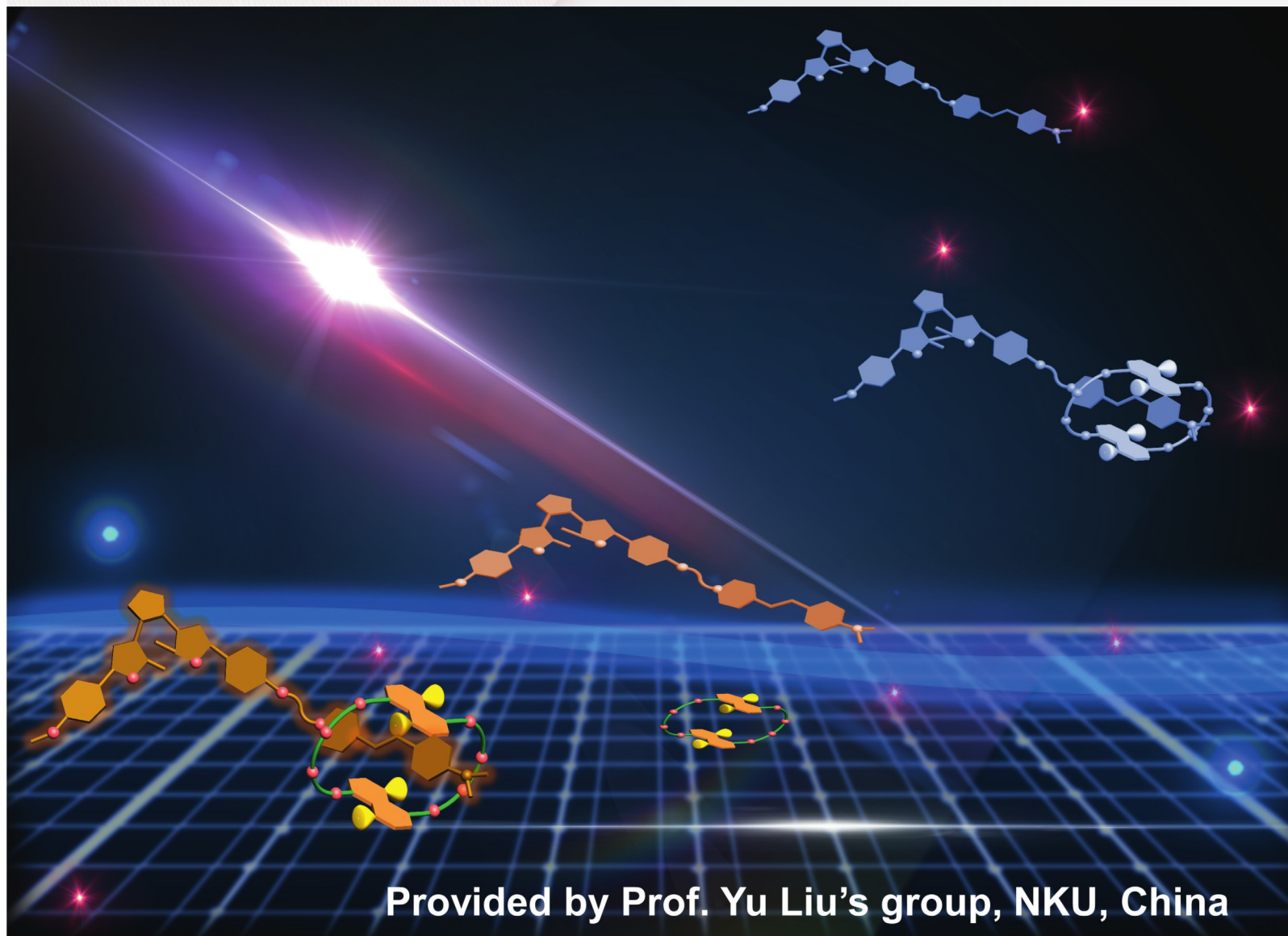
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Provided by Prof. Yu Liu's group, NKU, China



REVIEW

Xiaopeng Wang, Yuchen Qin et al.
Recent progress in advanced core-shell metal-based catalysts for electrochemical carbon dioxide reduction

COMMUNICATION

Chaozheng He, Ling Fu et al.
Predicted a honeycomb metallic BiC and a direct semiconducting Bi₂C monolayer as excellent CO₂ adsorbents

Chinese Chemical Society

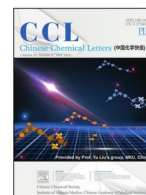
Institute of Materia Medica, Chinese Academy of Medical Sciences

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Graphical Abstracts/Chin Chem Lett 33 (2022) iii–xxvi

Reviews

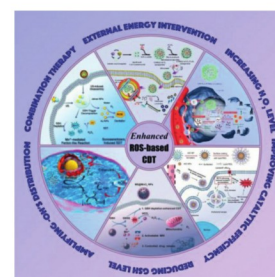
Recent advances in enhancing reactive oxygen species based chemodynamic therapy

Xinchao Li, Rui Luo, Xiuqi Liang, Qinjie Wu, Changyang Gong

State Key Laboratory of Biotherapy and Cancer Center, West China Hospital, Sichuan University, Chengdu 610041, China

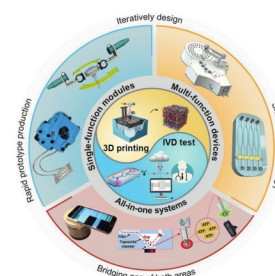
This review summarized several strategies to improve reactive oxygen species based chemodynamic therapy involved tumor treatment by 1) improving catalytic efficiency; 2) increasing hydrogen peroxide levels at tumor site; 3) reducing glutathione levels at tumor site; 4) applying external energy intervention; 5) amplifying the distribution of hydroxyl radicals at tumor site; and 6) combination therapy.

Chinese Chemical Letters 33 (2022) 2213

An integrative review on the applications of 3D printing in the field of *in vitro* diagnosticsJian Yang^a, Yanxiang Cheng^a, Xia Gong^a, Shengzhu Yi^a, Cheuk-Wing Li^c, Lelun Jiang^a, Changqing Yi^{a,b}^a Guangdong Provincial Key Laboratory of Sensor Technology and Biomedical Instrument, School of Biomedical Engineering, Sun Yat-sen University, Shenzhen 518107, China^b Research Institute of Sun Yat-sen University in Shenzhen, Shenzhen 518057, China^c School of Science and Technology, Nottingham Trent University, Clifton Lane, Nottingham NG11 8NS, United Kingdom

The latest developments of 3D printing techniques and typical 3D-printed analytical devices varying from single-function modules to all-in-one systems for *in vitro* diagnostics (IVD) applications are summarized.

Chinese Chemical Letters 33 (2022) 2231

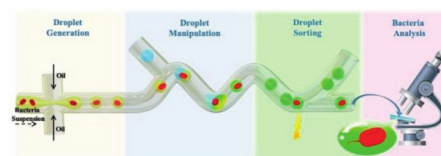


Recent developments of droplets-based microfluidics for bacterial analysis

Ruizhi Ning^a, Jinhai Fan^b, Liang Kong^c, Xue Jiang^a, Yun Qian^d, Tao Du^a, Guangjian Zhang^b, Weiwei Wu^a^a Interdisciplinary Research Center of Smart Sensors, Academy of Advanced Interdisciplinary Research, Xidian University, Xi'an 710071, China^b The First Affiliated Hospital of Xi'an Jiaotong University, Xi'an 710061, China^c State Key Laboratory of Military Stomatology & National Clinical Research Center for Oral Diseases and Shaanxi Clinical Research Center for Oral Diseases, Department of Oral and Maxillofacial Surgery, School of Stomatology, Air Force Medical University, Xi'an 710032, China^d Stomatology Hospital, School of Stomatology, Zhejiang University School of Medicine, Clinical Research Center for Oral Diseases of Zhejiang Province, Key Laboratory of Oral Biomedical Research of Zhejiang Province, Cancer Center of Zhejiang University, Hangzhou 310006, China

Droplet-based micro-fluidics is a promising analytical technology in featuring small-sample, high-throughput, highly sensitive, and timesaving, etc. This mini-review article introduced and summarized recent advances on the micro-droplets' generation and manipulation in micro-fluidics for bacteria detection and analysis, and their potential applications.

Chinese Chemical Letters 33 (2022) 2243



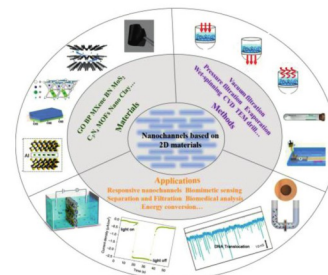
Construction and application of bioinspired nanochannels based on two-dimensional materials

Jinlin Hao, Weijie Wang, Jiawei Zhao, Honglin Che, Lu Chen, Xin Sui

College of Materials Science and Engineering, Qingdao University, Qingdao 266071, China

Bioinspired nanochannels based on 2D materials have attracted a great deal of attention as their unique layered structure, various materials, facile preparation and valuable applications.

Chinese Chemical Letters 33 (2022) 2291



Complex coordinated functional groups: A great genes for nonlinear optical materials

Weikang Wang^a, Dajiang Mei^{a,c}, Shaoguo Wen^a, Jian Wang^b, Yuandong Wu^a

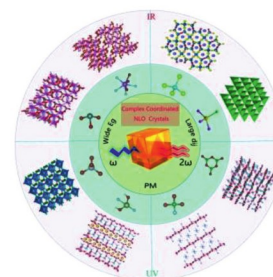
^a College of Chemistry and Chemical Engineering, Shanghai University of Engineering Science, Shanghai 201620, China

^b Department of Chemistry and Biochemistry, Wichita State University, Wichita, KS 67260, United States

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

This review systematically summarizes complex coordinated nonlinear optical materials in recent five years from the perspective of the internal relationship between crystal structure and optical properties.

Chinese Chemical Letters 33 (2022) 2301



Research progress of tunnel-type sodium manganese oxide cathodes for SIBs

Jie Feng^{a,d}, Shaohua Luo^{a,b,c,d,e}, Kexing Cai^{a,d}, Shengxue Yan^{a,d}, Qing Wang^{a,c,d}, Yahui Zhang^{a,c,d}, Xin Liu^{a,c,d}

^a School of Materials Science and Engineering, Northeastern University, Shenyang 110819, China

^b State Key Laboratory of Rolling and Automation, Northeastern University, Shenyang 110819, China

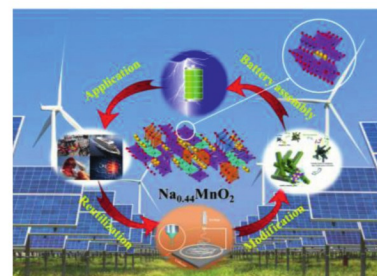
^c School of Resources and Materials, Northeastern University at Qinhuangdao, Qinhuangdao 066004, China

^d Key Laboratory of Dielectric and Electrolyte Functional Material Hebei Province, Qinhuangdao 066004, China

^e Qinhuangdao Laboratory of Resources Cleaner Conversion and Efficient Utilization, Qinhuangdao 066004, China

Tunnel-type sodium manganese oxide $\text{Na}_{0.44}\text{MnO}_2$ is a promising high performance electrode material for sodium ion batteries, which is developing towards sustainable and multifunctional energy storage devices.

Chinese Chemical Letters 33 (2022) 2316



Metallic glasses and metallic glass nanostructures for functional electrocatalytic applications

Aneeshkumar K.S.^{a,b}, Jinsen Tian^{a,c}, Jun Shen^a

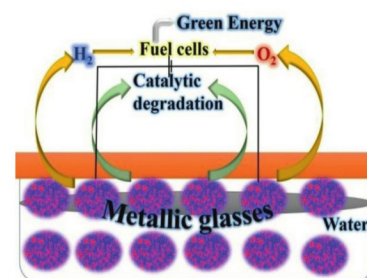
^a College of Mechatronics and Control Engineering, Shenzhen University, Shenzhen 518060, China

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

^c Shenzhen Key Laboratory of High Performance Nontraditional Manufacturing, College of Mechatronics and Control Engineering, Shenzhen University, Shenzhen 518060, China

We report the recent and relevant advancements in the field of metallic glasses and metallic glass nanostructures for functional electrocatalytic applications.

Chinese Chemical Letters 33 (2022) 2327



Emerging 2D pnictogens for biomedical applications

Ruoyao Li^a, Zhengbao Zha^a, Zhaohua Miao^a, Cheng-Yan Xu^{b,c}

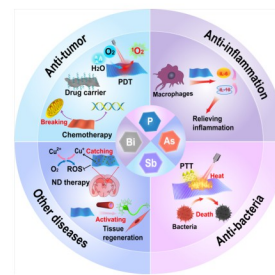
^a School of Food and Biological Engineering, Hefei University of Technology, Hefei 230009, China

^b Savage Laboratory for Smart Materials, School of Materials Science and Engineering, Harbin Institute of Technology (Shenzhen), Shenzhen 518055, China

^c Shenzhen Bay Laboratory, Shenzhen 518132, China

This review provides a concise summary of the biomedical applications, e.g., anti-tumor, anti-inflammation, anti-bacterial, neurodegenerative diseases treatment and tissue repairing, of two-dimensional pnictogens including black phosphorus, arsenene, antimonene and bismuthine.

Chinese Chemical Letters 33 (2022) 2345



Recent advances in graphene oxide catalyzed organic transformations

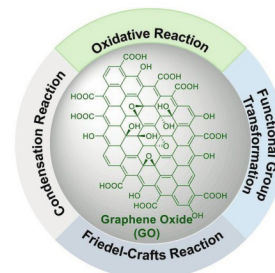
Fan Gao^a, Shouren Zhang^b, Qiyan Lv^a, Bing Yu^a

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

^b Henan Key Laboratory of Nanocomposites and Applications, Institute of Nanostructured Functional Materials, Huanghe Science and Technology College, Zhengzhou 450006, China

The applications of native GO as a catalyst for various organic transformations in the past decade (mainly from 2011 to 2020) are summarized in this minireview.

Chinese Chemical Letters 33 (2022) 2354



Advances in cycloaddition and hydroaddition reaction of α -(trifluoromethyl)styrenes without defluorination: An alternative approach to CF_3 -containing compounds

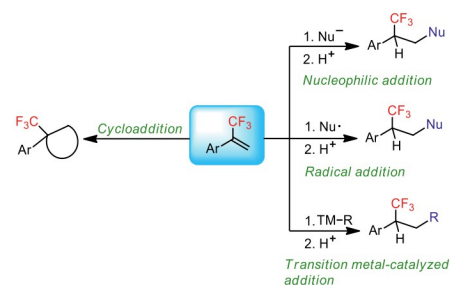
Yupian Deng^a, Jingjing He^a, Song Cao^a, Xuhong Qian^{a,b}

^a Shanghai Key Laboratory of Chemical Biology, School of Pharmacy, East China University of Science and Technology (ECUST), Shanghai 200237, China

^b School of Chemistry and Molecular Engineering, East China Normal University, Shanghai 200062, China

We summarize the recent progress on the cycloaddition and hydroaddition reaction including nucleophilic, radical and transition metal-catalyzed addition of α -(trifluoromethyl)styrenes without accompanying defluorination.

Chinese Chemical Letters 33 (2022) 2363



Recent advances in tertiary amine Lewis base-promoted cycloadditions of allenates

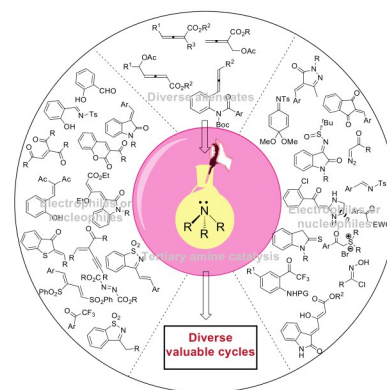
Manman Song^a, Jing Zhao^b, Er-Qing Li^a

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

^b Xuchang Environmental Monitoring Center, Xuchang 461000, China

This tutorial review will describe the selected examples of tertiary amine Lewis base promoted cycloaddition of allenates with a wide range of electrophile/nucleophiles to give diverse annulations.

Chinese Chemical Letters 33 (2022) 2372



Communications

A copper-catalyzed three-component reaction of alkenes, cycloketone oximes and DABCO·(SO₂)₂: Direct C(sp²)-H cyanoalkylsulfonylation

Yating Liu^a, Luoyu Wang^a, Ling-Hui Zeng^b, Yun Zhao^a, Tonghao Zhu^a, Jie Wu^{a,c,d}

^aSchool of Pharmaceutical and Chemical Engineering & Institute for Advanced Studies, Taizhou University, Taizhou 318000, China

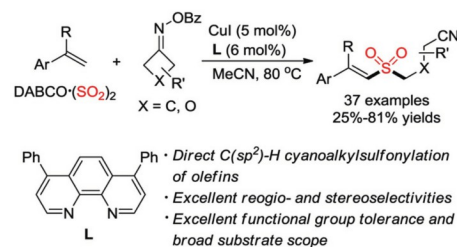
^bDepartment of Pharmacology, Zhejiang University City College, Hangzhou 310015, China

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

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

A copper-catalyzed three-component reaction of alkenes, cycloketone oximes and DABCO·(SO₂)₂ is developed, which provides a convenient route for the synthesis of diverse (*E*)-cyanoalkylsulfonyl alkenes in moderate to good yields with excellent regio- and stereoselectivity.

Chinese Chemical Letters 33 (2022) 2383



Computational insights into the effects of reagent structure and bases on nucleophilic monofluoromethylation of aldehydes

Meng-Meng Zheng^a, Hao-Dong Tan^a, Yueqian Sang^b, Xiao-Song Xue^{a,b}, Jin-Pei Cheng^{a,c}

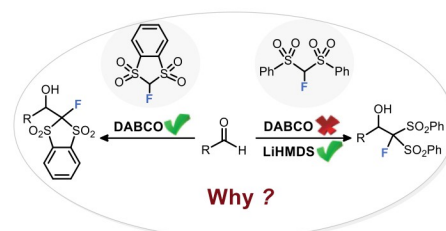
^aState Key Laboratory of Elemento-Organic Chemistry, College of Chemistry, Nankai University, Tianjin 300071, China

^bKey Laboratory of Organofluorine Chemistry, Shanghai Institute of Organic Chemistry, University of Chinese Academy of Sciences, Chinese Academy of Sciences, Shanghai 200032, China

^cCenter of Basic Molecular Science, Department of Chemistry, Tsinghua University, Beijing 100084, China

The intriguing effects of reagent structure and bases on the nucleophilic monofluoromethylation of aldehydes have been elucidated by virtue of density functional theory calculations.

Chinese Chemical Letters 33 (2022) 2387



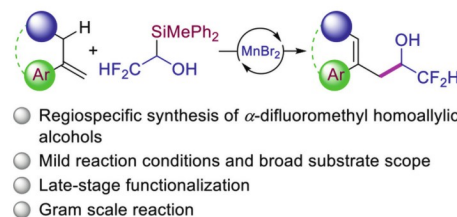
MnBr₂ catalyzed regioselective oxidative Mizoroki-Heck type reaction

Xiang Chen, Zhihong Zhu, Shanshan Liu, Yi-Hung Chen, Xiao Shen

Institute for Advanced Studies, Engineering Research Center of Organosilicon Compounds & Materials, Ministry of Education, Wuhan University, Wuhan 430072, China

A regioselective oxidative Mizoroki-Heck type reaction for the synthesis of α -difluoromethyl homoallylic alcohols is described. Late-stage functionalization of complex biologically active molecules demonstrates the synthetic potential of this transformation.

Chinese Chemical Letters 33 (2022) 2391



Palladium-catalyzed relay C-H functionalization to construct novel hybrid-arylcylophosphorus ligand precursors

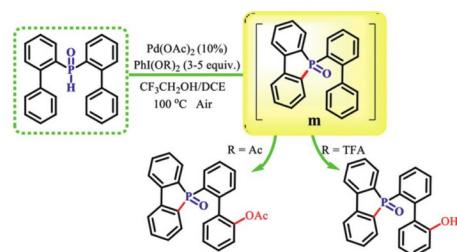
Juan Wang^a, Peng-Bo Bai^a, Shang-Dong Yang^{a,b}

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

^bState Key Laboratory for Oxo Synthesis and Selective Oxidation, Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, Lanzhou 730000, China

New relay C-H functionalizations of di((1,1'-biphenyl)-2-yl)phosphine oxide to obtain esterified and hydroxylated hybrid-arylcylophosphorus ligand precursors with different hypervalent iodines as oxidants under palladium catalysis were performed.

Chinese Chemical Letters 33 (2022) 2397



Well-defined phosphate yttrium dialkyl complexes for catalytic stereo-controllable 1,4-polymerization of isoprene

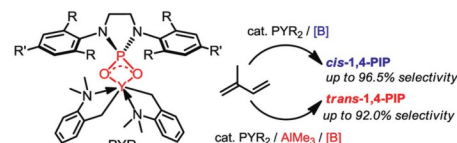
Pusu Yang^a, Hui-Zhen Du^a, Xiang-Yu Zhang^a, Yong-Liang Xia^a, Jun-Tao Sun^a, Qian Peng^a, Bing-Tao Guan^b

^aCollege of Chemistry, Nankai University, Tianjin 300071, China

^bDepartment of Chemistry, Fudan University, Shanghai 200438, China

Well-defined dialkyl yttrium complexes bearing phosphate ancillary ligands were synthesized and characterized. The phosphate yttrium complexes featured a high stability and a tunable ligand, enabling the stereo-controllable 1,4-polymerization of isoprene.

Chinese Chemical Letters 33 (2022) 2402



Dehydrative Beckmann rearrangement and the following cascade reactions

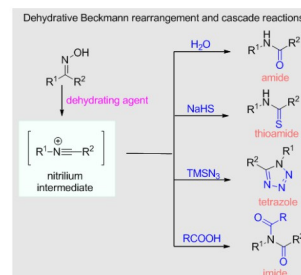
Yongjiao Wei^a, Yinghui Liu^b, Lan-Gui Xie^a

^a School of Chemistry and Materials Science, Jiangsu Collaborative Innovation Center of Biomedical Functional Materials, Nanjing Normal University, Nanjing 210023, China

^b College of Life Sciences, Nanjing Normal University, Nanjing 210023, China

A series of Beckmann rearrangement and following cascade reactions have been developed herein, with *in situ* generated Appel's salt or Mitsunobu's zwitterionic adduct as the dehydrating agent. The protocol allows the conversion of various ketoximes into amides, thioamides, tetrazoles and imides in modular procedures.

Chinese Chemical Letters 33 (2022) 2407



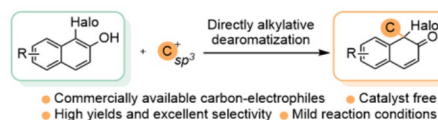
Transition metal-free dearomatization of halonaphthols with C(sp³)-electrophiles

Naichen Zhang, Yuanzhi Ye, Lu Bai, Jingjing Liu, Han Wang, Xinjun Luan

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

An intermolecular electrophilic dearomatization of halonaphthols with benzyl/allyl bromides is described. Halonaphthols are used as carbon-nucleophiles with benzyl/allyl bromides in this dearomatization, and a wide range of cyclic enones is directly prepared.

Chinese Chemical Letters 33 (2022) 2411



Highly enantioselective construction of CF₃-bearing all-carbon quaternary stereocenters: Chiral spiro-fused bisoxazoline ligands with 1,1'-binaphthyl sidearm for asymmetric Michael-type Friedel-Crafts reaction

Robert Li-Yuan Bao^a, Lei Shi^{a,b,c,d}, Kang Fu^a

^a School of Science, Harbin Institute of Technology, Shenzhen 518055, China

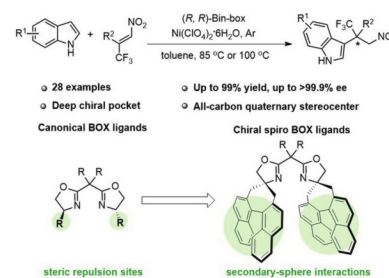
^b State Key Laboratory of Elemento-Organic Chemistry, Nankai University, Tianjin 300071, China

^c Guangdong Provincial Key Laboratory of Catalysis, Southern University of Science and Technology, Shenzhen 518055, China

^d School of Chemistry and Chemical Engineering, Harbin Institute of Technology, Harbin 150001, China

A novel class of chiral spiro-fused bisoxazoline ligands possessing a deep chiral pocket was prepared. The developed ligands have been employed in the nickel-catalyzed highly enantioselective Michael-type Friedel-Crafts reaction, affording the products bearing a trifluoromethylated all-carbon quaternary stereocenter with moderate to excellent yields (up to 99%) and good to excellent enantioselectivities (up to > 99.9% *ee*).

Chinese Chemical Letters 33 (2022) 2415



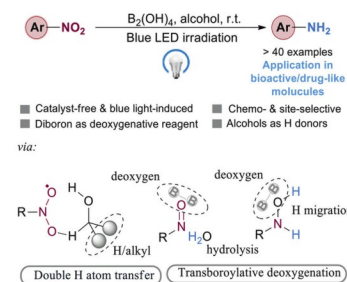
Chemo-, site-selective reduction of nitroarenes under blue-light, catalyst-free conditions

Bin Wang, Jiawei Ma, Hongyuan Ren, Shuo Lu, Jingkai Xu, Yong Liang, Changsheng Lu, Hong Yan

State Key Laboratory of Coordination Chemistry, Jiangsu Key Laboratory of Advanced Organic Materials, School of Chemistry and Chemical Engineering, Nanjing University, Nanjing 210023, China

The tandem reaction of photoinduced double hydrogen-atom transfer and deoxygenative transborylation for chemo- and site-selective reduction of nitroarenes into aryl amines under catalyst-free, room temperature conditions was disclosed in excellent yields. A detailed mechanistic investigation in combination of experiments and theoretical calculations gave a reasonable explanation for the reaction pathway.

Chinese Chemical Letters 33 (2022) 2420



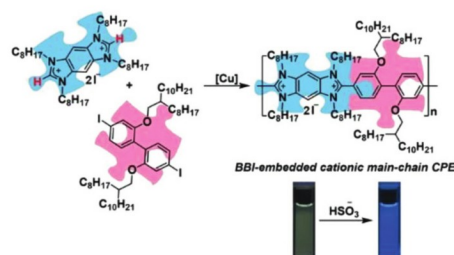
A prototype of benzobis(imidazolium)-embedded conjugated polyelectrolyte: Synthesis by direct C–H arylation and fluorescent responses to anions

Chuangui Yu, Qinze Zheng, Linhua Wang, Tianbao Wang, Xuesong Zheng, Ge Gao

Key Laboratory of Green Chemistry and Technology of Ministry of Education, College of Chemistry, Sichuan University, Chengdu 610064, China

A Cu-catalyzed C–H polymerization protocol is developed to synthesize a prototype of cationic benzobis(imidazolium)-embedded conjugated polyelectrolyte **pBBI**. It responds to the bisulfite anion with intensified unique deep blue-colored fluorescence, in contrast to the well-known amplified fluorescence quenching behaviors of side-chain CPES.

Chinese Chemical Letters 33 (2022) 2425



Facile synthesis of (β -chlorodifluoroethyl)phosphonates via chlorination reaction of difluoroalkyl diazo derivatives with HCl

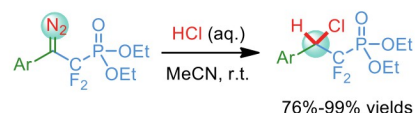
Jiang Liu^a, Romana Pajkert^b, Li Wang^a, Haibo Mei^a, Gerd-Volker Röschenhaler^b, Jianlin Han^a

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

^bDepartment of Life Sciences and Chemistry, Jacobs University Bremen gGmbH, Campus Ring 1, Bremen 28759, Germany

A chlorination reaction of *in situ* generated (β -diazo- α,α -difluoroethyl)phosphonates with hydrochloric acid as a chlorine source has been developed, which proceeds *via* the sequence of pronation and chlorination, affording (β -chlorodifluoroethyl)phosphonates in up to 99% chemical yields. This reaction represents the first example on the chlorination of difluoroalkyl substituted diazos and provides an efficient way for the assembly of DFMP-containing compounds.

Chinese Chemical Letters 33 (2022) 2429



- halogenation of difluoro diazoalkanes
- hydrochloric acid as a chlorine source

Total synthesis and biological evaluation of dracaenins A and B

Yaqiu Zhao^{a,c}, Shunli Xiao^c, Yun You^c, Zhi Zhang^b, Liansuo Zu^b, Luqi Huang^c

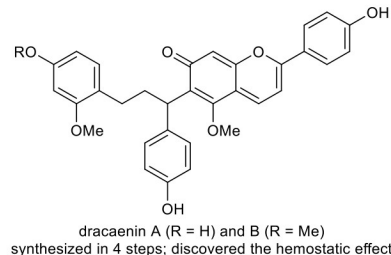
^aCollege of Pharmacy, Nanjing University of Chinese Medicine, Nanjing 210023, China

^bSchool of Pharmaceutical Sciences, Tsinghua University, Beijing 100084, China

^cState Key Laboratory Breeding Base of Dao-di Herbs, National Resource Center for Chinese Materia Medica, China Academy of Chinese Medical Sciences, Beijing 100700, China

The first total synthesis of dracaenins A and B is achieved in 4 steps. The synthesis features the convergent coupling of three readily available fragments with minimized use of protecting groups. The chemical synthesis enables the discovery of their activity in stimulating platelet aggregation, and thus, sheds light on the possible origin of the hemostatic effect of dragon's blood.

Chinese Chemical Letters 33 (2022) 2433



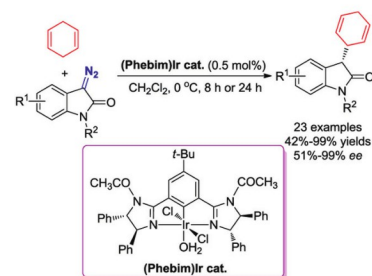
Pincer iridium(III)-catalyzed enantioselective C(sp³)-H functionalization *via* carbenoid C–H insertion of 3-diazooxindoles with 1,4-cyclohexadiene

Nan Li, Xiaoyan Yang, Yanyan Zhu, Fang Wang, Junfang Gong, Maoping Song

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

The asymmetric carbenoid C–H insertion of 3-diazooxindoles with 1,4-cyclohexadiene has been realized by using chiral bis(imidazoline) NCN pincer iridium(III) catalysts. Density functional theory (DFT) calculations suggest a stepwise mechanism and also explain the stereoselectivity of the insertion reactions.

Chinese Chemical Letters 33 (2022) 2437



Circularly polarized luminescence based on cholesterol-tetraphenylethylene-perylene liquid crystal

Shengjie Jiang^{a,b}, Shujuan Zhou^a, Ying Chen^a, Hongyu Guo^{a,b}, Fafu Yang^{a,c}

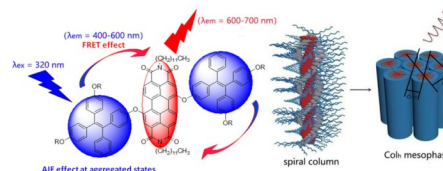
^a College of Chemistry and Materials Science, Fujian Normal University, Fuzhou 350007, China

^b Fujian Key Laboratory of Polymer Materials, Fuzhou 350007, China

^c Fujian Provincial Key Laboratory of Advanced Materials Oriented Chemical Engineering, Fuzhou 350007, China

A novel cholesterol-tetraphenylethylene-perylene with circularly polarized luminescence at aggregated state was realized.

Chinese Chemical Letters 33 (2022) 2442



Synergistic activation of photoswitchable supramolecular assembly based on sulfonated crown ether and dithienylethene derivative

Conghui Wang^a, Ying-Ming Zhang^a, Haoran Li^b, Jin Zhang^b, Yu Zhou^a, Guoxing Liu^c, Xiufang Xu^a, Yu Liu^a

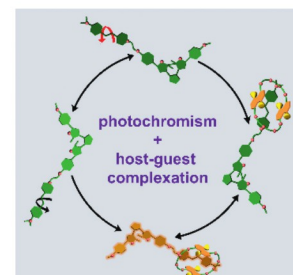
^a College of Chemistry, State Key Laboratory of Elemento-Organic Chemistry, Nankai University, Tianjin 300071, China

^b College of Computer Science, Nankai University, Tianjin 300350, China

^c College of Sciences, Henan Agricultural University, Zhengzhou 450001, China

A supramolecular photoswitch with tunable photoluminescence properties is described. The fluorescence emission of such binary assembly can be activated upon complexation of stilbazolium salt with crown ether and sequentially, the energy transfer process can be regulated by the photochromic interconversion of dithienylethene.

Chinese Chemical Letters 33 (2022) 2447



Prospering the biphen[*n*]arenes family by tailoring reaction modules

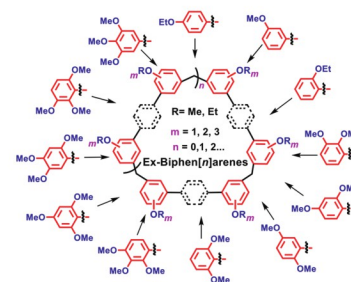
Kaidi Xu^{a,b}, Zhi-Yuan Zhang^b, Zihao Zhou^a, Chunju Li^b

^a College of Science, Center for Supramolecular Chemistry and Catalysis, Shanghai University, Shanghai 200444, China

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

The number and sites of methoxyl on reaction modules greatly affected the reaction activity, shape, and connection mode of biphen[*n*]arenes macrocycles.

Chinese Chemical Letters 33 (2022) 2451



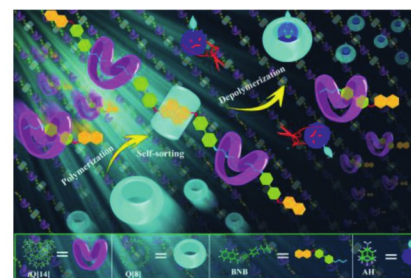
Controllable fabrication of a supramolecular polymer incorporating twisted cucurbit[14]uril and cucurbit[8]uril via self-sorting

Wei Zhang, Yang Luo, Jie Zhao, Chao Zhang, Xin-Long Ni, Zhu Tao, Xin Xiao

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

A linear supramolecular polymer with controllable features based on twisted cucurbit[14]uril (tQ[14]) and cucurbit[8]uril (Q[8]) was fabricated via an effective self-sorting strategy. Then depolymerization could be achieved by addition of adamantane hydrochloride (AH).

Chinese Chemical Letters 33 (2022) 2455



On-off-on fluorescence detection for biomolecules by a fluorescent cage through host-guest complexation in water

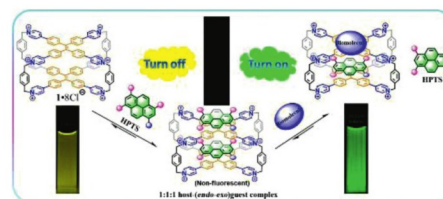
Honghong Duan^a, Fan Cao^a, Minjie Zhang^b, Meng Gao^b, Liping Cao^a

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

^b National Engineering Research Center for Tissue Restoration and Reconstruction, Key Laboratory of Biomedical Engineering of Guangdong Province, Key Laboratory of Biomedical Materials and Engineering of the Ministry of Education, Innovation Center for Tissue Restoration and Reconstruction, South China University of Technology, Guangzhou 510006, China

Fluorescent tetraphenylethene-based octacationic cage can form 1:1:1 host-(endo-exo)guest complex with two 8-hydroxypyrene-1,3,6-trisulfonic acid molecules in the hydrophobic cavity and on the positive-charged surface via π - π , hydrophobic, and electrostatic interactions in water, resulting in an on-off fluorescence process. This on-off fluorescent host-(endo-exo)guest complex is utilized for detection of biomolecules (e.g., negative-charged nucleosides, DNA, and antibiotics) and cell imaging with off-on fluorescence response via a competitive host-guest exchange with the exo-guest.

Chinese Chemical Letters 33 (2022) 2459



A two-step solvothermal procedure to improve crystallinity of covalent organic frameworks and achieve scale-up preparation

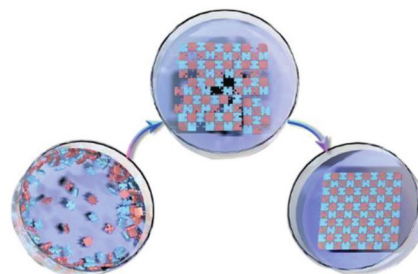
Xiang-Hao Han^a, Jia-Qi Chu^{a,b}, Wen-Zhuang Wang^a, Qiao-Yan Qi^a, Xin Zhao^a

^a Key Laboratory of Synthetic and Self-Assembly Chemistry for Organic Functional Molecules, Center for Excellence in Molecular Synthesis, Shanghai Institute of Organic Chemistry, University of Chinese Academy of Sciences, Chinese Academy of Sciences, Shanghai 200032, China

^b Shanghai Normal University, Shanghai 200234, China

A two-step solvothermal procedure is developed to synthesize covalent organic frameworks (COFs). This method not only affords COFs with high crystallinity, but also achieves scale-up synthesis.

Chinese Chemical Letters 33 (2022) 2464



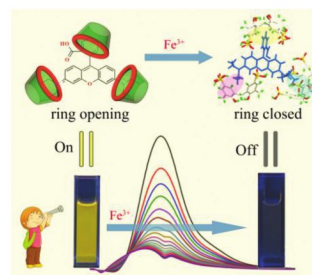
Synthesis and characterization of a sensitive and selective Fe³⁺ fluorescent sensor based on novel sulfonated calix[4]arene-based host-guest complex

Ran Cen, Ming Liu, Jihong Lu, Weifang Zhang, Jingjing Dai, Xi Zeng, Zhu Tao, Xin Xiao

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

In this work, a novel fluorescent sensor was prepared from sulfonated calix[4]arene (SC4A) by the host-guest complexation method using the fluorescent dye rhodamine B (RB). The crystal structure of the host-guest complex (RB@SC4A)₃ was confirmed by X-ray diffraction studies while its performance and sensing mechanism for metal ion pollutants were characterized using fluorescence and nuclear magnetic resonance spectroscopies. The host-guest complex exhibited sensitive and selective sensing towards Fe³⁺ ions via a fluorescence quenching mechanism.

Chinese Chemical Letters 33 (2022) 2469



1,1'-Binaphthol annulated perylene diimides: Aggregation-induced emission enhancement and chirality inversion

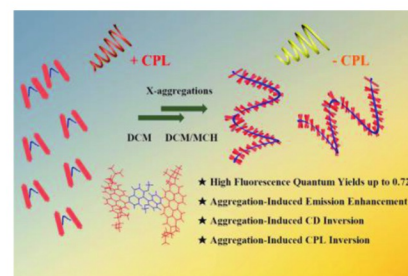
Yang Zhang^a, Juejun Wang^a, Hongming Chen^b, Meijin Lin^{a,b}

^a Key Laboratory of Molecule Synthesis and Function Discovery, College of Chemistry, Fuzhou University, Fuzhou 350116, China

^b College of Materials Science and Engineering, Fuzhou University, Fuzhou 350116, China

The unusual aggregation-induced emission enhancement and chirality inversion behaviors have been achieved simultaneously in the aggregated states of S/R-1,1'-binaphthol annulated perylene diimides.

Chinese Chemical Letters 33 (2022) 2473



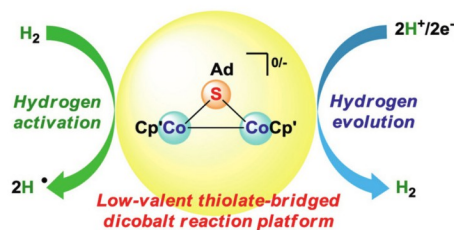
Construction of a low-valent thiolate-bridged dicobalt platform and its reactivity toward hydrogen activation and evolution

Tao Mei, Dawei Yang, Linan Su, Baomin Wang, Jingping Qu

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

A rare low-valent thiolate-bridged dicobalt scaffold was constructed by modulation of electronic and steric effects of auxiliary ligands. This reaction system featuring a short metal-metal bond can not only facilitate homolytic H_2 activation, but also drive stepwise H_2 evolution.

Chinese Chemical Letters 33 (2022) 2477



A self-assembling prodrug nanosystem to enhance metabolic stability and anticancer activity of gemcitabine

Mei Cong^a, Guangling Xu^{b,c}, Shaoyou Yang^a, Jing Zhang^{b,c}, Wenzheng Zhang^{d,e}, Dinesh Dhumal^d, Erik Laurini^f, Kaiyue Zhang^d, Yi Xia^e, Sabrina Pricl^g, Ling Peng^d, Weidong Zhao^{b,c}

^a School of Pharmacy, Xinxiang Medical University, Xinxiang 453003, China

^b Henan Key Laboratory of Immunology and Targeted Drugs, School of Laboratory Medicine, Xinxiang Medical University, Xinxiang 453003, China

^c Henan Collaborative Innovation Center of Molecular Diagnosis and Laboratory Medicine, School of Laboratory Medicine, Xinxiang Medical University, Xinxiang 453003, China

^d Aix-Marseille Université, CNRS, Center Interdisciplinaire de Nanoscience de Marseille, UMR 7325, Equipe Labellisé par La Ligue, Marseille 13288, France

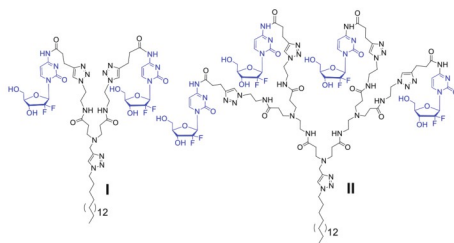
^e Chongqing Key Laboratory of Natural Product Synthesis and Drug Research, School of Pharmaceutical Sciences, Chongqing University, Chongqing 401331, China

^f Molecular Biology and Nanotechnology Laboratory, Department of Engineering and Architecture, University of Trieste, Trieste 34127, Italy

^g Department of General Biophysics, Faculty of Biology and Environmental Protection, University of Lodz, Lodz 90-236, Poland

Benefiting advantages of both prodrug and nanotechnology-based drug delivery, the dendrimeric nanoprodrug of gemcitabine exhibited promising anticancer activity with metabolic stability and transporter-independent cell uptake as well as acid- and enzyme-promoted drug release.

Chinese Chemical Letters 33 (2022) 2481



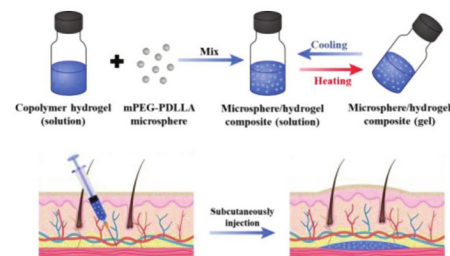
An injectable mPEG-PDLLA microsphere/PDLLA-PEG-PDLLA hydrogel composite for soft tissue augmentation

Yue Pan, Yao Xiao, Ying Hao, Kun Shi, Meng Pan, Zhiyong Qian

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

An injectable microsphere/hydrogel composite was obtained by simply mixing copolymer hydrogel and mPEG-PDLLA microsphere. This thermosensitive composite was used for skin augmentation through subcutaneous injection.

Chinese Chemical Letters 33 (2022) 2486



Seedless synthesis of gold nanorods with tunable plasmonic peaks beyond 1300 nm

Liangxi Zhu^a, Zhuoxuan Lu^b, Liming Zhang^b, Nongyue He^{a,c}

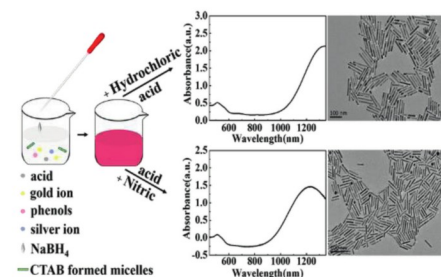
^a State Key Laboratory of Bioelectronics, School of Biological Science and Medical Engineering, Southeast University, Nanjing 210096, China

^b Key Laboratory of Tropical Disease and Translational Medicine of the Ministry of Education & Hainan Provincial Key Laboratory of Tropical Medicine, Hainan Medical College, Haikou 571101, China

^c Hunan Key Laboratory of Biomedical Nanomaterials and Devices, Hunan University of Technology, Zhuzhou 412007, China

In this article, we reported a facile and reproducible seedless synthesis method to prepare AuNRs. We used hydrochloric acid and nitric acid to adjust the solution pH and thus obtained AuNRs with the longest LSPR peak position reaching 1340 nm.

Chinese Chemical Letters 33 (2022) 2491



Targeting the Rac1 pathway for improved prostate cancer therapy using polymeric nanoparticles to deliver of NSC23766

Zean Li^{a,c,d}, Jun Huang^b, Tao Du^e, Yiming Lai^{a,c}, Kaiwen Li^{a,c}, Man-Li Luo^{c,d}, Dingjun Zhu^{a,c,d}, Jun Wu^b, Hai Huang^{a,c,d,f}

^a Department of Urology, Sun Yat-sen Memorial Hospital, Sun Yat-sen University, Guangzhou 510220, China

^b School of Biomedical Engineering, Sun Yat-sen University, Shenzhen 518107, China

^c Guangdong Provincial Key Laboratory of Malignant Tumor Epigenetics and Gene Regulation, Sun Yat-sen Memorial Hospital, Sun Yat-sen University, Guangzhou 510120, China

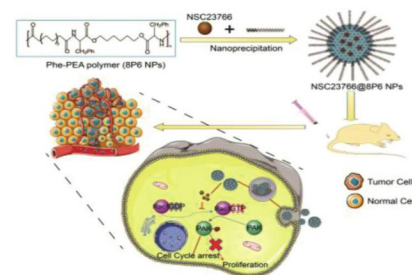
^d Medical Research Center, Sun Yat-sen Memorial Hospital, Sun Yat-sen University, Guangzhou 510120, China

^e Department of Obstetrics and Gynecology, Sun Yat-sen Memorial Hospital, Sun Yat-sen University, Guangzhou 510120, China

^f Department of Urology, The Sixth Affiliated Hospital of Guangzhou Medical University, Qingyuan People's Hospital, Qingyuan 511518, China

NSC23766-loaded Phe-PEA polymer NPs which synthesized by amino acid-based Phe-PEA polymers displayed high loading capacity with persistent blood circulation, passive tumor-targeting ability, low burst effect and optimal drug *in vitro*. In consideration of great cytotoxicity and less systemic cytotoxicity in PCA cell lines and xenografts, NSC23766-8P6 NPs could be promising as a novel strategy in the fight against PCA.

Chinese Chemical Letters 33 (2022) 2496



Boron difluoride formazanate dye for high-efficiency NIR-II fluorescence imaging-guided cancer photothermal therapy

Hanming Dai^a, Zijin Cheng^a, Tian Zhang^a, Weili Wang^a, Jinjun Shao^a, Wenjun Wang^b, Yongxiang Zhao^c, Xiaochen Dong^a, Liping Zhong^c

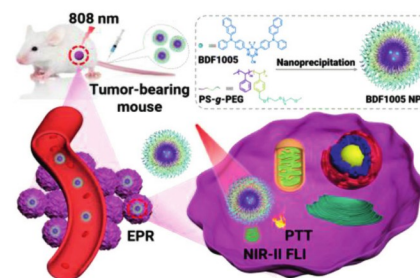
^a Key Laboratory of Flexible Electronics (KLOFE) & Institute of Advanced Materials (IAM), Nanjing Tech University (NanjingTech), Nanjing 211800, China

^b School of Physical Science and Information Technology, Liaocheng University, Liaocheng 252059, China

^c National Center for International Biotargeting Theranostics, Guangxi Key Laboratory of Biotargeting Theranostics, Collaborative Innovation Center for Targeting Tumor Theranostics, Guangxi Medical University, Nanning 530021, China

NIR-II dye BDF1005, with a novel molecular electron acceptor, is designed and synthesized. The self-assembled nanoparticles of BDF1005 not only had a NIR-II peak emission but also showed a high photothermal conversion efficiency of 39.9%, which could be used for NIR-II FLI-guided tumor photothermal therapy.

Chinese Chemical Letters 33 (2022) 2501



Co-delivery of doxorubicin and curcumin via cRGD-peptide modified PEG-PLA self-assembly nanomicelles for lung cancer therapy

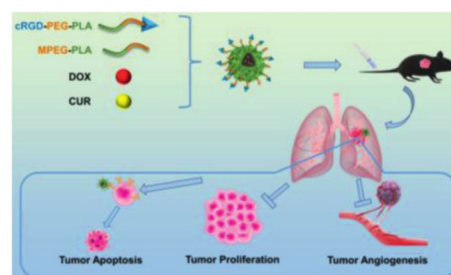
Yunchu Zhang^{a,b}, Tingting Li^{a,b}, Yuzhu Hu^{a,b}, Jing Chen^b, Yihong He^b, Xiang Gao^b, Yan Zhang^a

^a Department of Thoracic Oncology, Cancer Center, State Key Laboratory of Biotherapy, West China Hospital, West China Medical School, Sichuan University and Collaborative Innovation Center for Biotherapy, Chengdu 610041, China

^b Department of Neurosurgery and Institute of Neurosurgery, State Key Laboratory of Biotherapy and Cancer Center, West China Hospital, West China Medical School, Sichuan University and Collaborative Innovation Center for Biotherapy, Chengdu 610041, China

Self-assembled nanocomposites composed of MPEG-PLA polymer, cRGD-PEG-PLA polymer, curcumin (CUR) and doxorubicin (DOX) were injected intravenously into Lewis lung carcinoma (LL/2) tumor-bearing mice, which showed remarkable ability of promoting tumor apoptosis, inhibiting tumor proliferation and inhibiting tumor angiogenesis.

Chinese Chemical Letters 33 (2022) 2507



Nanobody-based polyvinyl alcohol beads as antifouling adsorbents for selective removal of tumor necrosis factor- α

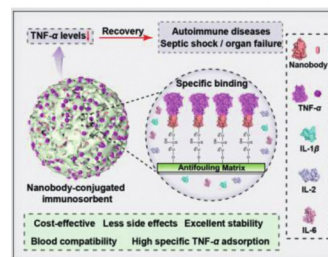
Lichun Wang^a, Yu Ding^b, Nan Li^a, Yamin Chai^a, Qiyu Li^b, Yunzheng Du^a, Zhangyong Hong^b, Lailiang Ou^a

^aThe key Laboratory of Bioactive Materials, Ministry of Education, College of Life Sciences, Nankai University, Tianjin 300071, China

^bState Key Laboratory of Medicinal Chemical Biology, Tianjin Key Laboratory of Protein Sciences, College of Life Sciences, Nankai University, Tianjin 300071, China

Nanobody-coupled antifouling polyvinyl alcohol beads as immunosorbents for selective removal of TNF- α from blood. The system has high target-binding capacity, good biocompatibility, and outstanding stability.

Chinese Chemical Letters 33 (2022) 2512



Tetrahedral framework nucleic acids regulate osteogenic differentiation potential of osteoporotic adipose-derived stem cells

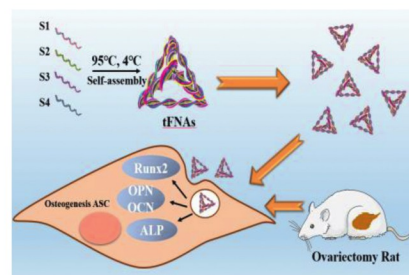
Tianyu Chen^a, Dexuan Xiao^a, Yanjing Li^a, Sirong Shi^a, Xiao Yang^a, Shuanglin Peng^a, Bin Guo^b, Xiaoxiao Cai^a

^aState Key Laboratory of Oral Diseases, National Clinical Research Center for Oral Diseases, West China Hospital of Stomatology, Sichuan University, Chengdu 610041, China

^bDepartment of Stomatology, First Medical Center of Chinese PLA General Hospital, Beijing 100853, China

In this study, the nucleic acid nanomaterial tFNAs was used to improve the proliferation and osteogenic differentiation of osteoporotic adipose-derived stem cells, and made a certain contribution to the treatment of osteoporosis.

Chinese Chemical Letters 33 (2022) 2517



Mononuclear aggregation-induced emission (AIE)-active gold(I)-isocyanide phosphors: Contrasting phosphorescent mechanochromisms and effect of halogen substitutions on room-temperature phosphorescence nature

Xiaoyan Wang^a, Zhao Chen^{a,b}, Jun Yin^a, Sheng Hua Liu^{a,c}

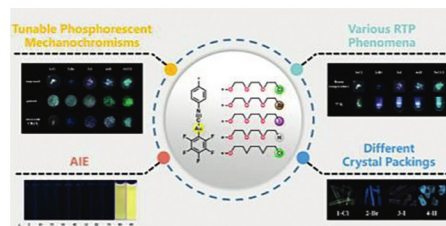
^aKey Laboratory of Pesticide and Chemical Biology, Ministry of Education, College of Chemistry, Central China Normal University, Wuhan 430079, China

^bJiangxi Key Laboratory of Organic Chemistry, Jiangxi Science and Technology Normal University, Nanchang 330013, China

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

Five gold(I) complexes exhibit various solid-state room-temperature phosphorescence (RTP) phenomena and contrasting phosphorescent mechanochromism characteristics.

Chinese Chemical Letters 33 (2022) 2522



A melatonin-based targetable fluorescent probe for screening of tumor cells and real-time imaging of glutathione fluctuations in tumor cells

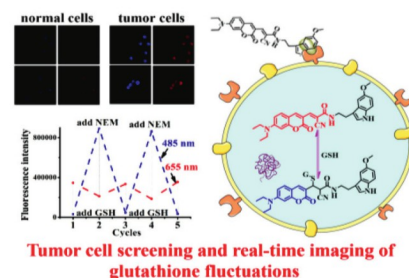
Xiwei Li^a, Caiyun Liu^a, Na Gao^a, Wenlong Sheng^b, Baocun Zhu^a

^aSchool of Water Conservancy and Environment, University of Jinan, Ji'nan 250022, China

^bBiology Institute, Qilu University of Technology (Shandong Academy of Sciences), Ji'nan 250103, China

A melatonin-based ratiometric reversible fluorescent probe with a large emission shift can trace glutathione fluctuations in tumor cells and successfully be used for the screening of tumor cells with high accuracy.

Chinese Chemical Letters 33 (2022) 2527



Structure-fluorescence relationships in pyrrole appended o-carborane crystalline materials

Dan Wang, Gang Wang, Ke Liu, Jing Li, Zhaolong Wang, Jing Liu, Liping Ding, Rong Miao, Yu Fang

Key Laboratory of Applied Surface and Colloid Chemistry, Ministry of Education, School of Chemistry and Chemical Engineering, Shaanxi Normal University, Xi'an 710062, China

Three pyrrole-appended o-carborane crystalline materials have been typically designed for systematic study on structure-fluorescence relationship in solid state. Though there is only small difference in molecular structures of the three materials, remarkable difference in fluorescence behavior was observed, suggesting the important role of molecular packing and aggregation in solid state fluorescence.

Chinese Chemical Letters 33 (2022) 2532



Forthrightly monitoring ferroptosis induced by endoplasmic reticulum stresses through fluorescence lifetime imaging of microviscosity increases with a specific rotor

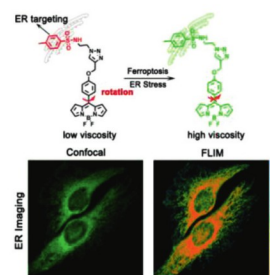
Chuanhao Liu^{a,b}, Lin Zhou^b, Lijuan Xie^a, Ying Zheng^b, Huizi Man^b, Yi Xiao^b

^a Engineering Research Center of Molecular Medicine of Ministry of Education, Key Laboratory of Fujian Molecular Medicine, School of Medicine, Huaqiao University, Quanzhou 362021, China

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

For monitoring ferroptosis in a convenient way, a specific probe has been developed to quantitatively visualize viscosity changes of any designated ER regions during different ferroptosis processes via fluorescence lifetime imaging.

Chinese Chemical Letters 33 (2022) 2537



Discovery of the anti-influenza A virus activity of SB216763 and cyclosporine A by mining infected cells and compound cellular signatures

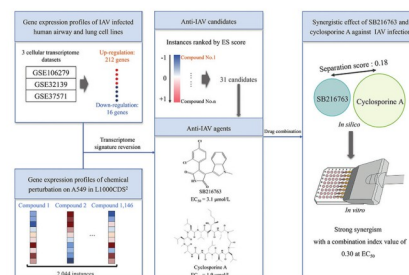
Ke Tang^{a,b}, You Wu^{a,b}, Shubing Chen^{a,b}, Yijing Xin^{a,b}, Ying Guo^{a,b}

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

^b Department of Pharmacology, Institute of Materia Medica, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing 100050, China

SB216763 and cyclosporine A were identified as anti-influenza A virus agents by a transcriptome signature reversion strategy according to the signature genes extracted from transcriptome profiles of human airway and lung cell lines with influenza A virus infection and the compound cellular signatures. A synergistic effect of SB216763 and cyclosporine A was further disclosed by network-based rational analysis and confirmed *in vitro*.

Chinese Chemical Letters 33 (2022) 2541



Structure-based optimizations of a necroptosis inhibitor (SZM594) as novel protective agents of acute lung injury

Lijuan Xu^a, Ye Tu^b, Jiao Li^c, Wannian Zhang^a, Zhibin Wang^a, Chunlin Zhuang^{a,e}, Lei Xue^d

^a School of Pharmacy, Second Military Medical University, Shanghai 200433, China

^b Department of Medicine, Shanghai East Hospital, Tongji University, Shanghai 200120, China

^c Shanghai Tenth People's Hospital, Tongji University School of Medicine, Shanghai 200072, China

^d Shanghai Changzheng Hospital, Second Military Medical University, Shanghai 200433, China

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

A series of derivatives of SZM594 were synthesized based on a structure-based design strategy. The cyclohexanone-containing analogue **41** improved the selectivity toward receptor-interacting protein kinase 1 (RIPK1) over RIPK3 and increased the anti-necroptosis activity and significantly alleviate lipopolysaccharide (LPS)-induced acute lung injury (ALI) in a mouse model.

Chinese Chemical Letters 33 (2022) 2545



Development of peptidomimetic hydroxamates as Pfa-M1 and Pfa-M17 dual inhibitors: Biological evaluation and structural characterization by cocrystallization

Anil Kumar Marapaka^{a,b,c}, Priyanka Sankuju^{b,c}, Guozhen Zhang^a, Yongzheng Ding^a, Chunhua Ma^a, Vijaykumar Pillalamarri^{b,c}, Renu Sudhakar^d, Bharati Reddi^{b,c}, Puran Singh Sijwali^d, Yingjie Zhang^a, Anthony Addlagatta^{b,c}

^a Department of Medicinal Chemistry, Key Laboratory of Chemical Biology (Ministry of Education), School of Pharmaceutical Sciences, Cheeloo College of Medicine, Shandong University, Ji'nan 250012, China

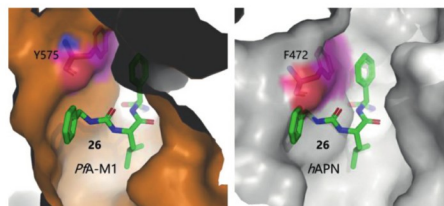
^b Department Applied Biology, CSIR-Indian Institute of Chemical Technology, Tarnaka, Hyderabad, Telangana-500 007, India

^c Academy of Scientific and Innovative Research (AcSIR), Ghaziabad-201002, India

^d CSIR-Centre for Cellular and Molecular Biology, Tarnaka, Hyderabad, Telangana-500 007, India

Compound **26** is a Pfa-M1 and Pfa-M17 dual inhibitor with significant selectivity over mammalian aminopeptidase.

Chinese Chemical Letters 33 (2022) 2550



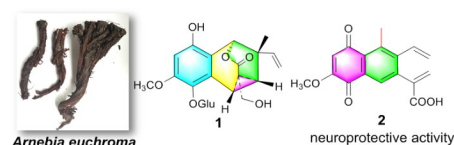
Arnequinol A and arnequinone A, two unique meroterpenoids from *Arnebia euchroma*

Hai-Wei Yan, Rong-Rong Du, Xu Zhang, Ya-Nan Yang, Xiang Yuan, Zi-Ming Feng, Jian-Shuang Jiang, Pei-Cheng Zhang

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

Arnequinol A (**1**), featuring an unprecedented 6/6/3 tricyclic carbon skeleton fused with a heptatomic oxo-bridge, together with arnequinone A (**2**) bearing a highly conjugated methyl-shifting benzozegerene skeleton, were isolated from *Arnebia euchroma*. Compound **2** showed potent neuroprotective activity against serum-deprivation induced PC12 cell damage.

Chinese Chemical Letters 33 (2022) 2555



Second-generation DNA-encoded multiple display on a constant macrocyclic scaffold enabled by an orthogonal protecting group strategy

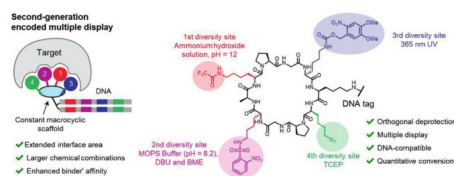
Qigui Nie^a, Shuting Zhong^a, Yangfeng Li^a, Gong Zhang^a, Yizhou Li^{a,b}

^a Chongqing Key Laboratory of Natural Product Synthesis and Drug Research, School of Pharmaceutical Sciences, Chongqing University, Chongqing 401331, China

^b Key Laboratory of Biorheological Science and Technology, Ministry of Education, College of Bioengineering, Chongqing University, Chongqing 401331, China

We presented here an orthogonal diversification approach for producing the second-generation DNA-encoded multiple display on a constant macrocyclic scaffold.

Chinese Chemical Letters 33 (2022) 2559



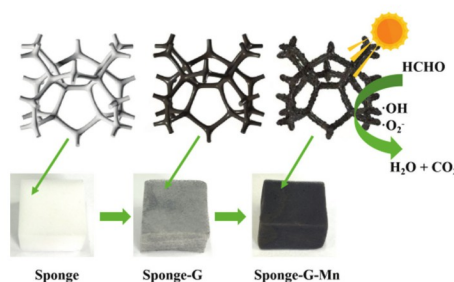
Efficiently photothermal conversion in a MnO_x-based monolithic photothermocatalyst for gaseous formaldehyde elimination

Pengfei Sun, Huijia Yu, Tingting Liu, Yingshuang Li, Zhongsen Wang, Yufei Xiao, Xiaoping Dong

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

A sponge monolithic catalyst modified by graphene and manganese oxide, which exhibited good performance of formaldehyde removal under visible light due to a surface photothermal effect.

Chinese Chemical Letters 33 (2022) 2564



Quasi-continuous synthesis of cobalt single atom catalysts for transfer hydrogenation of quinoline

Liyun Huang^{a,d}, Hao Zhang^a, Yujie Cheng^a, Qingdi Sun^a, Tao Gan^a, Qian He^a, Xiaohui He^{a,b}, Hongbing Ji^{a,b,c}

^a Fine Chemical Industry Research Institute, School of Chemistry, Sun Yat-sen University, Guangzhou 510275, China

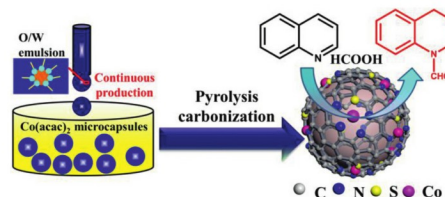
^b Huizhou Research Institute of Sun Yat-sen University, Huizhou 516216, China

^c School of Chemical Engineering, Guangdong University of Petrochemical Technology, Maoming 525000, China

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

S, N co-doped carbon supported Co single atom catalysts (Co/SNC) for transfer hydrogenation of quinoline were successfully prepared with the microcapsule-pyrolysis strategy. Benefiting from the quasi-continuous synthesis method, this work provides a new and promising approach for large-scale preparation of catalyst in industrial.

Chinese Chemical Letters 33 (2022) 2569



A 3D MIL-101@rGO composite as catalyst for efficient conversion of straw cellulose into valuable organic acid

Yuan Su^a, Mengchu Lu^b, Ruidian Su^b, Weizhi Zhou^c, Xing Xu^b, Qian Li^b

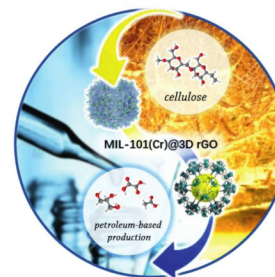
^a School of Mathematic and Quantitative Economics, Shandong University of Finance and Economics, Ji'nan 250014, China

^b Shandong Key Laboratory of Water Pollution Control and Resource Reuse, School of Environmental Science and Engineering, Shandong University, Qingdao 266200, China

^c School of Civil Engineering, Shandong University, Ji'nan 250100, China

A new composite catalyst MIL-101(Cr)@3D-rGO was synthesized by *in-situ* synthesis and used for the efficient degradation and conversion of wheat straw cellulose. The MIL-101(Cr)@3D-rGO nanocomposite possesses excellent catalytic activity, stability, recyclability and is an idea catalyst for the efficient conversion of straw cellulose into formic acid (FA), acetic acid (AA) and oxalic acid (OA).

Chinese Chemical Letters 33 (2022) 2573



Constructing a coplanar heterojunction through enhanced π - π conjugation in g-C₃N₄ for efficient solar-driven water splitting

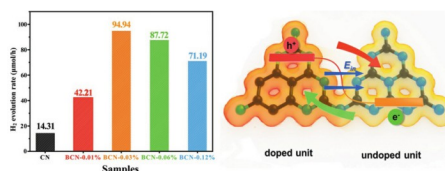
Zihao Chen^a, Ben Chong^a, Nathan Wells^a, Guidong Yang^a, Lianzhou Wang^b

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

^b School of Chemical Engineering and Australian Institute for Bioengineering and Nanotechnology, the University of Queensland, QLD 4072, Australia

The g-C₃N₄ photocatalysts with coplanar heterojunction were prepared by enhanced π - π conjugation via 1,3,5-benzenetriol. 1,3,5-Benzenetriol can participate in the composition of the tri-s-triazine unit and form an enhanced π - π conjugation structure without destroying the pristine structure. The π - π conjugation expands the absorption range while building an endogenous directional electric field, which strengthens the separation of photogenerated carriers.

Chinese Chemical Letters 33 (2022) 2579



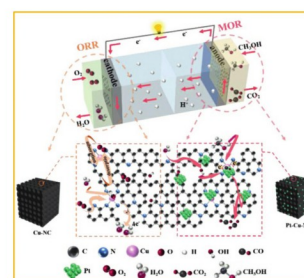
Single-Cu-atoms anchored on 3D macro-porous carbon matrix as efficient catalyst for oxygen reduction and Pt co-catalyst for methanol oxidation

Jin Ma, Bin Liu, Rongyue Wang, Zhiyao Sun, Ying Zhang, Yubo Sun, Zhuang Cai, Yao Li, Jinlong Zou

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

Reticulated C skeleton protects Cu atoms from corrosion and the interaction of single Cu atom with Pt regenerates CO-occupied sites, both of which enhance cycle stability.

Chinese Chemical Letters 33 (2022) 2585



NiCe bimetallic nanoparticles embedded in hexagonal mesoporous silica (HMS) for reverse water gas shift reaction

Hui Dai^{a,b}, Siqi Xiong^a, Yongqing Zhu^a, Jian Zheng^b, Lihong Huang^a, Changjian Zhou^c, Jie Deng^d, Xinfeng Zhang^a

^a College of Materials and Chemistry & Chemical Engineering, Chengdu University of Technology, Chengdu 610059, China

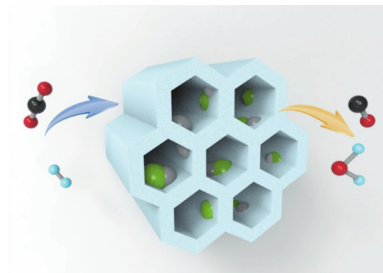
^b Department of Chemical Engineering, Sichuan University, Chengdu 610065, China

^c School of Chemistry and Chemical Engineering, Yancheng Institute of Technology, Yancheng 224051, China

^d College of Pharmacy and Bioengineering, Chengdu University, Chengdu 610106, China

NiCe-HMS bimetallic catalyst synthesized by *in-situ* one-pot method exhibits excellent catalytic performance towards the RWGS reaction.

Chinese Chemical Letters 33 (2022) 2590



Predicted a honeycomb metallic BiC and a direct semiconducting Bi₂C monolayer as excellent CO₂ adsorbents

Menghui Xi^a, Chaozheng He^a, Houyong Yang^a, Xi Fu^{b,d}, Ling Fu^c, Xiaoli Cheng^d, Jiyuan Guo^e

^a Institute of Environmental and Energy Catalysis, 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 College of Science, Hunan University of Science and Engineering, Yongzhou 425199, China

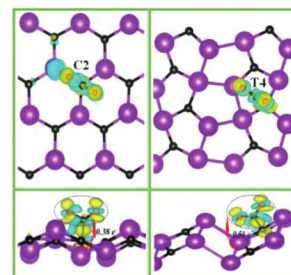
^c College of Resources and Environmental Engineering, Tianshui Normal University, Tianshui 741001, China

^d Department of Physics, Jishou University, Jishou 416000, China

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

Predicted metallic BiC monolayer with the excellent CO₂ adsorption site as C2, and predicted semiconducting Bi₂C monolayer with the excellent CO₂ adsorption site as T4.

Chinese Chemical Letters 33 (2022) 2595



Stacking driven Raman spectra change of carbon based 2D semiconductor C₃N

Yucheng Yang^{a,b,c}, Wenya Wei^d, Peng He^{b,c}, Siwei Yang^{b,c}, Qinghong Yuan^d, Guqiao Ding^{b,c}, Zhi Liu^{a,b}, Xiaoming Xie^{b,c}

^a School of Physical Science and Technology, ShanghaiTech University, Shanghai 201210, China

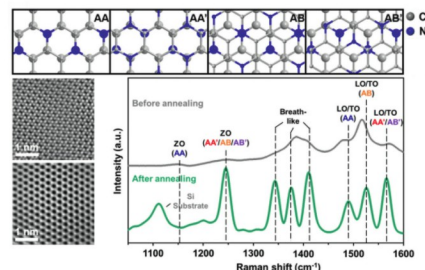
^b State Key Laboratory of Functional Materials for Informatics, Shanghai Institute of microsystem and Information Technology, Chinese Academy of Sciences, Shanghai 200050, China

^c College of Materials Science and Opto-Electronic Technology, University of Chinese Academy of Sciences, Beijing 100049, China

^d State Key Laboratory of Precision Spectroscopy, School of Physics and Electronic Science, Key Laboratory of Polar Materials and Devices (MOE), East China Normal University, Shanghai 200241, China

High-quality stacking C₃N was obtained by UV-induced graft polymerization method. Stacking driven Raman spectrum of C₃N was firstly investigated detailedly with both theoretical calculation and experimental results, revealing abundant structural information of C₃N.

Chinese Chemical Letters 33 (2022) 2600



Self-assembly of three Ag-polyoxovanadates frameworks for their efficient construction of C–N bond and detoxification of simulant sulfur mustard

Xianqiang Huang^a, Yanan Cui^a, Jinhong Zhou^a, Yalin Zhang^a, Guodong Shen^a, Qingxia Yao^a, Jikun Li^b, Zechun Xue^a, Guoping Yang^c

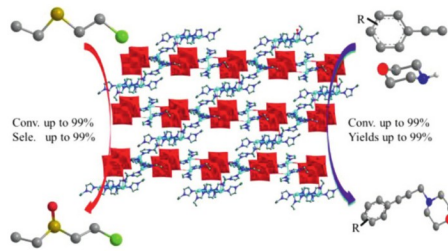
^a Shandong Provincial Key Laboratory of Chemical Energy Storage and Novel Cell Technology, School of Chemistry & Chemical Engineering, Liaocheng University, Liaocheng 252059, China

^b College of Chemistry and Chemical Engineering, Taishan University, Taian 271021, China

^c Jiangxi Province Key Laboratory of Synthetic Chemistry, Jiangxi Key Laboratory for Mass Spectrometry and Instrumentation, East China University of Technology, Nanchang 330013, China

Three novel imidazole-modified Ag-polyoxovanadates frameworks (APFs) with a controllable molar ratio of Ag to polyoxovanadates have been synthesized. Thus-obtained APFs demonstrated excellent heterogeneous catalytic properties in the construction of C–N bond and detoxification of simulant sulfur mustard.

Chinese Chemical Letters 33 (2022) 2605



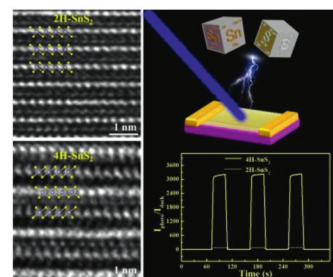
Single- and few-layer 2H-SnS₂ and 4H-SnS₂ nanosheets for high-performance photodetection

Lin Wang, Xinzhe Li, Chengjie Pei, Cong Wei, Jie Dai, Xiao Huang, Hai Li

Key Laboratory of Flexible Electronic (KLOFE) & Institute of Advanced Materials (IAM), Nanjing Tech University, Nanjing 211816, China

SnS₂ nanosheets have phase-dependent electrical properties. The 4H-SnS₂ nanosheet shows a current on/off ratio of 2.58×10^5 and photosensitivity ($I_{\text{photo}}/I_{\text{dark}}$) of 3165, which are much higher than those of the 2H-SnS₂ nanosheet (79 and 87).

Chinese Chemical Letters 33 (2022) 2611



Keggin-type polycationic AlO₄Al₁₂(OH)₂₄(H₂O)₁₂⁷⁺ intercalated MoO₃ composites for methyl orange adsorption

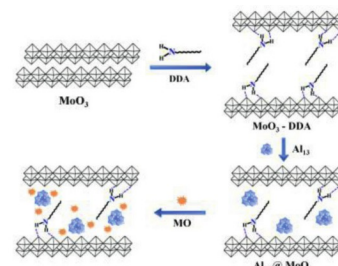
Qian Wang^a, Hongrui Tian^b, Zhong Zhang^a, Tianyi Dang^a, Wanyu Zhang^a, Jie Wang^a, Ying Lu^a, Shuxia Liu^a

^aKey Laboratory of Polyoxometalate and Reticular Material Chemistry of the Ministry of Education, College of Chemistry, Northeast Normal University, Changchun 130024, China

^bDepartment of Chemistry and Shenzhen Grubbs Institute, Southern University of Science and Technology, Shenzhen 518055, China

A series of Al₁₃@MoO₃ composites are successfully prepared by inserting AlO₄Al₁₂(OH)₂₄(H₂O)₁₂⁷⁺ (Al₁₃) with numerous positive charges into MoO₃ layers area, which can be applied to rapidly adsorb the anionic dye methyl orange (MO).

Chinese Chemical Letters 33 (2022) 2617



Olefin-linked covalent organic frameworks with twisted tertiary amine knots for enhanced ultraviolet detection

Qianying Guo^{a,b}, Hongyan Ji^c, Lei Yang^{a,b}, Daizong Ji^{a,b}, Zhaolin Ai^{a,b}, Shi Luo^{a,b}, Jiatao Sun^c, Yunqi Liu^b, Dacheng Wei^{a,b}

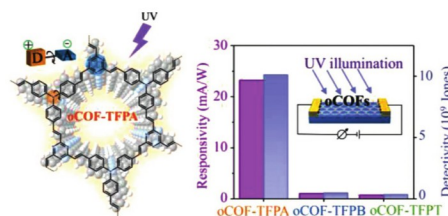
^aState Key Laboratory of Molecular Engineering of Polymers, Department of Macromolecular Science, Fudan University, Shanghai 200433, China

^bInstitute of Molecular Materials and Devices, Fudan University, Shanghai 200433, China

^cMIT Key Laboratory for Low-Dimensional Quantum Structure and Devices, Beijing Institute of Technology, Beijing 100081, China

The olefin-linked covalent organic frameworks with tertiary amine knots could facilitate the intramolecular charge transfer process with their twisted configuration and thus benefit their photoelectrical performance.

Chinese Chemical Letters 33 (2022) 2621



Preparation of a porphyrin-polyoxometalate hybrid and its photocatalytic degradation performance for mustard gas simulant 2-chloroethyl ethyl sulfide

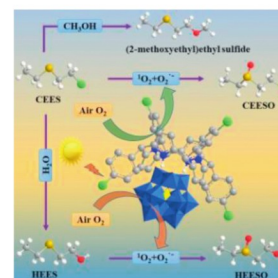
Ying Yang^a, Fangsheng Tao^a, Lijuan Zhang^a, Yunshan Zhou^a, Yuxu Zhong^b, Shubo Tian^a, Yong'an Wang^b

^aState Key Laboratory of Chemical Resource Engineering, Institute of Chemistry, Beijing University of Chemical Technology, Beijing 100029, China

^bToxicology and Medical Countermeasures, Beijing Institute of Pharmacology and Toxicology, Beijing 100850, China

Superoxide radicals and singlet oxygen generated by a new organic-inorganic hybrid material obtained by reacting a porphyrin and an α -Keggin type H₅PV₂Mo₁₀O₄₀ were found to efficiently and selectively oxidize CEES in methanol and water/methanol to nontoxic sulfoxide under visible light irradiation in air. Hydrolysis, alcoholysis and oxidation degradation mechanisms were involved in the processes.

Chinese Chemical Letters 33 (2022) 2625



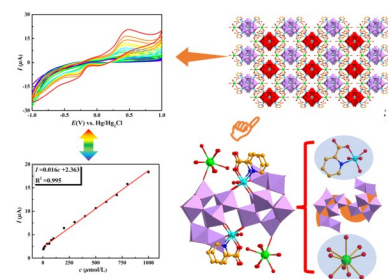
A unique organic-inorganic hybrid Fe^{III}-Pr^{III}-included 2-germano-20-tungstate and its electrochemical biosensing properties

Xiaoyi Liu, Limin Cui, Jun Jiang, Fan Ji, Junwei Zhao

College of Chemistry and Chemical Engineering, Henan University, Kaifeng 475004, China

An organic-inorganic hybrid Fe^{III}-Pr^{III}-included 2-germano-20-tungstate was prepared and its electrochemical detection of norepinephrine was studied.

Chinese Chemical Letters 33 (2022) 2630



In-situ polymerization for mechanical strong composite actuators based on anisotropic wood and thermoresponsive polymer

Lian Chen^{a,b}, Xianshuo Wei^a, Feng Wang^a, Shaoju Jian^b, Weisen Yang^b, Chunxin Ma^d, Gaigai Duan^{a,b}, Shaohua Jiang^{a,b,c}

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

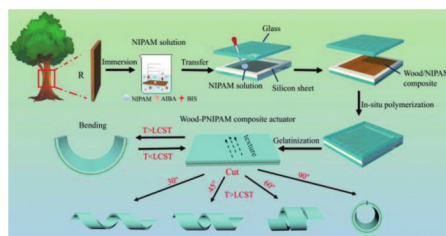
^bFujian Key Laboratory of Eco-Industrial Green Technology, College of Ecology and Resources Engineering, Wuyi University, Wuyishan 354300, China

^cShandong Key Laboratory of Biochemical Analysis, College of Chemistry and Molecular Engineering, Qingdao University of Science and Technology, Qingdao 266042, China

^dState Key Laboratory of Marine Resource Utilization in South China Sea, Hainan University, Haikou 570228, China

The wood-PNIPAM composite hydrogel actuator fabricated through *in-situ* polymerization possess the characteristics of high mechanical strength, excellent programmable performance and fast response speed.

Chinese Chemical Letters 33 (2022) 2635



Synthesis of poly(silyl ether)s via copper-catalyzed dehydrocoupling polymerization

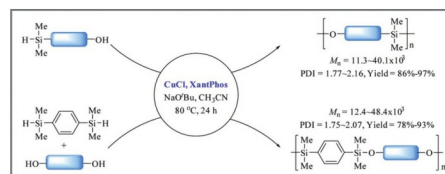
Xiaoqing Wang^{a,b}, Yuqing Bai^a, Xiaoyong Zhai^a, Bo Wu^a, Yonggui Zhou^a

^aDepartment of Fine Chemicals, State Key Laboratory of Catalysis, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian 116023, China

^bUniversity of Chinese Academy of Sciences, Beijing 100049, China

Using earth-abundant Cu/XantPhos as catalysts, the dehydrocoupling polymerization of either AB-type of silyl alcohol monomers or AABB-type of dihydrosilanes and aliphatic diols was developed, giving a series of poly(silyl ether)s with up to 48,400 of Mn and up to 97% yield.

Chinese Chemical Letters 33 (2022) 2639



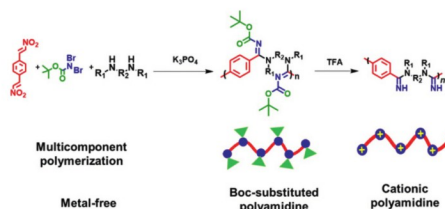
Metal-free multicomponent polymerization toward cationic polyamidines

Meng Du, Ming Li, Wangze Song, Nan Zheng

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

A metal-free multicomponent polymerization method was reported starting from *p*-dinitrovinylbenzene (*p*-DNVB), *N,N*-dibromocarbamate (BocNBr₂), and bis-secondary amines to access a library of Boc-substituted polyamidines. Cationic polyamidines were further obtained by removing Boc groups and their gene condensation abilities were evaluated.

Chinese Chemical Letters 33 (2022) 2643



Revisiting the anodic stability of nickel-cobalt hydroxide/carbon composite electrodes for rechargeable Ni-Zn battery

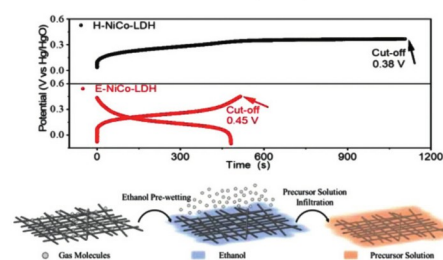
Qihang Liu^a, Xiaoli Zhao^a, Xiaowei Yang^{a,b}

^aSchool of Materials Science and Engineering, Interdisciplinary Materials Research Center, Tongji University, Shanghai 201804, China

^bSchool of Chemistry and Chemical Engineering, Frontiers Science Center for Transformative Molecules, Shanghai Jiao Tong University, Shanghai 200240, China

Herein reports a facile physical surface-treatment method for improving anodic stability of nickel-cobalt hydroxide/carbon composite electrodes for Ni-Zn batteries. By removing gas adsorption through ethanol wetting, the hydrophilicity of carbon substrates is promoted for a uniform and fine deposition of active materials. A favorable electrochemical performance of the composite electrodes is achieved.

Chinese Chemical Letters 33 (2022) 2648



Intrinsically zincophobic protective layer for dendrite-free zinc metal anode

Chunlin Xie^a, Qi Zhang^a, Zefang Yang^a, Huimin Ji^a, Yihu Li^a, Huanhuan Li^b, Liang Fu^c, Dan Huang^d, Yougen Tang^a, Haiyan Wang^{a,b}

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

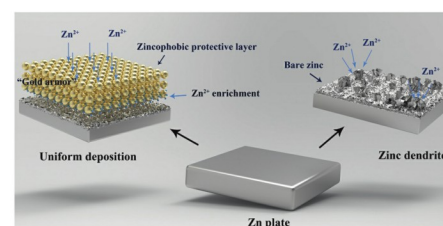
^bSchool of Chemistry and Chemical Engineering, Henan Normal University, Xinxiang 453007, China

^cCollege of Materials Science and Engineering, Chongqing University, Chongqing 400045, China

^dGuangxi Novel Battery Materials Research Center of Engineering Technology, School of Physical Science and Technology, Guangxi University, Nanning 530004, China

An intrinsically zincophobic protective layer with a porous structure was designed to suppress the zinc dendrite formation by homogenizing the ion distribution, increasing the nucleation sites, and limiting the irregular zinc growth.

Chinese Chemical Letters 33 (2022) 2653



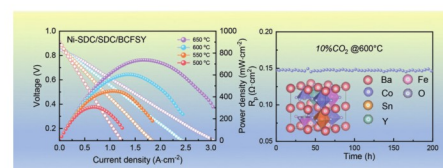
Sn and Y co-doped BaCo_{0.6}Fe_{0.4}O_{3-δ} cathodes with enhanced oxygen reduction activity and CO₂ tolerance for solid oxide fuel cells

Nan Han, Rongzheng Ren, Minjian Ma, Chunming Xu, Jinshuo Qiao, Wang Sun, Kening Sun, Zhenhua Wang

Beijing Key Laboratory for Chemical Power Source and Green Catalysis, School of Chemistry and Chemical Engineering, Beijing Institute of Technology, Beijing 100081, China

BaCo_{0.6}Fe_{0.2}Sn_{0.1}Y_{0.1}O_{3-δ} (BCFSY), heterovalent co-doping by Sn and Y, enhance the CO₂ tolerance and ORR catalytic activity, achieving an optimized balance of ionic mobility and oxygen vacancies due to the synergistic effect.

Chinese Chemical Letters 33 (2022) 2658



Pre-potassiated hydrated vanadium oxide as cathode for quasi-solid-state zinc-ion battery

Qifei Li^a, Xiangxiang Ye^a, Hong Yu^b, Chengfeng Du^b, Wenping Sun^{c,d}, Weiling Liu^e, Hongge Pan^{c,d}, Xianhong Rui^a

^aSchool of Materials and Energy, Guangdong University of Technology, Guangzhou 510006, China

^bCenter of Advanced Lubrication and Seal Materials, Northwestern Polytechnical University, Xi'an 710072, China

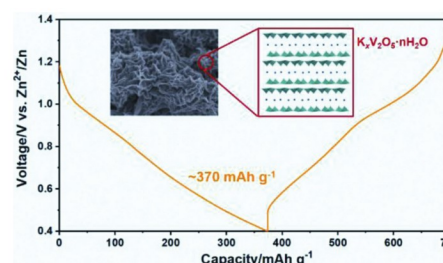
^cInstitute of Science and Technology for New Energy, Xi'an Technological University, Xi'an 710021, China

^dSchool of Materials Science and Engineering, State Key Laboratory of Silicon Materials, Zhejiang University, Hangzhou 310027, China

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

A cathode of pre-potassiated hydrated vanadium oxide (K_xV₂O₅·nH₂O) is developed, in which K⁺ acts as "pillar" to stabilize the crystal structure and crystal water acts as "lubricant" to improve the diffusion efficiency of Zn²⁺ ions. When used for quasi-solid-state zinc-ion batteries, K_xV₂O₅·nH₂O delivers a superior zinc storage performance in terms of high capacity (>300 mAh/g), acceptable rate property (69 mAh/g at 5 A/g) and ultralong cycling performance (>1500 cycles).

Chinese Chemical Letters 33 (2022) 2663



In-situ formed hierarchical transition metal oxide nanoarrays with rich antisite defects and oxygen vacancies for high-rate energy storage devices

Teng Wang^{a,b}, Bo Xu^c, You Wang^a, Jiaqi Lei^a, Wenjing Qin^c, Ke Gui^b, Chuying Ouyang^c, Kai-jie Chen^a, Hongxia Wang^b

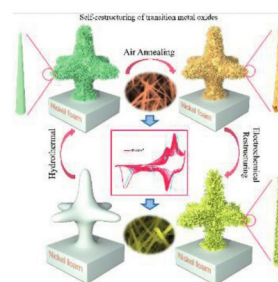
^aKey Laboratory of Special Functional and Smart Polymer Materials of Ministry of Industry and Information Technology, Xi'an Key Laboratory of Functional Organic Porous Materials, Department of Chemistry, School of Chemistry and Chemical Engineering, Northwestern Polytechnical University, Xi'an 710072, China

^bSchool of Chemistry and Physics, Faculty of Science, Queensland University of Technology, Brisbane, QLD 4001, Australia

^cDepartment of Physics, Laboratory of Computational Materials Physics, Jiangxi Normal University, Nanchang 330022, China

A facile electrochemical method is successfully employed to activate a series of battery-type multimetallic oxides nanoarrays, leading to dramatic micro-morphology change, rich antisite defects, and abundant oxygen vacancies in the final materials which achieve greatly enhanced electrochemical properties for hybrid supercapacitors.

Chinese Chemical Letters 33 (2022) 2669



Effect of nanocomposite as pour point depressant on the cold flow properties and crystallization behavior of diesel fuel

Yuan Xue^{a,c}, Fengfei Chen^{a,b}, Bin Sun^a, Hualin Lin^a, Bin Dai^b, Sheng Han^{a,b}

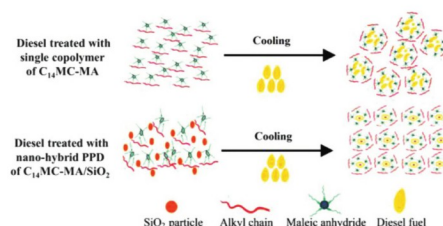
^aSchool of Chemical and Environmental Engineering, Shanghai Institute of Technology, Shanghai 201418, China

^bSchool of Chemistry and Chemical Engineering, Shihezi University, Shihezi 832003, China

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

In this paper, the nano-hybrid PPD was prepared by solvent-blending method using the *n*-alkyl methacrylate-maleic anhydride copolymers (R_1MC-MA , $R_1 = C_{14}, C_{16}, C_{18}$) and SiO_2 nanoparticles. The effect of those single copolymer PPDs and its nano-hybrids PPD of R_1MC-MA/SiO_2 on the cold filter plugging point (CFPP) and solidifying point (SP) of diesel fuel were comparatively studied. Nano-hybrid PPD showed much better performance on diesel fuel. Also, viscosity-temperature curves, polarized optical microscopy and differential scanning calorimetry were conducted to explore the performance mechanism.

Chinese Chemical Letters 33 (2022) 2677



High-energy aqueous supercapacitors enabled by N/O codoped carbon nanosheets and "water-in-salt" electrolyte

Jingjing Yan^b, Ling Miao^a, Hui Duan^a, Dazhang Zhu^a, Yaokang Lv^d, Liangchun Li^a, Lihua Gan^a, Mingxian Liu^{a,c}

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

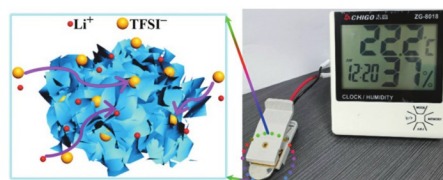
^bSchool of Chemical Engineering, Anhui University of Science and Technology, Huainan 232001, China

^cCollege of Chemistry and Molecular Engineering, Zhengzhou University, Zhengzhou 450001, China

^dCollege of Chemical Engineering, Zhejiang University of Technology, Hangzhou 310014, China

N/O codoped carbon nanosheets with open-ended porous architecture, cooperate with the concentrated LiTFSI "water-in-salt" electrolyte, gives high-energy aqueous supercapacitors.

Chinese Chemical Letters 33 (2022) 2681



Graphene aerogel supported Pt-Ni alloy as efficient electrocatalysts for alcohol fuel oxidation

Xiang Ding^{a,b}, Meng Li^b, Junling Jin^a, Xiaobing Huang^a, Xiang Wu^c, Ligang Feng^b

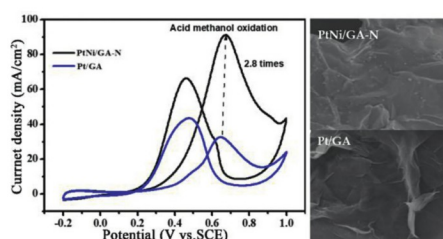
^aHunan Provincial Key Laboratory of Water Treatment Functional Materials, College of Chemistry and Material Engineering, Hunan University of Arts and Science, Changde 415000, China

^bSchool of Chemistry and Chemical Engineering, Yangzhou University, Yangzhou 225002, China

^cSchool of Materials Science and Engineering, Shenyang University of Technology, Shenyang 110870, China

3D N-doped graphene aerogel supported Pt-Ni alloy (PtNi/GA-N) exhibited high catalytic performance for the oxidation of alcohol fuel resulting from the combined multi-advantages of oxophilic Ni species and the support effect of 3D N-doped graphene aerogel.

Chinese Chemical Letters 33 (2022) 2687



Ultrasensitive determination of mercury by ICP-OES coupled with a vapor generation approach based on solution cathode glow discharge

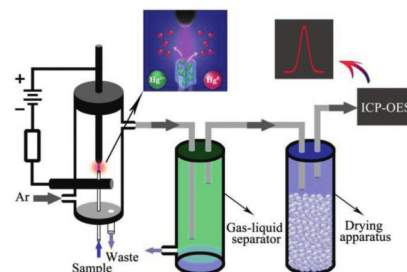
Zhaoqing Cai^{a,b}, Huijun Zou^a, Yirui Chen^a, Zheng Wang^{a,b}

^a Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai 200050, China

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

A method based on ICP-OES coupled with a portable SCGD-induced vapor generator for ultrasensitive determination of Hg was developed, with good stability and matrix resistance. The detection limit (DL) for Hg obtained by ICP-OES was improved by 82-fold.

Chinese Chemical Letters 33 (2022) 2692



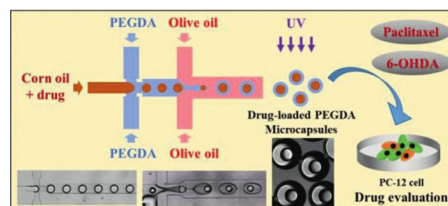
Facile fabrication of drug-loaded PEGDA microcapsules for drug evaluation using droplet-based microchip

Xindi Sun, Qirui Wu, Wei Li, Xiuqing Gong, Jun-Yi Ge, Jinbo Wu, Xinghua Gao

Materials Genome Institute, Shanghai University, Shanghai 200444, China

A droplet-based microfluidic chip with surface modification, which allowed the one-step preparation of double emulsion microcapsules. An O/W/O double emulsion using PEGDA solution as the intermediate water phase was prepared by regulating the hydrophilicity and hydrophobicity of the chip surface, with PEGDA microcapsules prepared using UV polymerization. We have also probed the application of drug-loaded PEGDA microcapsules in drug and toxicological evaluation.

Chinese Chemical Letters 33 (2022) 2697



Single-cell level point mutation analysis of circulating tumor cells through droplet microfluidics

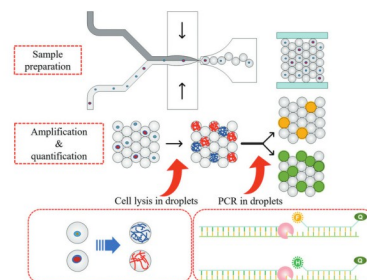
Shihui Qiu^{a,b}, Chuanjie Shen^{a,b}, Xiaoyu Jian^a, Yunxing Lu^{a,b}, Zhaoduo Tong^{a,b}, Zhenhua Wu^a, Hongju Mao^{a,b}, Jianlong Zhao^{a,b}

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

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

We developed an integrated platform for single-cell genomic detection, based on droplet microfluidic technique. This platform requires only one manual operation step, and the subsequent quantification of mutant cells will be completed automatically. The results showed this platform has a high sensitivity for discriminating mutant cells from normal ones.

Chinese Chemical Letters 33 (2022) 2701



In-situ monitoring of cell-secreted lactate by electrochemiluminescence sensing under biomimetic microfluidic confinement

Yixin Liu^a, Yuanyuan Yao^c, Beibei Yang^d, Yan-Jun Liu^b, Baohong Liu^a

^a Department of Chemistry, Shanghai Stomatological Hospital, and State Key Lab of Molecular Engineering of Polymers, Fudan University, Shanghai 200433, China

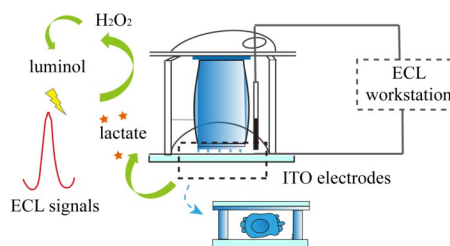
^b Shanghai Key Laboratory of Medical Epigenetics, International Co-laboratory of Medical Epigenetics and Metabolism (Ministry of Science and Technology), Institutes of Biomedical Sciences, Fudan University, Shanghai 200032, China

^c College of Biological, Chemical Sciences and Engineering, Jiaxing University, Jiaxing 314001, China

^d Department of Chemistry and Chemical Engineering, Nantong University, Nantong 226000, China

An electrochemiluminescence (ECL) sensing platform was employed for *in-situ* monitoring of cell-secreted lactate in a biomimetic microfluidic confinement. Metabolic differences of lactate in confined microenvironments were successfully monitored in different time intervals.

Chinese Chemical Letters 33 (2022) 2705



Applications of ambient electric arc ionization mass spectrometry in saline samples

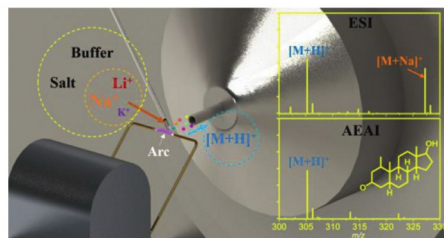
Yuan Li^a, Yuanji Gao^{a,b}, Binpeng Zhan^a, Weiwei Chen^a, Fengjian Chu^a, Hongru Feng^a, Zhan Gao^a, Zihan Ma^a, Yuanjiang Pan^a

^aDepartment of Chemistry, Zhejiang University, Hangzhou 310027, China

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

Salinity tolerance of ambient electric arc ionization (AEAI) was evaluated by comparing electrospray ionization for various samples at NaCl concentrations from 0 to 1000 mmol/L.

Chinese Chemical Letters 33 (2022) 2708



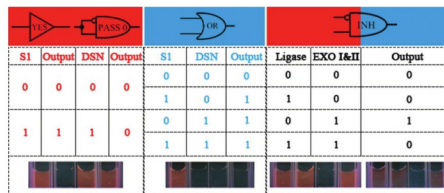
Facile and diverse logic circuits based on dumbbell DNA-templated fluorescent copper nanoclusters and S1 nuclease detection

Zefeng Gu, Anchen Fu, Ru Qiu, Ru Sun, Zhijuan Cao

Shanghai Key Laboratory of Bioactive Small Molecules & Department of Pharmaceutical Analysis, School of Pharmacy, Fudan University, Shanghai 201203, China

A series of logic gates ("YES", "PASS 0", "OR" and "INHIBIT") are constructed by using dumbbell DNA templated fluorescent CuNCs as the functional component (output), and multiple nucleic acid enzymes as inputs. It takes the advantages of no label, easy operation, fast speed, high efficiency and low cost.

Chinese Chemical Letters 33 (2022) 2711



Hybrid supraparticles of carbon dots/porphyrin for multifunctional tongue-mimic sensors

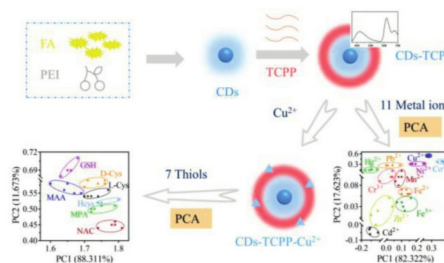
Rong Hu^a, Xingchun Zhai^a, Yubin Ding^b, Guoyue Shi^a, Min Zhang^a

^aSchool of Chemistry and Molecular Engineering, Shanghai Key Laboratory for Urban Ecological Processes and Eco-Restoration, Shanghai Key Laboratory of Multidimensional Information Processing, Engineering Research Centre for Nanophotonics and Advanced Instrument (Ministry of Education), East China Normal University, Shanghai 200241, China

^bDepartment of Chemistry, College of Sciences, Nanjing Agricultural University, Nanjing 210095, China

Herein, we construct novel single-SPs fluorescence sensing platforms based on CDs/TCPP SPs to versatilely recognize various heavy metal ions and thiols.

Chinese Chemical Letters 33 (2022) 2715



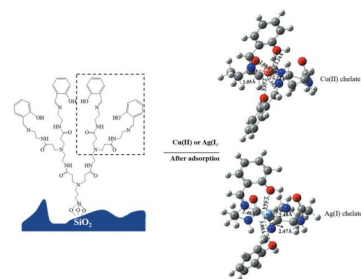
Adsorption of aqueous Cu(II) and Ag(I) by silica anchored Schiff base decorated polyamidoamine dendrimers: Behavior and mechanism

Kaiyan Wu, Bingxiang Wang, Bentian Tang, Liping Luan, Wenlong Xu, Beibei Zhang, Yuzhong Niu

School of Chemistry and Materials Science, Ludong University, Yantai 264025, China

Schiff base functionalized PAMAM dendrimer/silica were synthesized and employed for the removal of aqueous Cu(II) and Ag(I). The adsorption performance and mechanism were revealed based on experiment and DFT calculation.

Chinese Chemical Letters 33 (2022) 2721



Synergistic catalytic ozonation of toluene with manganese and cerium varies at low temperature

Qi Gan^a, Mingli Fu^{a,b,c,d}, Peng Liu^a, Yuchen Zhang^a, Juxia Xiong^a, Jinping Zhong^a, Lei Liu^a, Junliang Wu^{a,b,c,d}, Xiaojun Niu^a, Yun Hu^a, Daiqi Ye^{a,b,c,d}

^aSchool of Environment and Energy, South China University of Technology, Guangzhou 510006, China

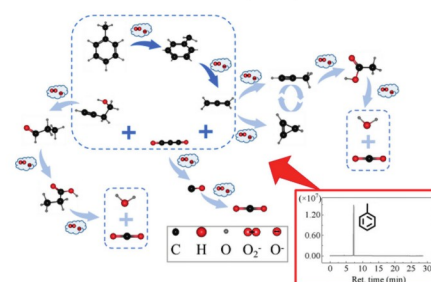
^bNational Engineering Laboratory for VOCs Pollution Control Technology and Equipment (SCUT), Guangzhou 510006, China

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^dGuangdong Provincial Engineering and Technology Research Center for Environmental Risk Prevention and Emergency Disposal (SCUT), Guangzhou 510006, China

The catalytic ozonation of toluene was carried out in the range of low temperature and dynamic conditions. The main intermediates of toluene were varied under the synergistic effects of Mn and Ce, ozone and catalyst.

Chinese Chemical Letters 33 (2022) 2726



Contribution of redox-active properties of compost-derived humic substances in hematite bioreduction

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^cSchool of Environmental Science and Engineering, Tianjin University, Tianjin 300350, China

^dCollege of Chemical and Biological Engineering, Zhejiang University, Hangzhou 310027, China

^eHigh-Tech Institute of Beijing, Beijing 710025, China

The microbial reducing capacities of compost-derived HSs are investigated, and they are employed in the process of hematite bioreduction. Compost-derived HSs can accept electrons from microorganism respiration. The reduced compost-derived HS can donate electrons to dissolved Fe(III) or hematite. The aromatic- and heteroatom-structures are the main redox-active groups. Compost-derived HSs are considered as electron mediators to further promote hematite bioreduction.

Chinese Chemical Letters 33 (2022) 2731



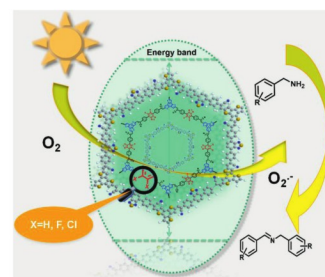
Halogenated benzothiadiazole-based conjugated polymers as efficient photocatalysts for dye degradation and oxidative coupling of benzylamines

Chu Chu, Yuancheng Qin, Cailing Ni, Jianping Zou

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

A series of XBD-BTTs (X = H, F, Cl) are systematically investigated as efficient photocatalysts for dye degradation and oxidative coupling of benzylamines under visible light irradiation. The polymers were effective photocatalysts for the degradation of RhB and MO dyes, as well as promoting the oxidative coupling of benzylamines.

Chinese Chemical Letters 33 (2022) 2736



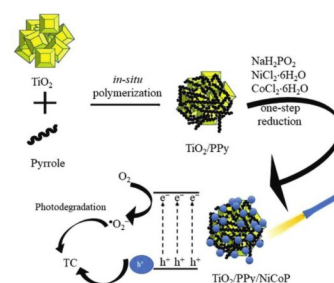
Fabrication of NiCoP decorated TiO₂/polypyrrole nanocomposites for the effective photocatalytic degradation of tetracycline

Yalu Wu, Yinyin Xu, Yan Zhang, Jingbo Feng, Yuanyuan Li, Jiaying Lan, Xiuwen Cheng

Key Laboratory for Environmental Pollution Prediction and Control, College of Earth and Environmental Sciences, Lanzhou University, Lanzhou 730000, China

The NiCoP decorated TiO₂/polypyrrole (named as TiO₂/PPy/NiCoP) with high photocatalytic activity were synthesized. The synthesized TiO₂/PPy/NiCoP possessed high photodegradation activity for tetracycline (TC). The results of culture of pea illustrated that the photodegradation products of TC with TiO₂/PPy/NiCoP were friendly to the environment.

Chinese Chemical Letters 33 (2022) 2741



Ordered mesoporous carbon as an efficient heterogeneous catalyst to activate peroxydisulfate for degradation of sulfadiazine

Zhi-Ling Li^a, Di Cao^a, Hao Cheng^a, Fan Chen^{a,c}, Jun Nan^a, Bin Liang^b, Kai Sun^d, Cong Huang^e, Ai-Jie Wang^{a,b}

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^b School of Civil & Environmental Engineering, Harbin Institute of Technology (Shenzhen), Shenzhen 518055, China

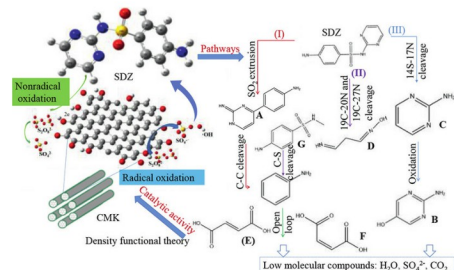
^c School of Ecology and Environment, Northwestern Polytechnical University, Xi'an 710129, China

^d Key Lab of Structures Dynamic Behavior and Control of China Ministry of Education, School of Civil Engineering, Harbin Institute of Technology, Harbin 150090, China

^e National Technology Innovation Center of Synthetic Biology, Tianjin Institute of Industrial Biotechnology, Chinese Academy of Sciences, Tianjin 300308, China

Efficient degradation of antibiotics in peroxydisulfate (PDS) advanced oxidation systems catalyzed by ordered mesoporous carbon (type CMK) were confirmed with optimized sulfadiazine concentration, dosage of CMK and PDS. CMK catalytic mechanism and SDZ degradation mechanism were analyzed via various free radical quenching properties, density functional theory and UPLC-MS/MS analysis.

Chinese Chemical Letters 33 (2022) 2747



High impact of vehicle and solvent emission on the ambient volatile organic compounds in a major city of northwest China

Yonggang Xue^{a,b,c}, Liqin Wang^{a,b,c}, Suixin Liu^{a,b,c}, Yu Huang^{a,b,c}, Long Chen^{a,b,c}, Long Cui^{a,b,c}, Yan Cheng^d, Junji Cao^{a,b,c}

^a State Key Lab of Loess and Quaternary Geology (SKLLQG), Institute of Earth Environment, Chinese Academy of Sciences (CAS), Xi'an 710061, China

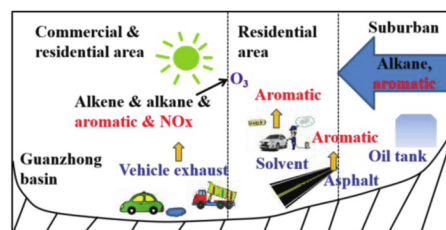
^b CAS Center for Excellence in Quaternary Science and Global Change, Xi'an 710061, China

^c Guanzhong Plain Ecological Environment Change and Comprehensive Treatment National Observation and Research Station, Xi'an 710061, China

^d School of Human Settlements and Civil Engineering, Xi'an Jiaotong University, Xi'an 710049, China

Characteristic of the ambient VOCs was highly impacted by vehicle exhaust, fuel evaporation, and local solvent use. Relative higher contributions (up to 60%) of VOCs from solvent use to the ozone formation potential were found.

Chinese Chemical Letters 33 (2022) 2753

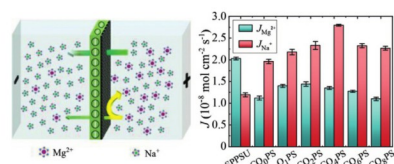


Optimizing functional layer of cation exchange membrane by three-dimensional cross-linking quaternization for enhancing monovalent selectivity

Jiefeng Pan, Lei Zhao, Xiaohong Yu, Jiajing Dong, Lingling Liu, Xueting Zhao, Lifen Liu
College of Chemical Engineering, Zhejiang University of Technology, Hangzhou 310014, China

A series of MCPMs with three-dimensional cross-linked quaternized layer were successfully applied to separation of mixed salt system (Mg^{2+}/Na^+). The optimal CQ_4PS membrane had a considerable perm-selectivity and Na^+ flux.

Chinese Chemical Letters 33 (2022) 2757



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