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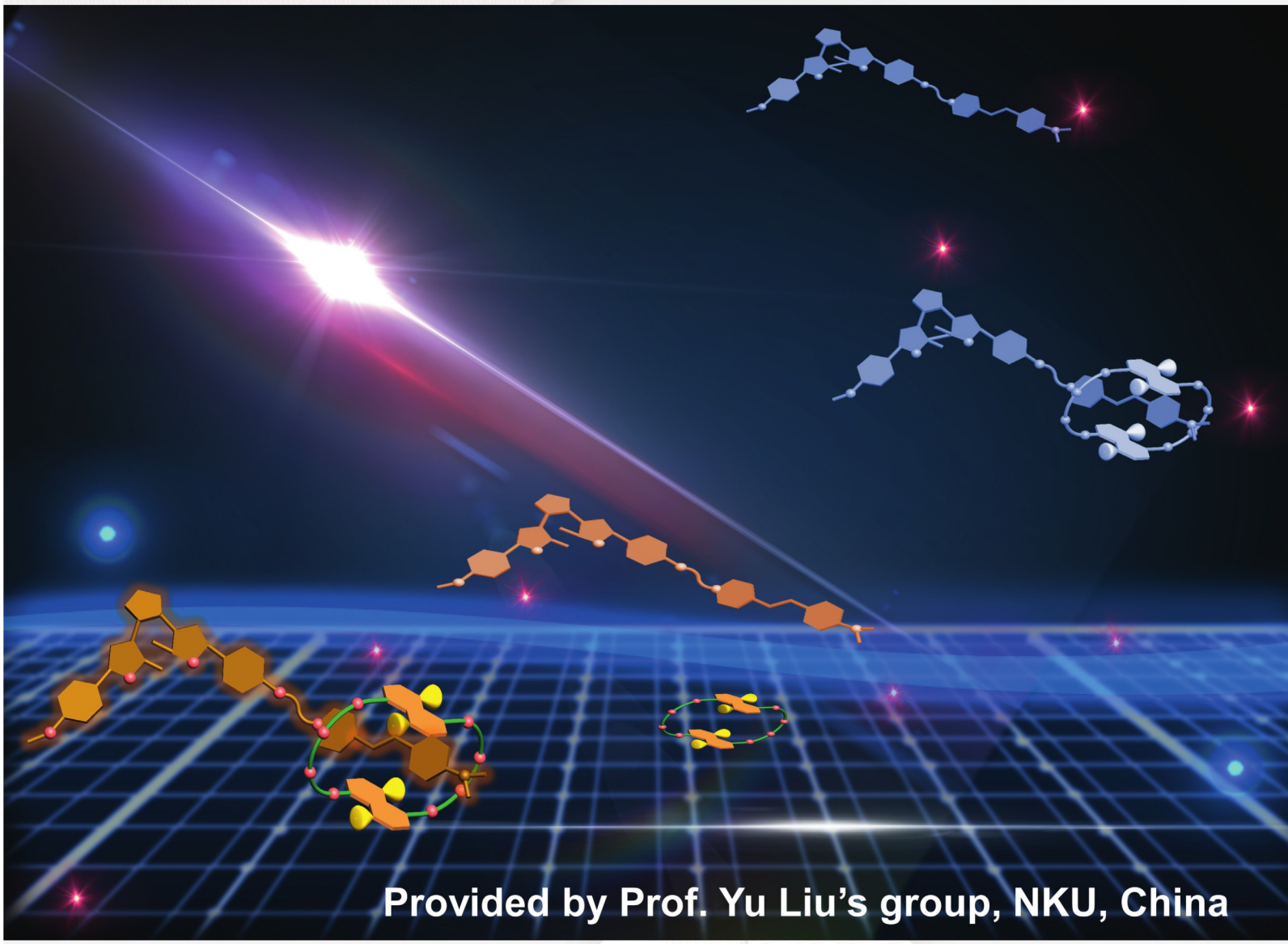

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Reviews

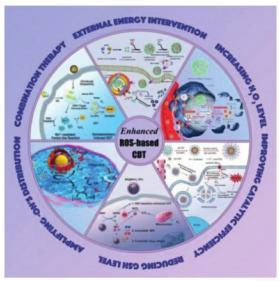
Recent advances in enhancing reactive oxygen species based chemodynamic therapy

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



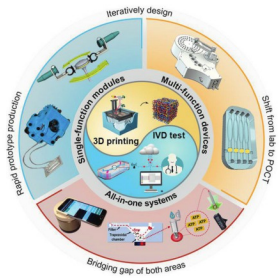
An integrative review on the applications of 3D printing in the field of *in vitro* diagnostics

Jian 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]

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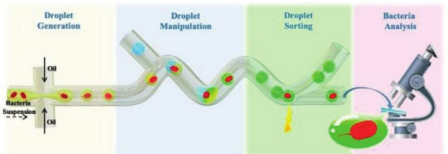
[b] *The First Affiliated Hospital of Xi'an Jiaotong University, Xi'an 710061, China*
[c] *State Key Laboratory of Military Stomatology & National Clinical Research Center for Oral Diseases and Shaanxi Clinical Research Center for Oral Diseases, Department of Oral and Maxillofacial Surgery, School of 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



doi:10.1016/j.cclet.2021.08.096

Emerging 2D pnictogens for biomedical applications

Chinese Chemical Letters 33 (2022) 2345

Ruoyao Li [a], Zhengbao Zha [a], Zhaohua Miao [a], Cheng-Yan Xu [b,c]

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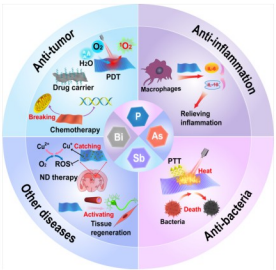
[b] Sauvage Laboratory for Smart Materials, School of Materials Science and Engineering, Harbin Institute of Technology (Shenzhen), Shenzhen 518055, China
[c] Shenzhen Bay Laboratory, Shenzhen 518132, China

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.



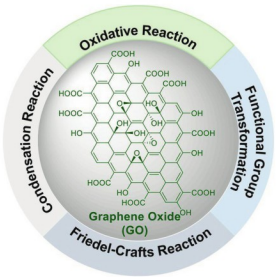
Recent advances in graphene oxide catalyzed organic transformations

Chinese Chemical Letters 33 (2022) 2354

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.



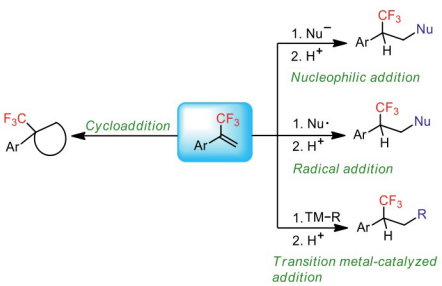
Advances in cycloaddition and hydroaddition reaction of α-(trifluoromethyl)styrenes without defluorination: An alternative approach to CF_3-containing compounds

Chinese Chemical Letters 33 (2022) 2363

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.



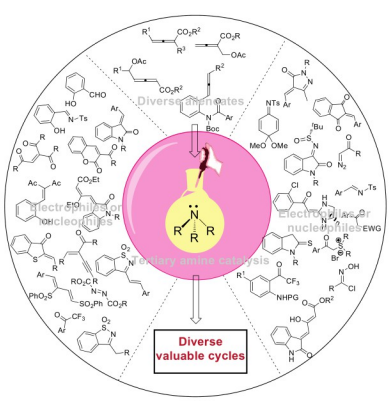
Recent advances in tertiary amine Lewis base-promoted cycloadditions of allenoates

Chinese Chemical Letters 33 (2022) 2372

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 allenoates with a wide range of electrophile/nucleophiles to give diverse annulations.



Communications

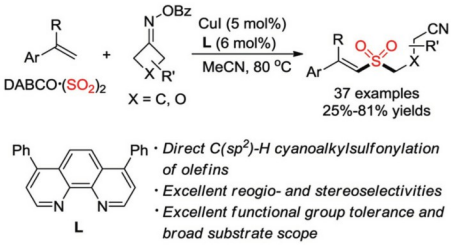
A copper-catalyzed three-component reaction of alkenes, cycloketone oximes and DABCO·$(SO_2)_2$: Direct C(sp^2)-H cyanoalkylsulfonylation

Yating Liu [a], Luoyu Wang [a], Ling-Hui Zeng [b], Yun Zhao [a], Tonghao Zhu [a], Jie Wu [a,c,d]

[a] School of Pharmaceutical and Chemical Engineering & Institute for Advanced Studies, Taizhou University, Taizhou 318000, China
[b] Department of Pharmacology, Zhejiang University City College, Hangzhou 310015, China
[c] State Key Laboratory of Organometallic Chemistry, Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, Shanghai 200032, China
[d] School of Chemistry and Chemical Engineering, Henan Normal University, Xinxiang 453007, China

A copper-catalyzed three-component reaction of alkenes, cycloketone oximes and DABCO·$(SO_2)_2$ 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



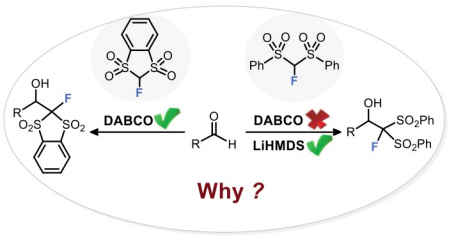
Computational insights into the effects of reagent structure and bases on nucleophilic monofluoromethylation of aldehydes

Meng-Meng Zheng [a], Hao-Dong Tan [a], Yueqian Sang [b], Xiao-Song Xue [a,b], Jin-Pei Cheng [a,c]

[a] State Key Laboratory of Elemento-Organic Chemistry, College of Chemistry, Nankai University, Tianjin 300071, China
[b] Key Laboratory of Organofluorine Chemistry, Shanghai Institute of Organic Chemistry, University of Chinese Academy of Sciences, Chinese Academy of Sciences, Shanghai 200032, China
[c] Center 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



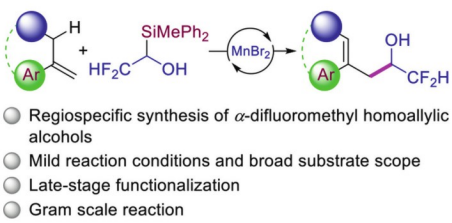
$MnBr_2$ catalyzed regiospecific oxidative Mizoroki-Heck type reaction

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 regiospecific 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



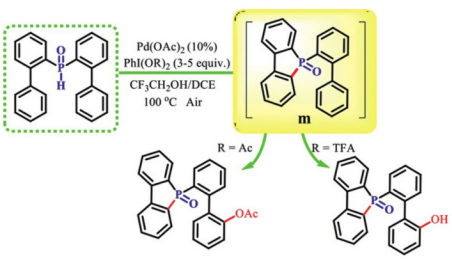
Palladium-catalyzed relay C–H functionalization to construct novel hybrid-arylcyclophosphorus ligand precursors

Juan Wang [a], Peng-Bo Bai [a], Shang-Dong Yang [a,b]

[a] State Key Laboratory of Applied Organic Chemistry, Lanzhou University, Lanzhou 730000, China
[b] State 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-arylcyclophosphorus ligand precursors with different hypervalent iodines as oxidants under palladium catalysis were performed.

Chinese Chemical Letters 33 (2022) 2397



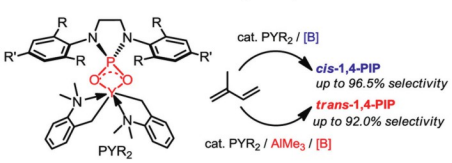
Well-defined phosphate yttrium dialkyl complexes for catalytic stereo-controllable 1,4-polymerization of isoprene

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]

[a] College of Chemistry, Nankai University, Tianjin 300071, China
[b] Department 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



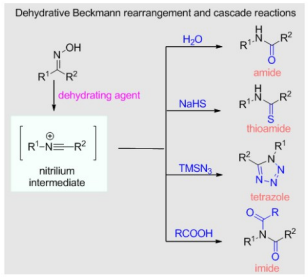
Dehydrative Beckmann rearrangement and the following cascade reactions

Chinese Chemical Letters 33 (2022) 2407

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.



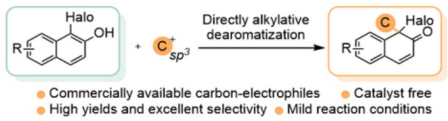
Transition metal-free dearomatization of halonaphthols with C(sp^3)-electrophiles

Chinese Chemical Letters 33 (2022) 2411

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.



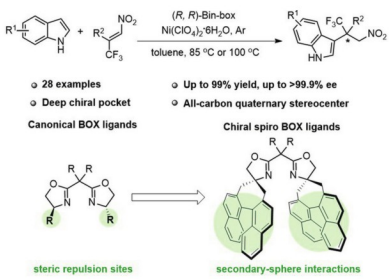
Highly enantioselective construction of CF_3-bearing all-carbon quaternary stereocenters: Chiral spiro-fused bisoxazoline ligands with 1,1′-binaphthyl sidearm for asymmetric Michael-type Friedel-Crafts reaction

Chinese Chemical Letters 33 (2022) 2415

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*).



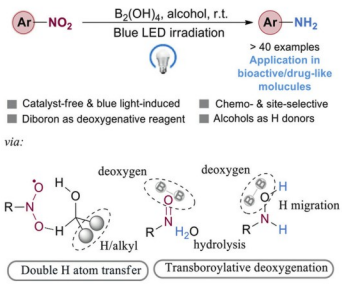
Chemo-, site-selective reduction of nitroarenes under blue-light, catalyst-free conditions

Chinese Chemical Letters 33 (2022) 2420

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.



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

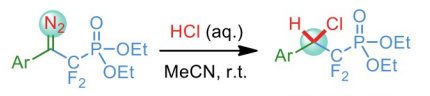
Facile synthesis of (β-chlorodifluoroethyl)phosphonates *via* chlorination reaction of difluoroalkyl diazo derivatives with HCl

Jiang Liu [a], Romana Pajkert [b], Li Wang [a], Haibo Mei [a], Gerd-Volker Röschenthaler [b], Jianlin Han [a]

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



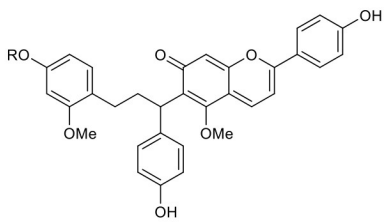
Total synthesis and biological evaluation of dracaenins A and B

Yaqiu Zhao [a,c], Shunli Xiao [c], Yun You [c], Zhi Zhang [b], Liansuo Zu [b], Luqi Huang [c]

[a] *College of Pharmacy, Nanjing University of Chinese Medicine, Nanjing 210023, China*
[b] *School of Pharmaceutical Sciences, Tsinghua University, Beijing 100084, China*
[c] *State 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



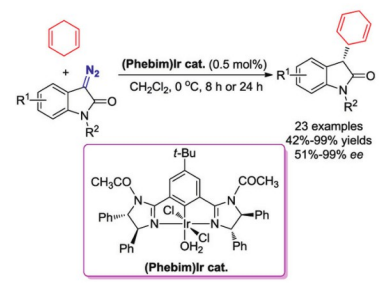
Pincer iridium(III)-catalyzed enantioselective C(sp^3)-H functionalization *via* carbenoid C–H insertion of 3-diazooxindoles with 1,4-cyclohexadiene

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



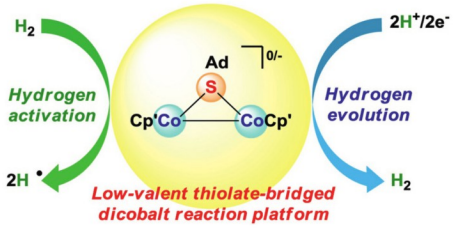
Construction of a low-valent thiolate-bridged dicobalt platform and its reactivity toward hydrogen activation and evolution

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 facilely realize homolytic H_2 activation, but also drive stepwise H_2 evolution.

Chinese Chemical Letters 33 (2022) 2477



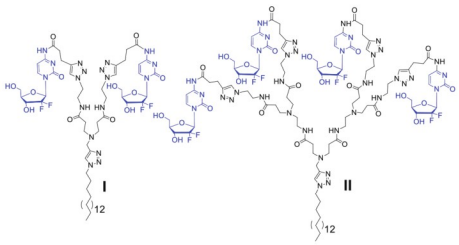
A self-assembling prodrug nanosystem to enhance metabolic stability and anticancer activity of gemcitabine

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 [f,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



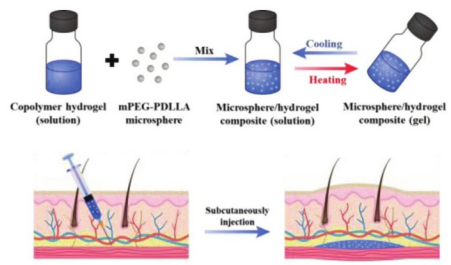
An injectable mPEG-PDLLA microsphere/PDLLA-PEG-PDLLA hydrogel composite for soft tissue augmentation

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



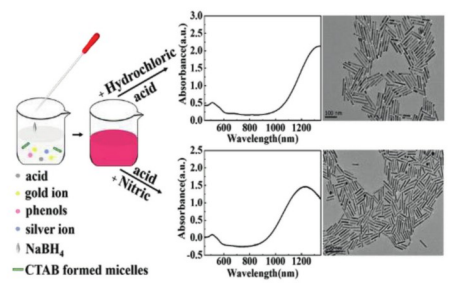
Seedless synthesis of gold nanorods with tunable plasmonic peaks beyond 1300 nm

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



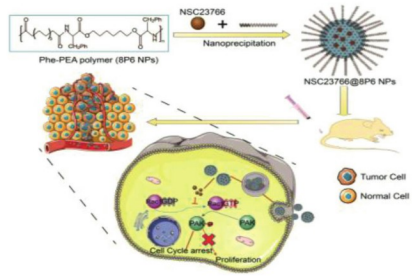
Targeting the Rac1 pathway for improved prostate cancer therapy using polymeric nanoparticles to deliver of NSC23766

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



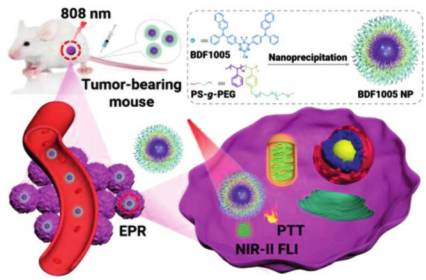
Boron difluoride formazanate dye for high-efficiency NIR-II fluorescence imaging-guided cancer photothermal therapy

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



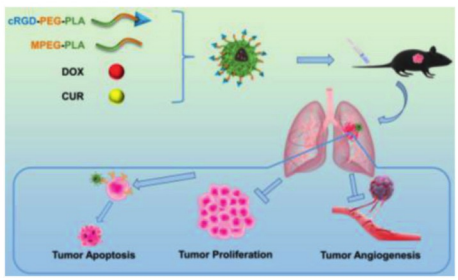
Co-delivery of doxorubicin and curcumin *via* cRGD-peptide modified PEG-PLA self-assembly nanomicelles for lung cancer therapy

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

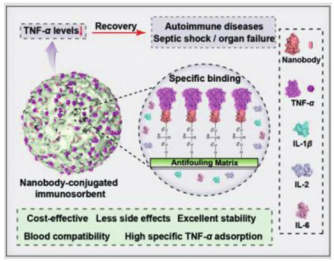


Nanobody-based polyvinyl alcohol beads as antifouling adsorbents for selective removal of tumor necrosis factor-α

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

[a] *The key Laboratory of Bioactive Materials, Ministry of Education, College of Life Sciences, Nankai University, Tianjin 300071, China*
[b] *State Key Laboratory of Medicinal Chemical Biology, Tianjin Key Laboratory of Protein Sciences, College of Life Sciences, Nankai University, Tianjin 300071, China*

Chinese Chemical Letters 33 (2022) 2512



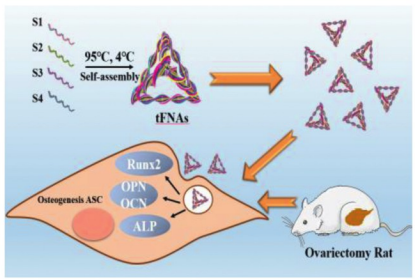
Nanobody-coupled antifouling polyvinyl alcohol beads as immunosorbents for selective removal of TNF-α from blood. The system has high target-binding capacity, good biocompatibility, and outstanding stability.

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]

[a] *State Key Laboratory of Oral Diseases, National Clinical Research Center for Oral Diseases, West China Hospital of Stomatology, Sichuan University, Chengdu 610041, China*
[b] *Department of Stomatology, First Medical Center of Chinese PLA General Hospital, Beijing 100853, China*

Chinese Chemical Letters 33 (2022) 2517



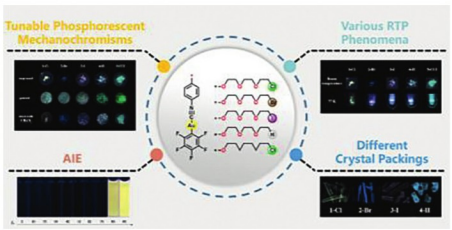
In this study, the nucleic acid nanomaterial tFNAs was used to improve the proliferation and osteogenic differentiation of osteoporotic adipose-derived stem cells, and made a certain contribution to the treatment of osteoporosis.

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]

[a] *Key Laboratory of Pesticide and Chemical Biology, Ministry of Education, College of Chemistry, Central China Normal University, Wuhan 430079, China*
[b] *Jiangxi Key Laboratory of Organic Chemistry, Jiangxi Science and Technology Normal University, Nanchang 330013, China*
[c] *State Key Laboratory of Structural Chemistry, Fujian Institute of Research on the Structure of Matter, Chinese Academy of Sciences, Fuzhou 350002, China*

Chinese Chemical Letters 33 (2022) 2522



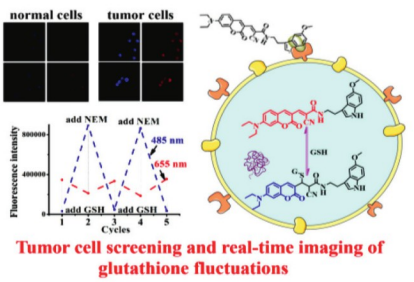
Five gold(I) complexes exhibit various solid-state room-temperature phosphorescence (RTP) phenomena and contrasting phosphorescent mechanochromism characteristics.

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]

[a] *School of Water Conservancy and Environment, University of Jinan, Ji'nan 250022, China*
[b] *Biology Institute, Qilu University of Technology (Shandong Academy of Sciences), Ji'nan 250103, China*

Chinese Chemical Letters 33 (2022) 2527



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.

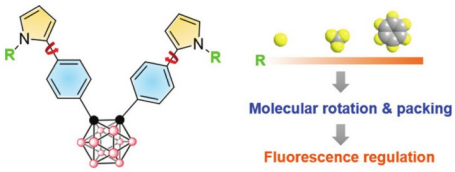
Structure-fluorescence relationships in pyrrole appended *o*-carborane crystalline materials

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



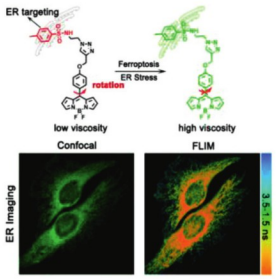
Forthrightly monitoring ferroptosis induced by endoplasmic reticulum stresses through fluorescence lifetime imaging of microviscosity increases with a specific rotor

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



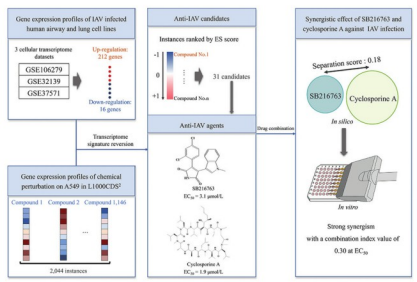
Discovery of the anti-influenza A virus activity of SB216763 and cyclosporine A by mining infected cells and compound cellular signatures

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



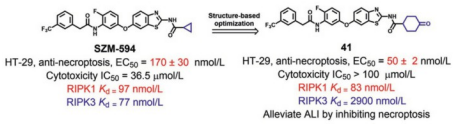
Structure-based optimizations of a necroptosis inhibitor (SZM594) as novel protective agents of acute lung injury

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

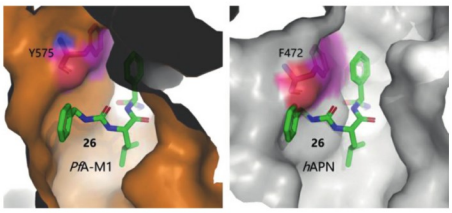


Development of peptidomimetic hydroxamates as *Pf*A-M1 and *Pf*A-M17 dual inhibitors: Biological evaluation and structural characterization by cocrystallization

Anil Kumar Marapaka [a,b,c], Priyanka Sankoju [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*

Chinese Chemical Letters 33 (2022) 2550



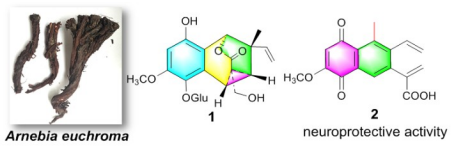
Compound **26** is a *Pf*A-M1 and *Pf*A-M17 dual inhibitor with significant selectivity over mammalian aminopeptidase.

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

Chinese Chemical Letters 33 (2022) 2555



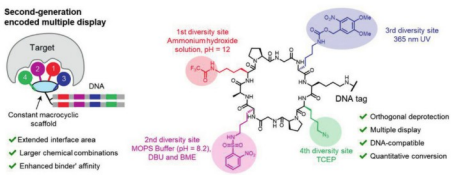
Arnequinol A (**1**), featuring an unprecedented 6/6/3 tricyclic carbon skeleton fused with a heptatomic oxo-bridge, together with arnequinone A (**2**) bearing a highly conjugated methyl-shifting benzogeijerene skeleton, were isolated from *Arnebia euchroma*. Compound **2** showed potent neuroprotective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

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*

Chinese Chemical Letters 33 (2022) 2559



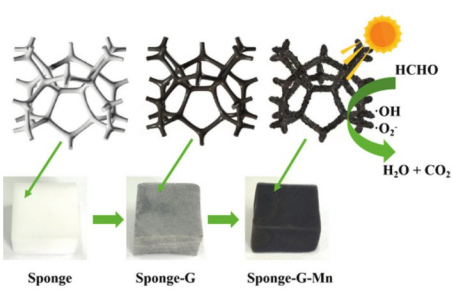
We presented here an orthogonal diversification approach for producing the second-generation DNA-encoded multiple display on a constant macrocyclic scaffold.

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

Chinese Chemical Letters 33 (2022) 2564



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.

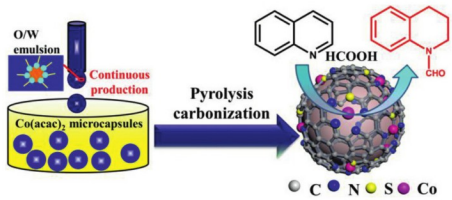
Quasi-continuous synthesis of cobalt single atom catalysts for transfer hydrogenation of quinoline

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



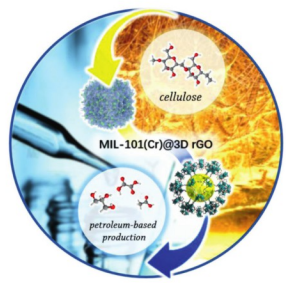
A 3D MIL-101@rGO composite as catalyst for efficient conversion of straw cellulose into valuable organic acid

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



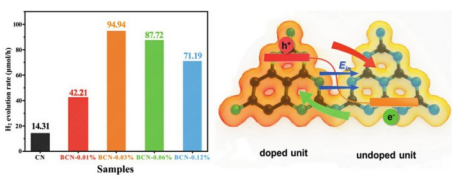
Constructing a coplanar heterojunction through enhanced π-π conjugation in g-C_3N_4 for efficient solar-driven water splitting

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-C_3N_4 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



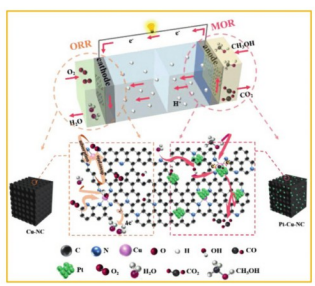
Single-Cu-atoms anchored on 3D macro-porous carbon matrix as efficient catalyst for oxygen reduction and Pt co-catalyst for methanol oxidation

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



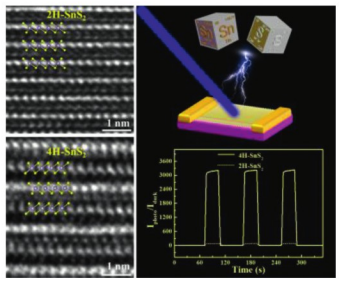
Single- and few-layer 2H-SnS_2 and 4H-SnS_2 nanosheets for high-performance photodetection

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

SnS_2 nanosheets have phase-dependent electrical properties. The 4H-SnS_2 nanosheet shows a current on/off ratio of 2.58 × 10^5 and photosensitivity (I_{photo}/I_{dark}) of 3165, which are much higher than those of the 2H-SnS_2 nanosheet (79 and 87).

Chinese Chemical Letters 33 (2022) 2611



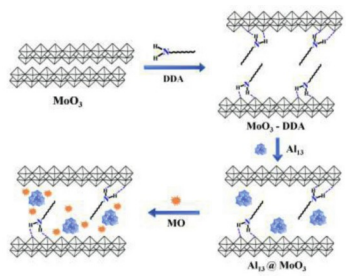
Keggin-type polycationic $AlO_4Al_{12}(OH)_{24}(H_2O)_{12}^{7+}$ intercalated MoO_3 composites for methyl orange adsorption

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

[a] *Key Laboratory of Polyoxometalate and Reticular Material Chemistry of the Ministry of Education, College of Chemistry, Northeast Normal University, Changchun 130024, China*
[b] *Department of Chemistry and Shenzhen Grubbs Institute, Southern University of Science and Technology, Shenzhen 518055, China*

A series of Al_{13}@MoO_3 composites are successfully prepared by inserting $AlO_4Al_{12}(OH)_{24}(H_2O)_{12}^{7+}$ (Al_{13}) with numerous positive charges into MoO_3 layers area, which can be applied to rapidly adsorb the anionic dye methyl orange (MO).

Chinese Chemical Letters 33 (2022) 2617



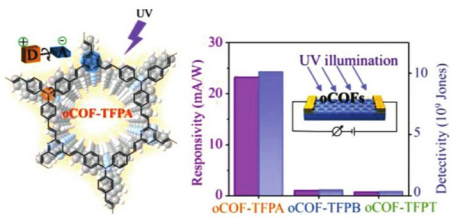
Olefin-linked covalent organic frameworks with twisted tertiary amine knots for enhanced ultraviolet detection

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]

[a] *State Key Laboratory of Molecular Engineering of Polymers, Department of Macromolecular Science, Fudan University, Shanghai 200433, China*
[b] *Institute of Molecular Materials and Devices, Fudan University, Shanghai 200433, China*
[c] *MIIT 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



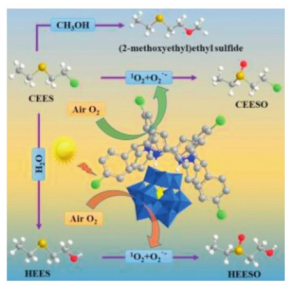
Preparation of a porphyrin-polyoxometalate hybrid and its photocatalytic degradation performance for mustard gas simulant 2-chloroethyl ethyl sulfide

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

[a] *State Key Laboratory of Chemical Resource Engineering, Institute of Chemistry, Beijing University of Chemical Technology, Beijing 100029, China*
[b] *Toxicology 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 $H_5PV_2Mo_{10}O_{40}$ 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



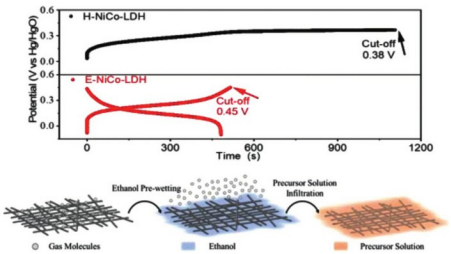
Revisiting the anodic stability of nickel-cobalt hydroxide/carbon composite electrodes for rechargeable Ni-Zn battery

Qihang Liu [a], Xiaoli Zhao [a], Xiaowei Yang [a,b]

[a] *School of Materials Science and Engineering, Interdisciplinary Materials Research Center, Tongji University, Shanghai 201804, China*
[b] *School 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



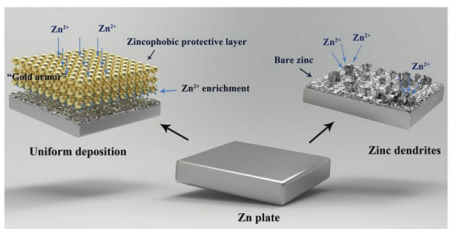
Intrinsically zincophobic protective layer for dendrite-free zinc metal anode

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]

[a] *Hunan Provincial Key Laboratory of Chemical Power Sources, College of Chemistry and Chemical Engineering, Central South University, Changsha 410083, China*
[b] *School of Chemistry and Chemical Engineering, Henan Normal University, Xinxiang 453007, China*
[c] *College of Materials Science and Engineering, Chongqing University, Chongqing 400045, China*
[d] *Guangxi 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



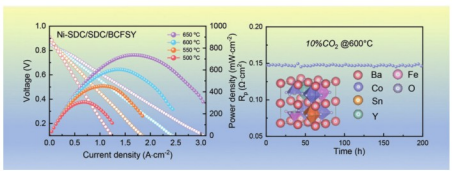
Sn and Y co-doped $BaCo_{0.6}Fe_{0.4}O_{3-\delta}$ cathodes with enhanced oxygen reduction activity and CO_2 tolerance for solid oxide fuel cells

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

$BaCo_{0.6}Fe_{0.2}Sn_{0.1}Y_{0.1}O_{3-\delta}$ (BCFSY), heterovalent co-doping by Sn and Y, enhance the CO_2 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



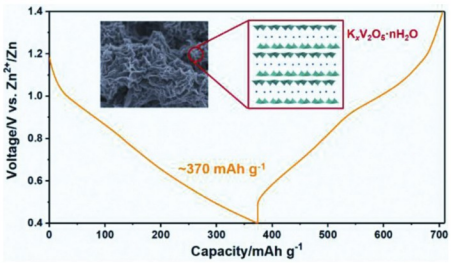
Pre-potassiated hydrated vanadium oxide as cathode for *quasi*-solid-state zinc-ion battery

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]

[a] *School of Materials and Energy, Guangdong University of Technology, Guangzhou 510006, China*
[b] *Center of Advanced Lubrication and Seal Materials, Northwestern Polytechnical University, Xi'an 710072, China*
[c] *Institute of Science and Technology for New Energy, Xi'an Technological University, Xi'an 710021, China*
[d] *School of Materials Science and Engineering, State Key Laboratory of Silicon Materials, Zhejiang University, Hangzhou 310027, China*
[e] *School of Materials Science and Engineering, Nanyang Technological University, Singapore 639798, Singapore*

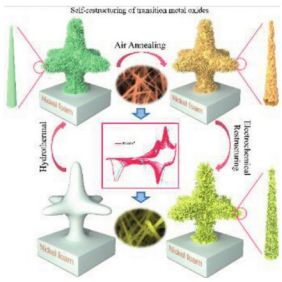
A cathode of pre-potassiated hydrated vanadium oxide ($K_xV_2O_5{\cdot}nH_2O$) is developed, in which K^+ acts as "pillar" to stabilize the crystal structure and crystal water acts as "lubricant" to improve the diffusion efficiency of Zn^{2+} ions. When used for *quasi*-solid-state zinc-ion batteries, $K_xV_2O_5{\cdot}nH_2O$ 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

Chinese Chemical Letters 33 (2022) 2669



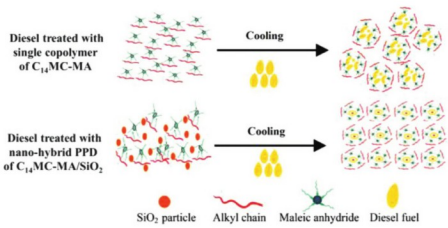
Teng Wang[a,b], Bo Xu[c], You Wang[a], Jiaqi Lei[a], Wenjing Qin[c], Ke Gui[b], Chuying Ouyang[c], Kai-Jie Chen[a], Hongxia Wang[b]

[a] *Key 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*
[b] *School of Chemistry and Physics, Faculty of Science, Queensland University of Technology, Brisbane, QLD 4001, Australia*
[c] *Department 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.

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

Chinese Chemical Letters 33 (2022) 2677



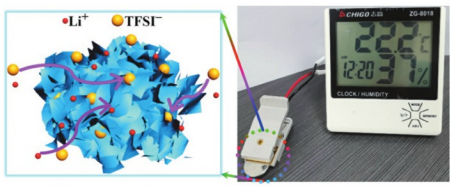
Yuan Xue[a,c], Fengfei Chen[a,b], Bin Sun[a], Hualin Lin[a], Bin Dai[b], Sheng Han[a,b]

[a] *School of Chemical and Environmental Engineering, Shanghai Institute of Technology, Shanghai 201418, China*
[b] *School of Chemistry and Chemical Engineering, Shihezi University, Shihezi 832003, China*
[c] *School 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.

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

Chinese Chemical Letters 33 (2022) 2681



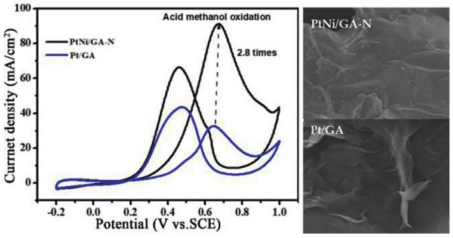
Jingjing Yan[b], Ling Miao[a], Hui Duan[a], Dazhang Zhu[a], Yaokang Lv[d], Liangchun Li[a], Lihua Gan[a], Mingxian Liu[a,c]

[a] *Shanghai Key Lab of Chemical Assessment and Sustainability, School of Chemical Science and Engineering, Tongji University, Shanghai 200092, China*
[b] *School of Chemical Engineering, Anhui University of Science and Technology, Huainan 232001, China*
[c] *College of Chemistry and Molecular Engineering, Zhengzhou University, Zhengzhou 450001, China*
[d] *College 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.

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

Chinese Chemical Letters 33 (2022) 2687



Xiang Ding[a,b], Meng Li[b], Junling Jin[a], Xiaobing Huang[a], Xiang Wu[c], Ligang Feng[b]

[a] *Hunan Provincial Key Laboratory of Water Treatment Functional Materials, College of Chemistry and Material Engineering, Hunan University of Arts and Science, Changde 415000, China*
[b] *School of Chemistry and Chemical Engineering, Yangzhou University, Yangzhou 225002, China*
[c] *School 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.

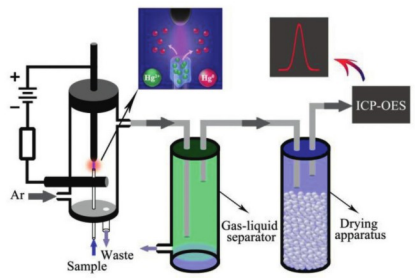
Ultrasensitive determination of mercury by ICP-OES coupled with a vapor generation approach based on solution cathode glow discharge

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



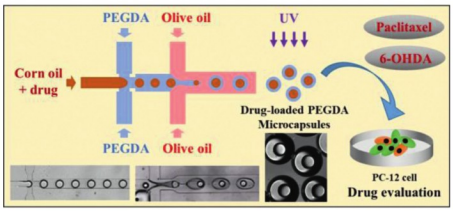
Facile fabrication of drug-loaded PEGDA microcapsules for drug evaluation using droplet-based microchip

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



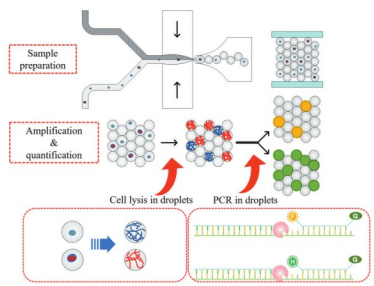
Single-cell level point mutation analysis of circulating tumor cells through droplet microfluidics

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 State 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



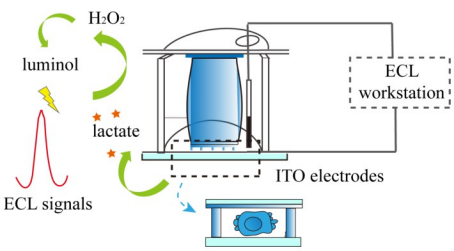
In-situ monitoring of cell-secreted lactate by electrochemiluminescence sensing under biomimetic microfluidic confinement

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



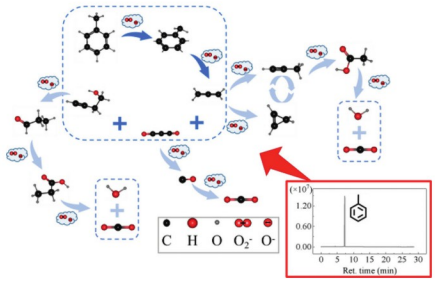
Synergistic catalytic ozonation of toluene with manganese and cerium varies at low temperature

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]

[a] *School of Environment and Energy, South China University of Technology, Guangzhou 510006, China*
[b] *National Engineering Laboratory for VOCs Pollution Control Technology and Equipment (SCUT), Guangzhou 510006, China*
[c] *Guangdong Provincial Key Laboratory of Atmospheric Environment and Pollution Control (SCUT), Guangzhou 510006, China*
[d] *Guangdong 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



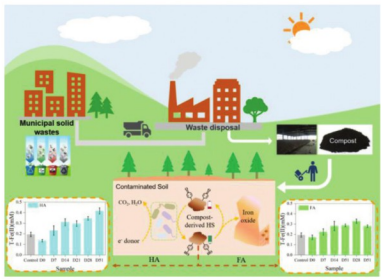
Contribution of redox-active properties of compost-derived humic substances in hematite bioreduction

Chao Yang [a,b,c], Lin-Xiao Hou [d], Bei-Dou Xi [a,b], Li-An Hou [e], Xiao-Song He [a,b]

[a] *State Key Laboratory of Environmental Criteria and Risk Assessment, Chinese Research Academy of Environmental Sciences, Beijing 100012, China*
[b] *State Environmental Protection Key Laboratory of Simulation and Control of Groundwater Pollution, Chinese Research Academy of Environmental Sciences, Beijing 100012, China*
[c] *School of Environmental Science and Engineering, Tianjin University, Tianjin 300350, China*
[d] *College of Chemical and Biological Engineering, Zhejiang University, Hangzhou 310027, China*
[e] *High-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



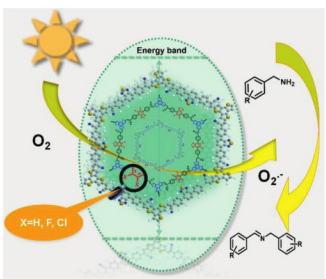
Halogenated benzothiadiazole-based conjugated polymers as efficient photocatalysts for dye degradation and oxidative coupling of benzylamines

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



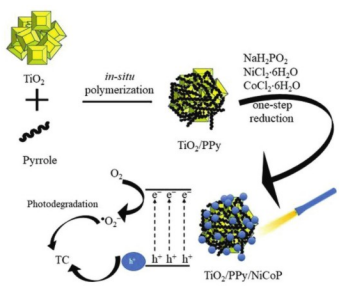
Fabrication of NiCoP decorated TiO_2/polypyrrole nanocomposites for the effective photocatalytic degradation of tetracycline

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 TiO_2/polypyrrole (named as TiO_2/PPy/NiCoP) with high photocatalytic activity were synthesized. The synthesized TiO_2/PPy/NiCoP possessed high photodegradation activity for tetracycline (TC). The results of culture of pea illustrated that the photodegradation products of TC with TiO_2/PPy/NiCoP were friendly to the environment.

Chinese Chemical Letters 33 (2022) 2741



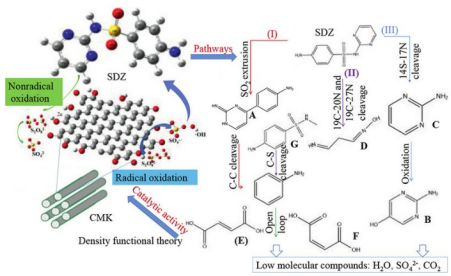
Ordered mesoporous carbon as an efficient heterogeneous catalyst to activate peroxydisulfate for degradation of sulfadiazine

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]

[a] *State Key Laboratory of Urban Water Resource and Environment, School of Environment, Harbin Institute of Technology, Harbin 150090, China*
[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



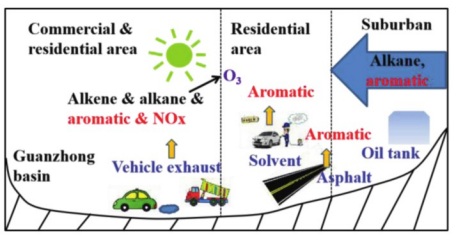
High impact of vehicle and solvent emission on the ambient volatile organic compounds in a major city of northwest China

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

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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.

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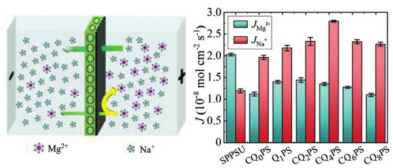

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