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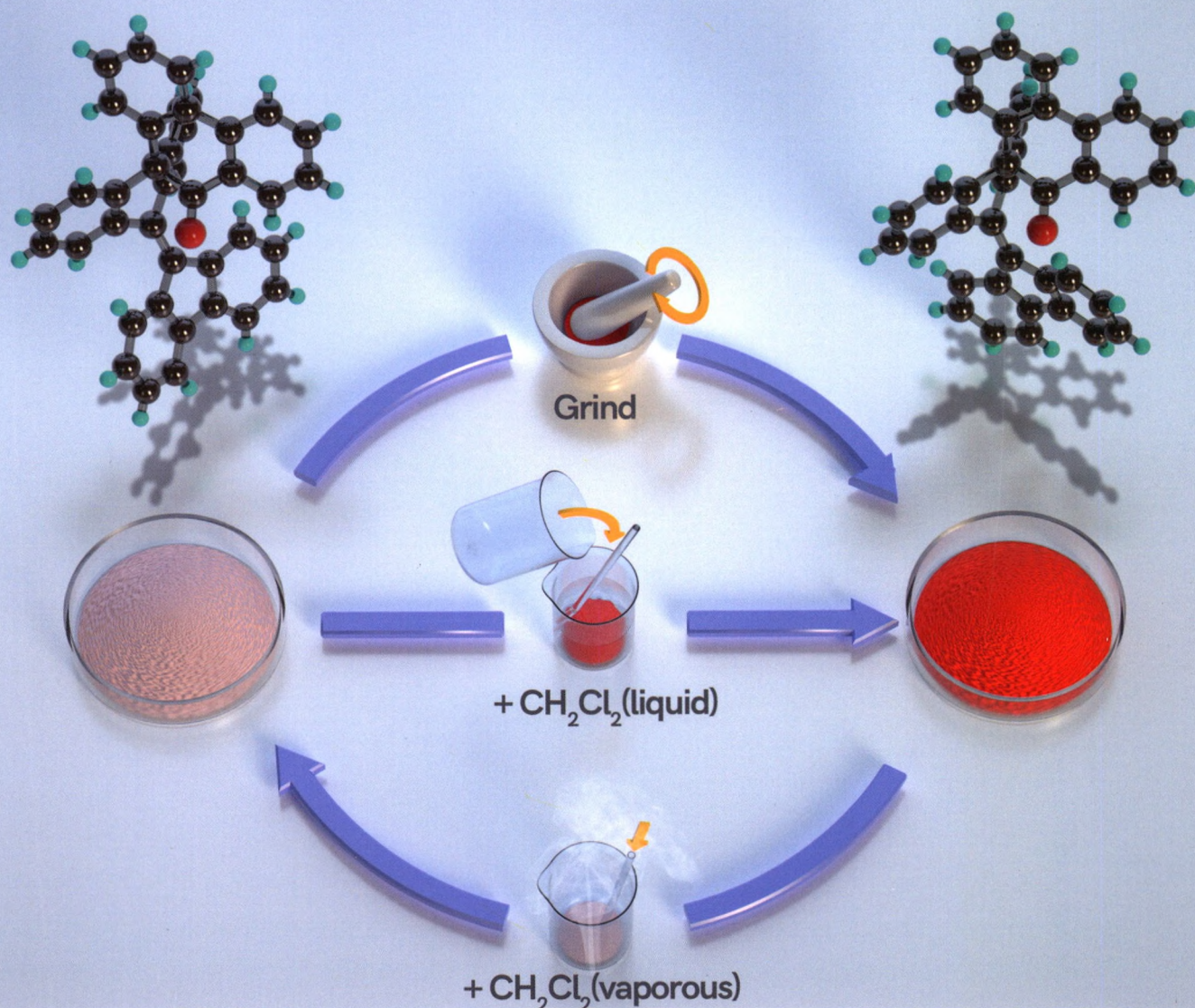
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Chinese Chemical Letters (中国化学快报)

| Volume 31 | Number 7 | JULY 2020 |



REVIEW

Zhiyong Qian et al.
Ag₂S nanoparticles as an emerging
single-component theranostic agent

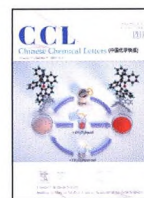
COMMUNICATION

Remi Chauvin et al.
Versatile synthesis of cadalene and
iso-cadalene from himachalenemixtures:
Evidence and application of unprecedented
rearrangements

Chinese Chemical Society

Institute of Materia Medica, Chinese Academy of Medical Sciences

万方数据



Graphical Abstracts/Chin Chem Lett 31 (2020) iii–xviii

Perspective

New techniques and strategies in drug discovery

Jintong Du^a, Jing Guo^b, Dongwei Kang^c, Zhihong Li^d, Guan Wang^e, Jianbing Wu^f, Zhen Zhang^b, Hao Fang^c, Xuben Hou^c, Zhangjian Huang^f, Guobo Li^g, Xiaoyun Lu^b, Xinyong Liu^c, Liang Ouyang^e, Li Rao^h, Peng Zhan^c, Xiaojin Zhang^d, Yihua Zhang^f

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^f State Key Laboratory of Natural Medicines, Jiangsu Key Laboratory of Drug Discovery for Metabolic Diseases, China Pharmaceutical University, Nanjing 210009, China

^g Key Laboratory of Drug Targeting and Drug Delivery System of Ministry of Education, West China School of Pharmacy, Sichuan University, Chengdu 610041, China

^h Key Laboratory of Pesticide & Chemical Biology (CCNU), Ministry of Education, Department of Chemistry, Central China Normal University, Wuhan 430079, China

Great success has been witnessed in last decades, some new techniques and strategies have been widely used in drug discovery. In this roadmap, several representative techniques and strategies are highlighted to show recent advances in this filed.

Chinese Chemical Letters 31 (2020) 1695



Reviews

Recent progress in tumor photodynamic immunotherapy

Lijun Shen^a, Tianjiao Zhou^a, Yatong Fan^a, Xin Chang^a, Yi Wang^a, Jianguo Sun^e, Lei Xing^{a,b,c,d}, Hulin Jiang^{a,b,c,d}

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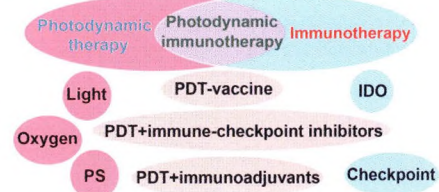
^c Jiangsu Key Laboratory of Drug Screening, China Pharmaceutical University, Nanjing 210009, China

^d Jiangsu Key Laboratory of Drug Discovery for Metabolic Diseases, China Pharmaceutical University, Nanjing 210009, China

^e Key Lab of Drug Metabolism and Pharmacokinetics, State Key Laboratory of Natural Medicines, China Pharmaceutical University, Nanjing 210009, China

Photodynamic immunotherapy is a promising research field which combines photodynamic therapy (PDT) with immunotherapy to achieve tumor ablation due to the generation of ROS and immune response. In this review, we summarize the recent progress of PDT, immunotherapy, and the combined application of them, which are expected to provide inspiration on the future prospect of photodynamic immunotherapy for profound therapeutic implications.

Chinese Chemical Letters 31 (2020) 1709



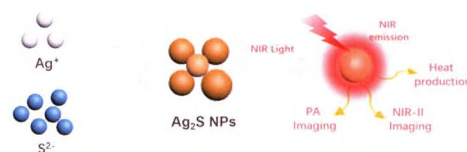
Ag₂S nanoparticles as an emerging single-component theranostic agent

Ruxia Han, Jinrong Peng, Yao Xiao, Ying Hao, Yanpeng Jia, Zhiyong Qian

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

In this review, the synthesis methods and influencing factors of synthesizing Ag₂S NPs with different sizes were compared firstly, and then the photothermal effect and fluorescence characteristics of Ag₂S NPs with different sizes were summarized. Finally, the possibilities and challenges of using Ag₂S NPs to construct theranostic agent were discussed in the end.

Chinese Chemical Letters 31 (2020) 1717



The application of biomacromolecules to improve oral absorption by enhanced intestinal permeability: A mini-review

Min Sun^a, Hankun Hu^b, Leming Sun^c, Zhen Fan^{a,d}

^a Department of Polymeric Materials, School of Materials Science and Engineering, Tongji University, Shanghai 201804, China

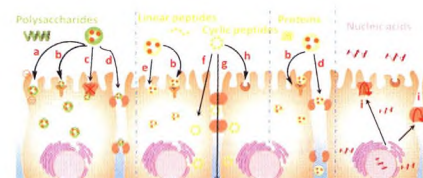
^b Department of Pharmacy, Zhongnan Hospital of Wuhan University, Wuhan 430071, China

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

^d Institute for Advanced Study, Tongji University, Shanghai 200092, China

Recent advances of various biomacromolecules in enhancing oral delivery efficiency by promoting intestinal permeability are reviewed, and their respective mechanisms are summarized to guide the use of biomacromolecules in oral administration.

Chinese Chemical Letters 31 (2020) 1729



Extracellular vesicles based electrochemical biosensors for detection of cancer cells: A review

Hui Xie^{a,b}, Kaili Di^c, Rongrong Huang^c, Adeel Khan^d, Yanyan Xia^c, Hongpan Xu^c, Chang Liu^c, Tingting Tan^c, Xinyu Tian^c, Han Shen^a, Nongyue He^{d,e}, Zhiyang Li^{a,b}

^a Department of Clinical Laboratory, Nanjing Drum Tower Hospital Clinical College of Xuzhou Medical University, Nanjing 210008, China

^b Department of Clinical Laboratory, Yizheng Hospital of Nanjing Drum Tower Hospital Group, Yizheng 211900, China

^c Department of Clinical Laboratory, the Affiliated Drum Tower Hospital of Nanjing University Medical School, Nanjing 210008, China

^d State Key Laboratory of Bioelectronics, School of Biological Science and Medical Engineering, National Demonstration Center for Experimental Biomedical Engineering Education (Southeast University), Southeast University, Nanjing 210096, China

^e Economical Forest Cultivation and Utilization of 2011 Collaborative Innovation Center in Hunan Province, Hunan Key Laboratory of Biomedical Nanomaterials and Devices, Hunan University of Technology, Zhuzhou 412007, China

This article summarizes studies proposing the electrochemical methods utilizing immunological and molecular methodologies for detecting EVs derived biomacromolecules such as miRNAs and transmembrane protein for cancer diagnosis. Moreover, the electrochemical detection methods are compared, and concludes future prospects for the development of electrochemical methods for EVs detection.

Chinese Chemical Letters 31 (2020) 1737



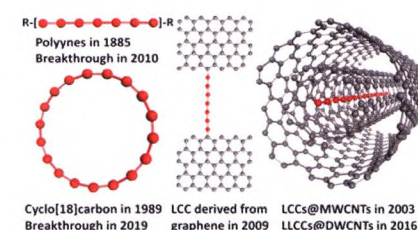
A review of linear carbon chains

Kan Zhang, Yifan Zhang, Lei Shi

State Key Laboratory of Optoelectronic Materials and Technologies, Nanotechnology Research Center, School of Materials Science and Engineering, Sun Yat-sen University, Guangzhou 510275, China

Carbon chains stabilized in different ways are introduced and their progresses on synthesis, properties, as well as applications are reviewed from both theoretical and experimental aspects.

Chinese Chemical Letters 31 (2020) 1746



Viologen derivatives with extended π -conjugation structures: From supra-/molecular building blocks to organic porous materials

Xiao-He Zhou^a, Yu Fan^{b,c}, Wan-Xia Li^a, Xiang Zhang^{b,d}, Rong-Ran Liang^b, Feng Lin^b, Tian-Guang Zhan^a, Jiecheng Cui^a, Li-Juan Liu^a, Xin Zhao^b, Kang-Da Zhang^a

^a Key Laboratory of the Ministry of Education for Advanced Catalysis Materials, College of Chemistry and Life Science, Zhejiang Normal University, Jinhua 321004, China

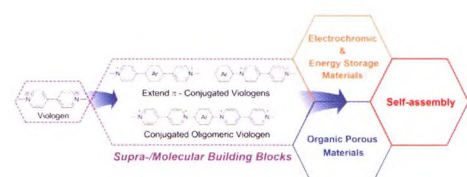
^b Key Laboratory of Synthetic and Self-Assembly Chemistry for Organic Functional Molecules, Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, Shanghai 200032, China

^c College of Science, Department of Physics, Shanghai University, Shanghai 200444, China

^d College of Chemical Engineering, Hunan Chemical Vocational Technology College, Zhuzhou 310027, China

This review highlights the recent progresses in the development of viologen derivatives with extended π -conjugation structures, including their applications in electrochromic and energy storage materials, supramolecular self-assembly as well as organic porous materials.

Chinese Chemical Letters 31 (2020) 1757



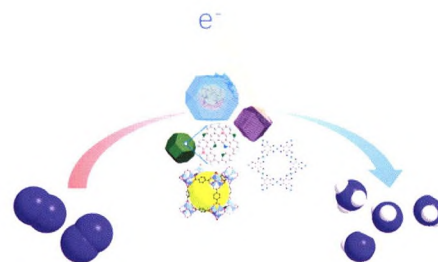
The application of metal-organic frameworks in electrocatalytic nitrogen reduction

Yihang Wang, Qiang Li, Wei Shi, Peng Cheng

Key Laboratory of Advanced Energy Materials Chemistry (MOE) and Collaborative Innovation Center of Chemical Science and Engineering (Tianjin), College of Chemistry, Nankai University, Tianjin 300071, China

Through three main strategies: i) MOFs as precursors of NRR catalysts, ii) MOFs as NRR catalysts and iii) MOF-based composites as NRR catalysts, MOF-based or MOF-derived NRR electrocatalysts were summarized.

Chinese Chemical Letters 31 (2020) 1768



A review on metal-organic frameworks for photoelectrocatalytic applications

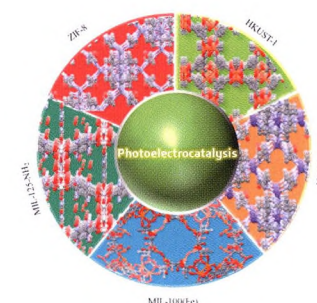
Feihu Mu^a, Benlin Dai^a, Wei Zhao^a, Lili Zhang^a, Jiming Xu^a, Xujing Guo^b

^a Jiangsu Key Laboratory for Chemistry of Low-Dimensional Materials, Jiangsu Engineering Laboratory for Environment Functional Materials, Jiangsu Collaborative Innovation Center of Regional Modern Agriculture and Environmental Protection, School of Chemistry and Chemical Engineering, Huaiyin Normal University, Huaian 223300, China

^b College of Resources and Environment, Chengdu University of Information Technology, Chengdu 610225, China

Herein, a comprehensive review on different MOFs for heterogeneous photoelectrocatalysis is carried out and, in particular, the application of this technique to CO₂ conversion and water splitting is discussed. The challenges and development prospects of MOFs in photoelectrocatalysis are also presented.

Chinese Chemical Letters 31 (2020) 1773



Communications

Blocking the defect sites on ultrathin Pt nanowires with Rh atoms to optimize the reaction path toward alcohol fuel oxidation

Xiaoyu Zhao^a, Huachao Zhao^a, Jiefang Sun^c, Gang Li^b, Rui Liu^b

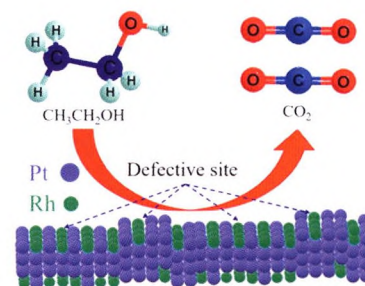
^a Tianjin Key Laboratory of Brine Chemical Engineering and Resource Eco-utilization, College of Chemical Engineering and Materials Science, Tianjin University of Science and Technology, Tianjin 300457, China

^b State Key Laboratory of Environmental Chemistry and Ecotoxicology, Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, Beijing 100085, China

^c Beijing Key Laboratory of Diagnostic and Traceability Technologies for Food Poisoning, Beijing Center for Disease Prevention and Control, Beijing 100013, China

A new strategy has been developed to block the defect sites of the Pt NWs catalyst using Rh atoms, which can effectively adjust the structure of the defect sites, resulting in regulation of the catalytic activity and optimization of the reaction pathway.

Chinese Chemical Letters 31 (2020) 1782



Transformable peptide nanoparticles inhibit the migration of N-cadherin overexpressed cancer cells

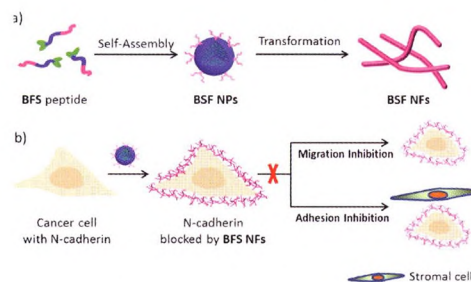
Jiaqi Fan^{a,b}, Yu Fan^b, Zijin Wei^{a,b}, Yijing Li^b, Xiangdan Li^a, Lei Wang^b, Hao Wang^b

^a Key Laboratory of Catalysis and Energy Materials Chemistry of Ministry of Education & Hubei Key Laboratory of Catalysis and Materials Science, South Central University for Nationalities, Wuhan 430074, China

^b CAS Center for Excellence in Nanoscience, CAS Key Laboratory for Biomedical Effects of Nanomaterials and Nanosafety, National Center for Nanoscience and Technology (NCNST), Beijing 100190, China

The transformable peptide BFS (BP-KLVFF-SWTLTPSGQSK) can form nanoparticles in PBS, which can transform to nanofibers when targeting and binding to N-cadherin. The nanofibers inhibit the migration of N-cadherin overexpressed MDA-MB-436 cancer cells.

Chinese Chemical Letters 31 (2020) 1787



Smart nanoprobe based on two-photon sensitized terbium-carbon dots for dual-mode fluorescence thermometer and antibacterial

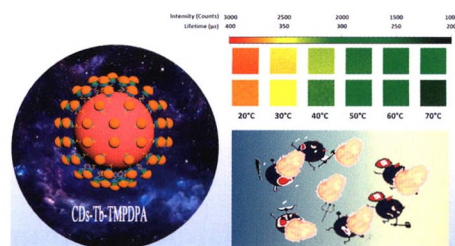
Huicheng Yan^a, Hongyuhang Ni^b, Yiwei Yang^a, Changfu Shan^a, Xiaoxi Yang^a, Xiangkai Li^b, Jing Cao^a, Wenyu Wu^a, Weisheng Liu^a, Yu Tang^a

^a State Key Laboratory of Applied Organic Chemistry, Key Laboratory of Nonferrous Metal Chemistry and Resources Utilization of Gansu Province, College of Chemistry and Chemical Engineering, Lanzhou University, Lanzhou 730000, China

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

The temperature response nanoprobe based on terbium functionalized carbon dots (CDs) was designed to detect temperature by using fluorescence intensity ratio and fluorescence lifetime. Due to the excellent photothermal conversion capability of CDs, photothermal antibacterial ability is also tested.

Chinese Chemical Letters 31 (2020) 1792



3D porous acellular cartilage matrix scaffold with surface mediated sustainable release of TGF- β 3 for cartilage engineering

Yixing Huang^a, Xingfang Yu^a, Linjie He^a, Xin Liao^a, Shuo Wang^b, Zhiyong Qian^c, Liyan Shen^a

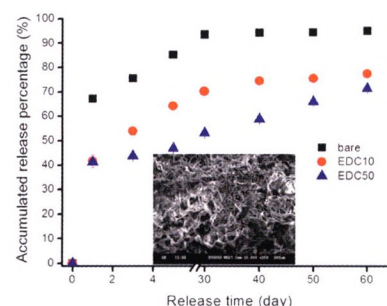
^a Key Laboratory of Orthopedics of Zhejiang Province, Department of Orthopedics, The Second Affiliated Hospital and Yuying Children's Hospital of Wenzhou Medical University, Wenzhou 325000, China

^b College of Pharmacy, Zhejiang Pharmaceutical College, Ningbo 315199, China

^c 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

We report here the fabrication of 3D porous acellular cartilage scaffold, and its coating with poly(L-lysine)/hyaluronic acid (PLL/HA) multilayer film. The multilayer coated porous scaffold was further loaded with TGF- β 3, which underwent sustainable release up to 60 days *in vitro*.

Chinese Chemical Letters 31 (2020) 1797



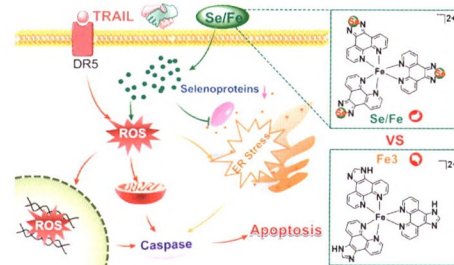
Dual-functional Se/Fe complex facilitates TRAIL treatment against resistant tumor cells via modulating cellular endoplasmic reticulum stress

Yahui Yang, Yifan Wang, Ligeng Xu, Tianfeng Chen

Department of Chemistry, Jinan University, Guangzhou 510632, China

Fe complex introduced with selenium (Se/Fe) shows great synergistic effects with TRAIL agonist treatment through modulating ER-stress related selenoproteins, inducing robust generation of ROS to trigger tumor cells apoptosis in extrinsic and intrinsic signaling pathways.

Chinese Chemical Letters 31 (2020) 1801



Anti-inflammatory catecholic chitosan hydrogel for rapid surgical trauma healing and subsequent prevention of tumor recurrence

Gang He^a, Xu Yan^b, Zhaohua Miao^a, Haisheng Qian^c, Yan Ma^a, Yan Xu^a, Li Gao^a, Yang Lu^b, Zhengbao Zha^a

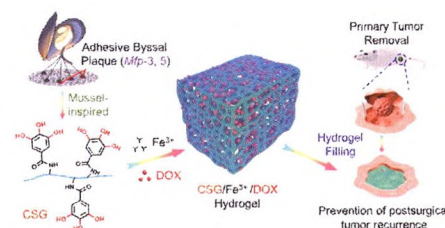
^a School of Food and Biological Engineering, Hefei University of Technology, Hefei 230009, China

^b School of Chemistry and Chemical Engineering, Hefei University of Technology, Hefei 230009, China

^c School of Biomedical Engineering, Research and Engineering Center of Biomedical Materials, Anhui Medical University, Hefei 230032, China

A mussel-inspired catecholic chitosan hydrogel was successfully developed here to realize rapid surgical trauma healing, inflammatory diminishing and prevention of tumor postsurgical recurrence.

Chinese Chemical Letters 31 (2020) 1807



Rapid identification of diarrheagenic *Escherichia coli* based on barcoded magnetic bead hybridization

Hongming Dong^a, Congli Tang^a, Ziyu He^a, Hongmei Liu^a, Yuyue Xu^a, Hao Huang^a, Gaojian Yang^a, Ziqi Xiao^a, Song Li^a, Yan Deng^{a,b}, Zhu Chen^a, Hui Chen^a, Zuodong Qin^c, Yasser Perera Negrin^d, Nongyue He^{a,b}

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

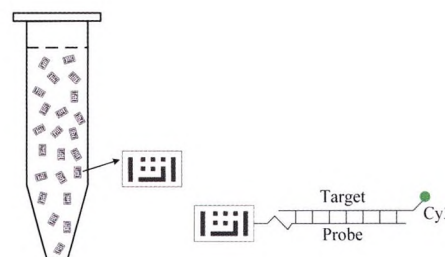
^b State Key Laboratory of Bioelectronics, Southeast University, Nanjing 210096, China

^c Hunan Engineering Technology Research Center for Comprehensive Development and Utilization of Biomass Resources, Hunan University of Science and Engineering, Yongzhou 425199, China

^d China-Cuba Biotechnology Joint Innovation Center (CCBJIC), Yongzhou Zhong Gu Biotechnology Co., Yongzhou 425000, China

We introduce a new method to identify and analyze a large number of pathogenic strains in *E. coli* by multiplex PCR and barcoded magnetic bead hybridization. This method has strong specificity and high sensitivity and detects multiple target sequences in one experiment. BMB array has great application potential.

Chinese Chemical Letters 31 (2020) 1812



Injectable baicalin/F127 hydrogel with antioxidant activity for enhanced wound healing

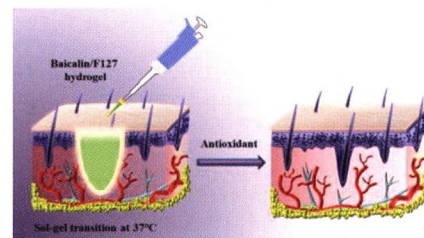
Guiting Liu^a, Ziting Bao^a, Jun Wu^{a,b}

^a Key Laboratory of Sensing Technology and Biomedical Instrument of Guangdong Province, School of Biomedical Engineering, Sun Yat-sen University, Guangzhou 510006, China

^b Research Institute of Sun Yat-sen University in Shenzhen, Shenzhen 518057, China

Baicalin, extracted from traditional Chinese medicine *Scutellaria baicalensis* Georg, has great potential for chronic skin wound treatment, however, the poor solubility and lack of suitable vehicles greatly limit its further application. In this study, we proposed a simple and robust strategy to enhance the solubility of baicalin and prepared a novel injectable baicalin/Fluronic® F-127 hydrogel to study its potential wound healing application. The results showed that this biocompatible hydrogel had a flexible antioxidant activity and could significantly accelerate wound healing in vivo.

Chinese Chemical Letters 31 (2020) 1817



Hyperbranched polymer micelles with triple-stimuli backbone-breakable iminoboronate ester linkages

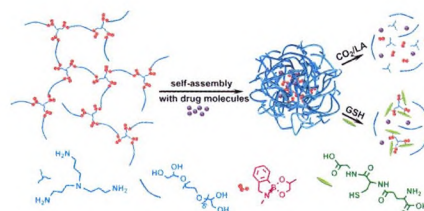
Xuan Zhang^a, Jushan Gao^b, Xiaoye Zhao^b, Zhaotie Liu^a, Zhongwen Liu^a, Ke Wang^b, Guo Li^a, Jinqiang Jiang^a

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

^b School of Pharmacy, Health Science Center, Xi'an Jiaotong University, Xi'an 710061, China

An iminoboronate-based backbone-breakable hyperbranched polymer (HBP(OEG-IB)) is designed to fabricate nano-carriages with CO₂, lactic acid and glutathione-triggered release behaviour.

Chinese Chemical Letters 31 (2020) 1822



Development and validation of an improved probabilistic quotient normalization method for LC/MS- and NMR-based metabolomic analysis

Yanpeng An^a, Si Liu^{a,b}, Fuhua Hao^b, Yulan Wang^c, Huiru Tang^a

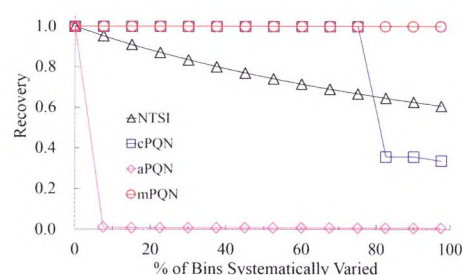
^a State Key Laboratory of Genetic Engineering, Zhongshan Hospital and School of Life Sciences, Human Phenome Institute, Metabonomics and Systems Biology Laboratory at Shanghai International Centre for Molecular Phenomics, Fudan University, Shanghai 200438, China

^b CAS Key Laboratory of Magnetic Resonance in Biological Systems, State Key Laboratory of Magnetic Resonance and Atomic and Molecular Physics, Wuhan Institute of Physics and Mathematics, University of Chinese Academy of Sciences, Wuhan 430071, China

^c Singapore Phenome Center, Lee Kong Chian School of Medicine, School of Biological Sciences, Nanyang Technological University, Singapore 636921, Singapore

An improved probabilistic quotient normalization method based on the mode- of- quotients (mPQN) was developed. Rigorous tests with simulated and real datasets showed its robustness for both the LC/MS- and NMR-based metabolomics.

Chinese Chemical Letters 31 (2020) 1827



Cholesterol as a functional metabolite cooperates with metadherin in cancer cells

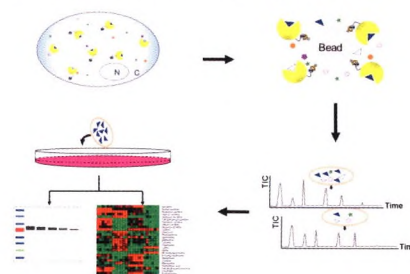
Wen Wang^{a,b}, Xiaolong Liu^a, Huan Chen^{a,b}, Ting Ling^{a,b}, Tian Xia^a, Xiumei Liu^a, Jing Liu^a, Wuxiyar Otkur^a, Xianzhe Shi^{a,b}, Huan Qi^a, Di Chen^a, Hai-Long Piao^{a,b}

^a CAS Key Laboratory of Separation Science for Analytical Chemistry, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian 116023, China

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

A study demonstrated and identified active protein-metabolite binding complexes through the affinity purification and followed by the successful identification and validation of the MTDH-cholesterol binding. Through the LC-MS-based metabolomics, we further defined the functional role of MTDH-cholesterol interaction in cancer cells.

Chinese Chemical Letters 31 (2020) 1831



An immunoassay based on lab-on-a-chip for simultaneous and sensitive detection of clenbuterol and ractopamine

Qi Wang^{a,b,1}, Jinqi Deng^{b,d,1}, Yiping Chen^{b,e}, Yunjing Luo^a, Xingyu Jiang^{b,c,d}

^a College of Life Science and Bioengineering, Beijing University of Technology, Beijing 100124, China

^b Beijing Engineering Research Center for BioNanotechnology and CAS Key Laboratory for Biomedical Effects of Nanomaterials and Nanosafety, CAS Center for Excellence in Nanoscience, National Center for NanoScience and Technology, Beijing 100190, China

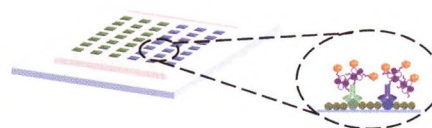
^c Department of Biomedical Engineering, Southern University of Science and Technology, Shenzhen 518055, China

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

^e College of Food Science and Technology, Huazhong Agricultural University, Wuhan 430070, China

We propose a microfluidics-based indirect competitive immunoassay (MICI) system to detect clenbuterol and ractopamine. The microfluidic technology greatly reduces the consumption of reagents, shortens the reaction time and enables high-throughput, multi-sample simultaneous detection.

Chinese Chemical Letters 31 (2020) 1835



Study of the effect of chemical composition on the surface wettability of three-dimensional graphene foams

Guihua Huang^a, Xinhong Song^c, Yiying Chen^b, Fangyuan Lin^b, Yipeng Huang^b, Feiming Li^b, Zhiyong Guo^a, Qihong Yao^a, Xi Chen^b

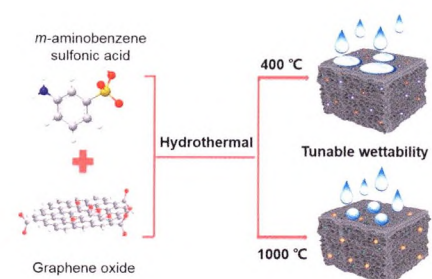
^a Institute of Analytical Technology and Smart Instruments, College of Environment and Public Health, XiamenHuaxia University, Xiamen 361024, China

^b State Key Laboratory of Marine Environmental Science, Xiamen University, Xiamen 361005, China

^c College of Ocean Science and Engineering, Shanghai Maritime University, Shanghai 201306, China

Aminobenzene sulfonic acid (ABSA) was selected as a typical doping precursor for the preparation of N/S co-doped 3D graphene foam (SNGF). The effects of the position of -SO₃H substituent group in ABSA and hydrothermal temperature on the surface wettability of SNGF have been studied.

Chinese Chemical Letters 31 (2020) 1839



Sulfonic acid-based metal organic framework functionalized magnetic nanocomposite combined with gas chromatography-electron capture detector for extraction and determination of organochlorine

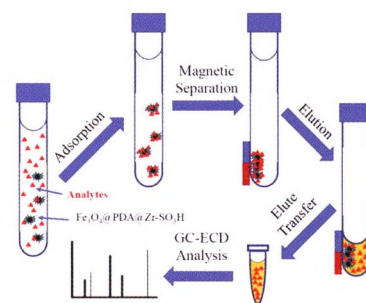
Ying Wang^a, Qing Ye^a, Menghuan Yu^a, Xijun Zhang^a, Chunhui Deng^b

^a School of chemistry and Environmental Science, Shangrao Normal University, Shangrao 334001, China

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

A functionalized MOF adsorbent was prepared for the rapid and efficient extraction of organochlorine.

Chinese Chemical Letters 31 (2020) 1843



Synthesis and characterization of an unexpected mechanochromicbistricyclic aromatic ene

Gui-Fei Huo, Qian Tu, Xiao-Li Zhao, Xueliang Shi, Hai-Bo Yang

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

Bistricyclic aromatic ene **AF** was coincidentally synthesized in a SnCl_2 -mediated reductive aromatization reaction through a carbocation induced 1,2-migration. **AF** exhibited interesting mechanochromic property and its twisted conformation could be further thermally populated to a triplet excited state.

Chinese Chemical Letters 31 (2020) 1847



Versatile synthesis of cadalene and *iso*-cadalene from himachalene mixtures: Evidence and application of unprecedented rearrangements

Mustapha Ait El Had^a, Abdelouahd Oukhrib^a, Mohamed Zaki^a, Martine Urrutigoity^{b,c}, Ahmed Benharref^a, Remi Chauvin^{b,d}

^a Laboratoire de Chimie Biomoléculaire, Substances Naturelles et Réactivité (URAC 16), Faculté des Sciences Semlalia, Université Cadi Ayyad, B.P. 2390, Marrakech, Morocco

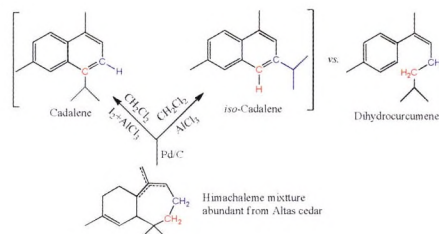
^b CNRS, LCC (Laboratoire de Chimie de Coordination), BP 44099, 31077, Toulouse Cedex 4, France

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^d Université de Toulouse, UPS, ICT-FR 2599, 31062, Toulouse Cedex 9, France

A versatile selective valorization of an abundant essential oil mixture from Atlas cedar is disclosed: It relies on unprecedented redox-controlled skeletal rearrangements in aromatic chemistry, occurring under green conditions.

Chinese Chemical Letters 31 (2020) 1851



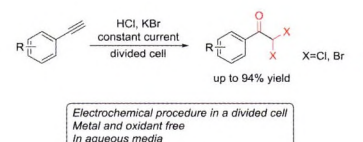
Electrochemical synthesis of α,α -dihaloacetophenones from terminal alkyne derivatives

Zhibin Li, Qi Sun, Peng Qian, Kangfei Hu, Zhenggen Zha, Zhiyong Wang

Hefei National Laboratory for Physical Sciences at Microscale, CAS Key Laboratory of Soft Matter Chemistry & Center for Excellence in Molecular Synthesis of Chinese Academy of Sciences, Collaborative Innovation Center of Suzhou Nano Science and Technology & School of Chemistry and Materials Science, University of Science and Technology of China, Hefei 230026, China

An electrochemical synthesis of α,α -dihaloacetophenones from alkyne derivatives was developed by virtue of anodic oxidation. The reaction can be carried out smoothly at room temperature under metal and oxidant free condition in aqueous media, affording the α,α -dihaloacetophenones derivatives in good to excellent yield.

Chinese Chemical Letters 31 (2020) 1855



Facile access to chiral 4-substituted chromanes through Rh-catalyzed asymmetric hydrogenation

Lin Tao^a, Qingyang Zhao^{b,c}, Xumu Zhang^{a,b}, Xiu-Qin Dong^a

^a Key Laboratory of Biomedical Polymers, Engineering Research Centre of Organosilicon Compounds & Materials, Ministry of Education, College of Chemistry and Molecular Sciences, Wuhan University, Wuhan 430072, China

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

^c School of Pharmaceutical Sciences (Shenzhen), Sun Yat-sen University, Shenzhen 518107, China

Rh/ZhaoPhos-catalyzed asymmetric hydrogenation of a series of (*E*)-2-(chroman-4-ylidene)acetates was successfully developed to prepare various chiral 4-substituted chromanes with high yields and excellent enantioselectivities (up to 99% yield, 98% ee, 5000 TON).

Chinese Chemical Letters 31 (2020) 1859



Visible-light-promoted oxidative decarboxylation of arylacetic acids in air: Metal-free synthesis of aldehydes and ketones at room temperature

Shuaiqi He^a, Xiaolan Chen^a, Fanlin Zeng^a, Peipei Lu^a, Yuyu Peng^c, Lingbo Qu^a, Bing Yu^{a,b}

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

^b Henan Nonferrous Metals Geological Exploration Institute, Zhengzhou 450052, China

^c Hunan Provincial Key Laboratory of Materials Protection for Electric Power and Transportation, Changsha University of Science and Technology, Changsha 410114, China

A metal-free 4CzIPN-catalyzed oxidative decarboxylation reaction of arylacetic acids to aromatic aldehydes and ketones was developed at room temperature with air as oxidant under blue-light irradiation.

Chinese Chemical Letters 31 (2020) 1863



1,2-Diethoxyethane catalyzed oxidative cleavage of gem-disubstituted aromatic alkenes to ketones under minimal solvent conditions

Kai-Jian Liu^a, Ji-Hui Deng^a, Tang-Yu Zeng^a, Xin-Jie Chen^c, Ying Huang^b, Zhong Cao^b, Ying-Wu Lin^d, Wei-Min He^a

^a Department of Chemistry, Hunan University of Science and Engineering, Yongzhou 425100, China

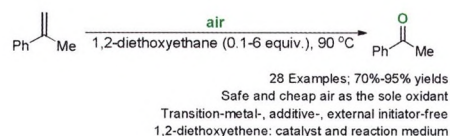
^b Hunan Provincial Key Laboratory of Materials Protection for Electric Power and Transportation, Changsha University of Science and Technology, Changsha 410114, China

^c School of Chemistry and Chemical Engineering, Hunan University of Science and Technology, Xiangtan 411201, China

^d School of Chemistry and Chemical Engineering, University of South China, Hengyang 421001, China

By employing 1,2-diethoxyethane as a catalyst and ambient air as an oxidant, an efficient protocol for the construction of various aryl-alkyl and diaryl ketones through oxidative cleavage of gem-disubstituted aromatic alkenes under minimal solvent conditions has been achieved.

Chinese Chemical Letters 31 (2020) 1868



Inhibition of insulin fibrillation by amphiphilic sulfonatocalixarene

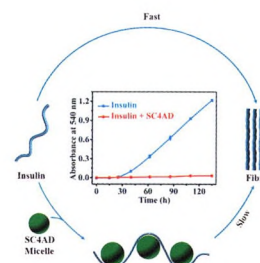
Hong Zhao^a, Xiao-Hua Yang^b, Yu-Chen Pan^a, Han-Wen Tian^a, Xin-Yue Hu^a, Dong-Sheng Guo^a

^a College of Chemistry, Key Laboratory of Functional Polymer Materials (Ministry of Education), State Key Laboratory of Elemento-Organic Chemistry, Nankai University, Tianjin 300071, China

^b Research Institute of Petroleum Engineering, Sinopec, Beijing 100101, China

Amphiphilic sulfonatocalixarene exhibits pronounced efficiency on inhibiting insulin fibrillation.

Chinese Chemical Letters 31 (2020) 1873



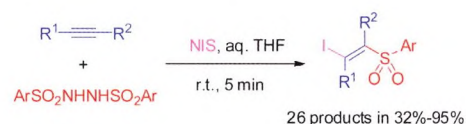
Introduction of *N,N'*-disulfonylhydrazines as new sulfonylating reagents for highly efficient synthesis of (*E*)- β -iodovinyl arenesulfones under mild conditions

Dongping Luo, Lin Min, Weiping Zheng, Lidong Shan, Xinyan Wang, Yuefei Hu

Key Laboratory of Bioorganic Phosphorus Chemistry and Chemical Biology (Ministry of Education), Department of Chemistry, Tsinghua University, Beijing 100084, China

N,N'-Disulfonylhydrazines were introduced as new sulfonylating reagents to achieve a highly efficient synthesis of (*E*)- β -iodovinyl arenesulfones under extremely mild conditions.

Chinese Chemical Letters 31 (2020) 1877



Design and synthesis of the ring-opened derivative of 3-*n*-butylphthalide-ferulic acid-glucose trihybrids as potential anti-ischemic agents

Jianbing Wu^a, Wei Yin^a, Yinqiu Zhang^a, Hui Ye^a, Yunman Li^b, Jide Tian^c, Zhangjian Huang^a, Yihua Zhang^a

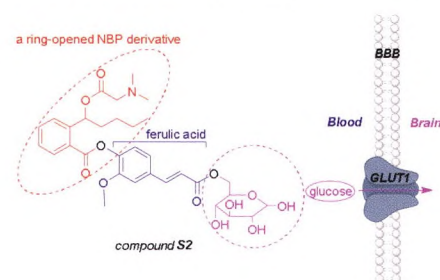
^a State Key Laboratory of Natural Medicines, Jiangsu Key Laboratory of Drug Discovery for Metabolic Diseases, Center of Drug Discovery, China Pharmaceutical University, Nanjing 210009, China

^b State Key Laboratory of Natural Medicines, Department of Physiology, China Pharmaceutical University, Nanjing 210009, China

^c Department of Molecular and Medical Pharmacology, University of California, Los Angeles, CA 90095, United States

S2 is 30-fold more water-soluble, over 10-fold more potent in inhibition of platelet aggregation, and more effectively reduces ROS generation, protects primary neuronal cells from OGD/R-induced damage, as well as improves PK profile and active component distribution in rodent brain as compared to 3-*n*-butylphthalide (NBP), suggesting that **S2** may be a potential anti-ischemia stroke agent.

Chinese Chemical Letters 31 (2020) 1881



Synthesis of selenium-doped carbon from glucose: An efficient antibacterial material against *Xcc*

Hongen Cao^{a,b,c}, Yufan Yang^a, Xijun Chen^b, Jian Liu^d, Chao Chen^{a,e}, Shuzhong Yuan^b, Lei Yu^a

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

^b School of Horticulture and Plant Protection, Yangzhou University, Yangzhou 225009, China

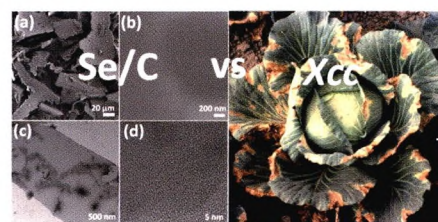
^c State Key Laboratory Breeding Base of Green Pesticide and Agricultural Bioengineering, Key Laboratory of Green Pesticide and Agricultural Bioengineering, Ministry of Education, Research and Development Center for Fine Chemicals, Guizhou University, Guiyang 550025, China

^d Sichuan Selewood Technology Company Limited, Chengdu 610218, China

^e Department of Applied Chemistry, Faculty of Engineering, Kyushu Institute of Technology, Kitakyushu 804-8550, Japan

Se/C as a novel carbon-based biomaterial was prepared by using cheap and abundant glucose as the carbon source. It was highly active and could well restrain *Xanthomonas campestris* pv. *campestris*. This work as the first report on the bioactivity studies of Se/C significantly expands the application scopes of the selenium-containing materials.

Chinese Chemical Letters 31 (2020) 1887



Simple manganese carbonyl catalyzed hydrogenation of quinolines and imines

Zelong Wang^{a,b}, Lei Chen^{a,c}, Guoliang Mao^c, Congyang Wang^{a,b,d}

^a Beijing National Laboratory for Molecular Sciences, CAS Key Laboratory of Molecular Recognition and Function, CAS Research/Education Center for Excellence in Molecular Sciences, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China

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

^c Provincial Key Laboratory of Oil & Gas Chemical Technology, College of Chemistry and Chemical Engineering, Northeast Petroleum University, Daqing 163318, China

^d Physical Science Laboratory, Huairou National Comprehensive Science Center, Beijing 101400, China

Earth-abundant manganese catalysis can now enable hydrogenation of quinolines and imines by using simple manganese carbonyls, $\text{Mn}_2(\text{CO})_{10}$ or $\text{MnBr}(\text{CO})_5$, thus eliminating the previous requirements on pincer-type or bidentate ligands.

Chinese Chemical Letters 31 (2020) 1890



Visible-light-initiated malic acid-promoted cascade coupling/ cyclization of aromatic amines and KSCN to 2-aminobenzothiazoles without photocatalyst

Wei-Bao He^a, Lan-Qing Gao^a, Xin-Jie Chen^c, Zhi-Lin Wu^d, Ying Huang^b, Zhong Cao^b, Xin-Hua Xu^a, Wei-Min He^b

^a Department of Chemistry, Hunan University, Changsha 410082, China

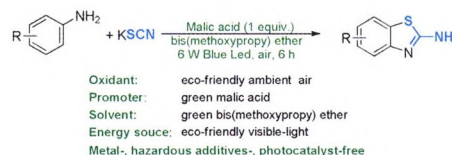
^b Hunan Provincial Key Laboratory of Materials Protection for Electric Power and Transportation, Changsha University of Science and Technology, Changsha 410114, China

^c School of Chemistry and Chemical Engineering, Hunan University of Science and Technology, Xiangtan 411201, China

^d School of Chemistry and Chemical Engineering, University of South China, Hengyang 421001, China

A simple and practical method for the synthesis of 2-aminobenzothiazoles through visiblelight-initiated malic acid-promoted cascade coupling/cyclization of aromatic amines and KSCN with ambient air as an oxidant in eco-friendly bis(methoxypropy) ether at ambient temperature was developed.

Chinese Chemical Letters 31 (2020) 1895



Tailorable carbazolyl cyanobenzene-based photocatalysts for visible light-induced reduction of aryl halides

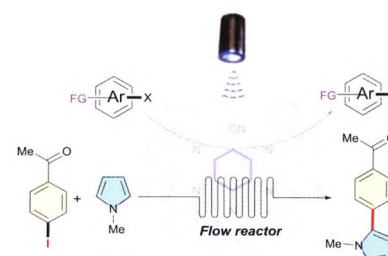
Wei Ou^a, Ru Zou^a, Mengting Han^{a,b}, Lei Yu^b, Chenliang Su^a

^a International Collaborative Laboratory of 2D Materials for Optoelectronic Science & Technology of Ministry of Education, Engineering Technology Research Center for 2D Materials Information Functional Devices and Systems of Guangdong Province, Institute of Microscale Optoelectronics, Shenzhen University, Shenzhen 518060, China

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

Herein, carbazolyl cyanobenzene (CCB)-based organic photocatalyst 5CzBN, a metal-free, low-cost, scalable and sustainable photocatalyst with both strong oxidative and reductive ability, exhibits superior performance for both dehalogenation and C—C bond-forming arylation reactions. Furthermore, photocatalytic continuous-flow technology makes the C—C bond-forming arylation easier to scale-up and more practical.

Chinese Chemical Letters 31 (2020) 1899



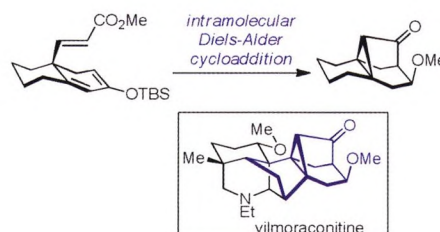
Assembly of the 6/3/5/6 tetracyclic core of rearranged-type C₁₉-diterpenoid alkaloids

Zhaoxiang Meng, Fen Mi, Fei Lu, Wei Tan, Xiao-Yu Liu, Yong Qin

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

Assembly of the highly strained 6/3/5/6 tetracyclic core of the rearranged-type C₁₉-diterpenoid alkaloids is presented. Strategically, the synthesis employs an intramolecular Diels–Alder cycloaddition reaction as the key step.

Chinese Chemical Letters 31 (2020) 1903



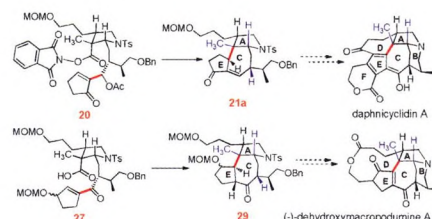
Synthesis of ACE tricyclic systems of daphnicyclidin A and dehy-droxymacropodumine A

Qi Wang, Chao Zhang, Jun Yang

Key Laboratory of the Ministry of Education for Medicinal Resources and Natural Pharmaceutical Chemistry, Key Laboratory of Macromolecular Science of Shaanxi Province, School of Chemistry and Chemical Engineering, Shaanxi Normal University, Chang'an Campus, Xi'an 710119, China

The synthesis of the ACE tricyclic systems of daphnicyclidin A and dehydroxymacropodumine A are developed. The key reactions include an efficient aldol reaction to introduce chiral fragment **33** for further construction of piperidine ring B and seven-membered ring C, a nucleophilic addition of lithium pentene to aldehyde for installation of ring E, and a photocatalytic decarboxylation conjugate addition to construct ring C.

Chinese Chemical Letters 31 (2020) 1906

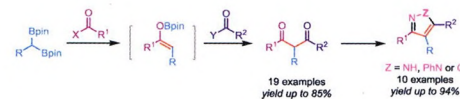


Hetero diacylation of 1,1-diborylalkanes: Practical synthesis of 1,3-diketones

Chinese Chemical Letters 31 (2020) 1911

Liang-Hua Zou^a, Min Fan^{a,b}, Lu Wang^b, Chao Liu^b^a Key Laboratory of Carbohydrate Chemistry and Biotechnology, Ministry of Education, School of Pharmaceutical Sciences, Jiangnan University, Wuxi 214122, China^b State Key Laboratory for Oxo Synthesis and Selective Oxidation, Suzhou Research Institute of LICP, Lanzhou Institute of Chemical Physics (LICP), Chinese Academy of Sciences, Lanzhou 730000, China

An efficient protocol for the synthesis of asymmetric 1,3-diketones was reported through diacylation of 1,1-diborylalkanes using two different acyl sources. In this transformation, an enolate boron species was initially formed by introducing an acyl group, then it was trapped by another acyl group to form 1,3-diketone. This method not only provided the gateway to obtain a series of 1,3-diketones, but also afforded an operationally simple and efficient access to pyrazoles and isoxazoles.

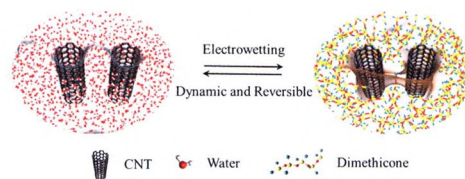


Dynamic and reversible electrowetting with low voltage on the dimethicone infused carbon nanotube array in air

Chinese Chemical Letters 31 (2020) 1914

Miao Wang^a, Lei Zhou^a, Yaqi Hou^b, Wen He^b, Wei Liu^a, Feng Wu^a, Xu Hou^{a,b}^a Research Institute for Biomimetics and Soft Matter, Fujian Provincial Key Laboratory for Soft Functional Materials Research, Jiujiang Research Institute, College of Physical Science and Technology, Xiamen University, Xiamen 361005, China^b State Key Laboratory of Physical Chemistry of Solid Surfaces, Collaborative Innovation Center of Chemistry for Energy Materials, College of Chemistry and Chemical Engineering, Xiamen University, Xiamen 361005, China

A dynamic strategy has been developed to prevent the CNT array from electrochemical damage meanwhile lower the energy input that achieved reversible and *in situ* electrowetting in air. The relevant theoretical simulations are demonstrated from the view of surface binding energy.



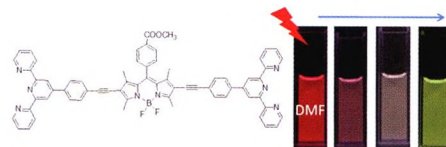
Free radical oxidation reaction for selectively solvatochromic sensors with dynamic sensing ability

Chinese Chemical Letters 31 (2020) 1919

Fengjuan Shen, Tao Wang, Xudong Yu, Yajuan Li

College of Science, Hebei University of Science and Technology, Shijiazhuang 050080, China

A novel BODIPY based fluorescent sensor for selective and visual sensing of DMF is developed and the sensing process of BODPY-DT exhibits dynamic fluorescent emission color changes from red to yellow-green.



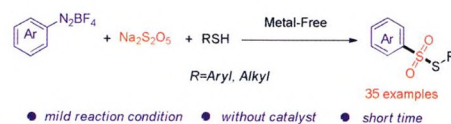
TFA promoted multi-component reaction of aryldiazonium with sodium metabisulphite and thiols: Construction of thiosulfonate under transition-metal free conditions

Chinese Chemical Letters 31 (2020) 1923

Cheng-Mi Huang, Jian Li, Shun-Yi Wang, Shun-Jun Ji

Key Laboratory of Organic Synthesis of Jiangsu Province, College of Chemistry, Chemical Engineering and Materials Science & Collaborative Innovation Center of Suzhou Nano Science and Technology, Soochow University, Suzhou 215123, China

A TFA promoted multi-component reaction of aryldiazonium with sodium metabisulphite and thiols to construct thiosulfonates under transition-metal free conditions is reported. The thiosulfonates were isolated in good yields with broad tolerance of functional group. Readily available inorganic $\text{Na}_2\text{S}_2\text{O}_5$ was applied as the sulfur dioxide surrogate. This strategy features easily available substrates, mild reaction conditions and free transition-metal catalyst.



Solar cells sensitized by porphyrin dyes containing a substituted carbazole donor with synergistically extended absorption and suppressed the dye aggregation

Yunyu Tang^a, Xiujuan Liu^b, Yueqiang Wang^b, Qingyun Liu^c, Xin Li^d, Chengjie Li^b, Xiaosheng Shen^a, Yongshu Xie^b

^a Laboratory of Quality Safety and Processing for Aquatic Product, East China Sea Fisheries Research Institute, Chinese Academy of Fishery Sciences, Shanghai 200090, China

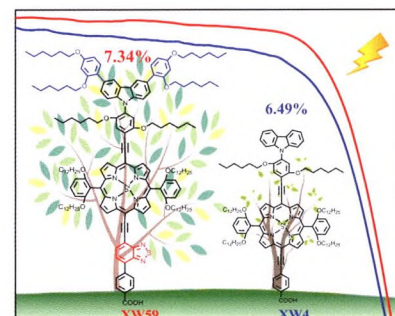
^b Key Laboratory for Advanced Materials and Institute of Fine Chemicals, School of Chemistry and Molecular Engineering, East China University of Science and Technology, Shanghai 200237, China

^c College of Chemical and Environmental Engineering, Shandong University of Science and Technology, Qingdao 266590, China

^d Division of Theoretical Chemistry and Biology, School of Biotechnology, KTH Royal Institute of Technology, Stockholm SE-10691, Sweden

Rational modulation of the carbazole-based donor by introducing bulky groups and a benzothiadiazole unit as an extra auxiliary electron acceptor simultaneously broadens the absorption and suppresses the dye aggregation/charge recombination. With synergistically enhanced V_{oc} and J_{sc} , an improved efficiency has been achieved.

Chinese Chemical Letters 31 (2020) 1927



Synthesis and self-assembly of poly(ethylene glycol)-*block*-poly(*N*-3-(methylthio)propyl glycine) and their oxidation-sensitive polymersomes

Yangwei Deng^{a,b}, Hui Chen^a, Xinfeng Tao^{a,e}, Sylvain Trépout^d, Jun Ling^b, Min-Hui Li^{a,c}

^a Chimie ParisTech, PSL University Paris, CNRS, Institut de Recherche de Chimie Paris, Paris 75005, France

^b MOE Key Laboratory of Macromolecular Synthesis and Functionalization, Department of Polymer Science and Engineering, Zhejiang University, Hangzhou 310027, China

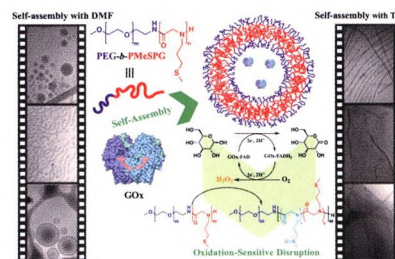
^c Beijing Advanced Innovation Center for Soft Matter Science and Engineering, Beijing University of Chemical Technology, Beijing 100029, China

^d Institut Curie, Inserm US43, University Paris Saclay, Orsay Cedex 91405, France

^e Shanghai Key Laboratory of Advanced Polymeric Materials, School of Materials Science and Engineering, East China University of Science and Technology, Shanghai 200237, China

Amphiphilic block copolymers PEG-*b*-PMeSPG were synthesized, and their self-assemblies studied. PEG-*b*-PMeSPG polymersomes loaded with glucose oxidase showed oxidation-sensitive disruption upon H_2O_2 production in the presence of D -glucose.

Chinese Chemical Letters 31 (2020) 1931



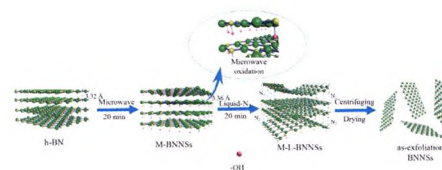
Scalable exfoliation for few-layered hexagonal boron nitride nanosheets (BNNs) by microwave-assisted expansion and liquid nitrogen intercalation

Zhansheng Ma, Zan Liu, Zhilin Cheng

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

The reliable exfoliation for BNNs nanosheets was successfully achieved, which adopted the combination of microwave-assisted expansion and liquid nitrogen intercalation.

Chinese Chemical Letters 31 (2020) 1936



Cu/Cu₂O nanostructures derived from copper oxalate as high performance electrocatalyst for glucose oxidation

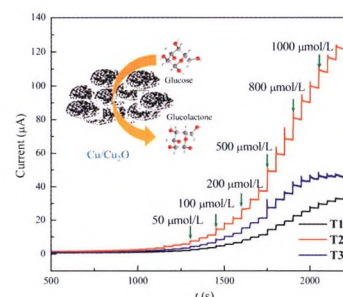
Guoqiang Yuan^a, Shangkui Yu^a, Ji Jie^a, Chen Wang^a, Qing Li^{a,b}, Huan Pang^b

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

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

The strategy demonstrated herein is the design and development of a highly efficient, stable and inexpensive porous Cu/Cu₂O nanostructures electrocatalyst via a controllable and facile a low temperature heat treatment of the precursor $CuC_2O_4 \cdot 2H_2O$ in N_2 . The as-synthesized Cu/Cu₂O nanostructure exhibited outstanding electrocatalytic performance for the glucose, including good stability, excellent sensitivity and remarkable selectivity.

Chinese Chemical Letters 31 (2020) 1941



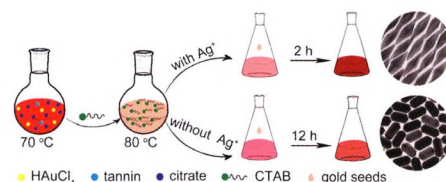
Getting rid of NaBH_4 : Gold seeds reduced by air-stable agents for synthesizing *quasi* one-dimensional gold nanoparticles

Jinxia Sun, Rong Luo, Yunsheng Xia

Key Laboratory of Functional Molecular Solids, Ministry of Education, College of Chemistry and Materials Science, Anhui Normal University, Wuhu 241000, China

We present a novel and easy to operate seed-mediated system for synthesizing gold bipyramids and gold nanorods. The used gold seeds are reduced by tannin and citrate, two kinds of air-stable ligands, and conventionally employed unstable NaBH_4 are thoroughly cast off.

Chinese Chemical Letters 31 (2020) 1946



Molecular simulations of host-guest interactions between zeolite framework STW and its organic structure-directing agents

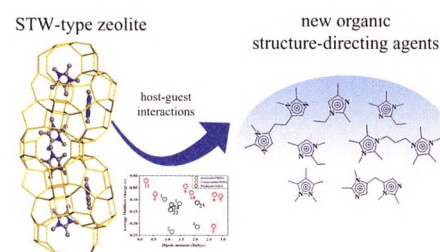
Chao Shi^a, Lin Li^a, Lixia Yang^{a,b}, Yi Li^{a,b}

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

^b International Center of Future Science, Jilin University, Changchun 130012, China

We performed a theoretical study in the host-guest interactions between zeolite framework STW and its 21 organic structure-directing agents. Seven alkylated imidazolium and pyrazolium cations have been designed as new structure-directing agents according to their atomic charge distributions and dipole moments.

Chinese Chemical Letters 31 (2020) 1951



Extraction of Cr(VI) from chromite ore processing residue via hydrothermal-assisted phase transformation

Xiaofeng Mo^a, Jin Zhou^a, Le Lin^a, Zuqi Zhong^a, Shaohua Yang^a, Xueming Liu^{a,b}, Zhenqing Shi^a, Dongye Zhao^c, Zhang Lin^{a,b}

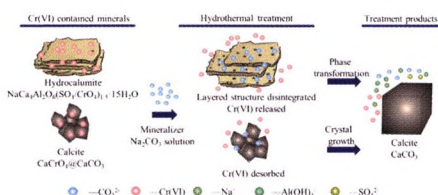
^a The Key Laboratory of Pollution Control and Ecosystem Restoration in Industry Clusters (Ministry of Education), School of Environment and Energy, South China University of Technology, Guangzhou 510006, China

^b Sino-Singapore International Joint Research Institute, Sino-Singapore Guangzhou Knowledge City, Guangzhou 510006, China

^c Environmental Engineering Program, Department of Civil Engineering, Auburn University, Auburn AL 36849, United States

In hydrothermal condition, mineralizer (Na_2CO_3) reacted with Cr(VI)-contained minerals (hydrocalumite and calcite). The hydrocalumite transformed into calcite and the calcite crystals grew into particles with large size and complete surface, so that Cr(VI) was released and departed from the minerals.

Chinese Chemical Letters 31 (2020) 1956



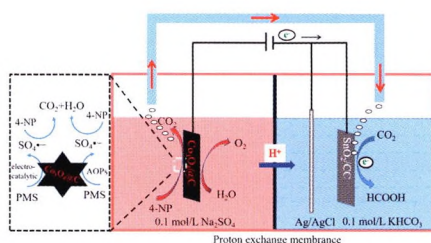
Degradation of 4-nitrophenol by electrocatalysis and advanced oxidation processes using $\text{Co}_3\text{O}_4/\text{C}$ anode coupled with simultaneous CO_2 reduction via SnO_2/CC cathode

Meng Zhu, Longshuai Zhang, Shanshan Liu, Dengke Wang, Yuancheng Qin, Ying Chen, Weili Dai, Yuehua Wang, Qiuju Xing, Jianping Zou

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

$\text{Co}_3\text{O}_4/\text{C}$ improved the degradation and conductivity, while SnO_2/CC cathode greatly improved the FE and stability of CO_2 reduction to HCOOH .

Chinese Chemical Letters 31 (2020) 1961



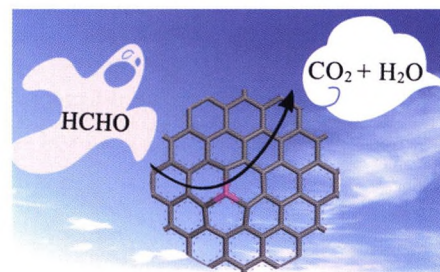
Single atom catalytic oxidation mechanism of formaldehyde on Al doped graphene at room temperature

Guanlan Liu, Junhui Zhou, Weina Zhao, Zhimin Ao, Taicheng An

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

In this work, density function theory calculations were employed to investigate the catalytic oxidation degradation of HCHO on single Al atom doped graphene system.

Chinese Chemical Letters 31 (2020) 1966



Dissolved organic matter-mediated reduction of ionic Au(III) to elemental Au nanoparticles and their growth to visible granules

Ying Chen^{a,b,c}, Yingying Guo^{a,b,c}, Guangliang Liu^{d,e}, Maoyong Song^c, Yong Cai^{a,d}, Yongguang Yin^{a,b,c,e}

^a State Key Laboratory of Environmental Chemistry and Ecotoxicology, Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, Beijing 100085, China

^b University of Chinese Academy of Sciences, Beijing 100085, China

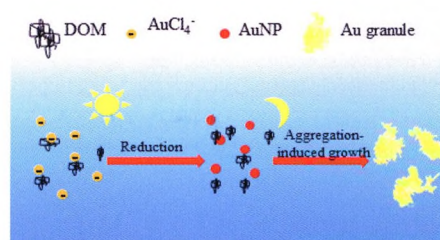
^c Laboratory of Environmental Nanotechnology and Health Effect, Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, Beijing 100085, China

^d Department of Chemistry and Biochemistry, Florida International University, Miami, FL 33199, United States

^e Institute of Environment and Health, Jiangnan University, Wuhan 430056, China

Au nanoparticles from ionic Au induced by sunlight and dissolved organic matter can further grow into visible Au granules under dark conditions in years.

Chinese Chemical Letters 31 (2020) 1970



Chromate separation by selective crystallization

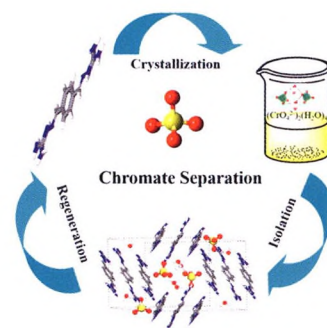
Xijian Chen^a, Xing Dai^a, Rongzhen Xie^a, Jie Li^a, Afshin Khayambashi^a, Lei Xu^b, Chuang Yang^a, Nannan Shen^a, Yaxing Wang^a, Linwei He^a, Yugang Zhang^a, Chengliang Xiao^b, Zhifang Chai^a, Shuao Wang^a

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A new paradigm to remove toxic chromate anions from aqueous solution by crystallization of chromate-water clusters with imine-linked guanidinium cationic ligands is introduced.

Chinese Chemical Letters 31 (2020) 1974



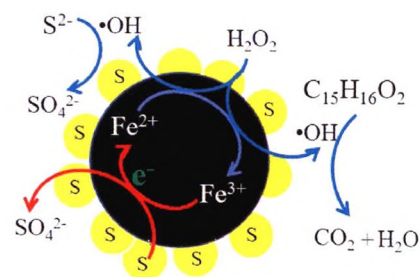
Mechanochemically sulfured FeS_{1.92} as stable and efficient heterogeneous Fenton catalyst

Chao Guo, Dongting Yue, Songling Wang, Xufang Qian, Yixin Zhao

School of Environmental Science and Engineering, Shanghai Jiao Tong University, Shanghai 200242, China

The sulfured mackinawite (FeS_{1.92}) exhibits high density active sites for activation of H₂O₂ to efficiently generate hydroxyl radicals to remediate organic waste under mild condition. Furthermore, this FeS_{1.92} based heterogeneous Fenton reactions is also highly sulfide resistance and show improved performance for degrading organic pollutants and S²⁻ species in a heterogeneous Fenton reaction.

Chinese Chemical Letters 31 (2020) 1978



Aptamer structure switch fluorescence anisotropy assay for aflatoxin B1 using tetramethylrhodamine-guanine interaction to enhance signal change

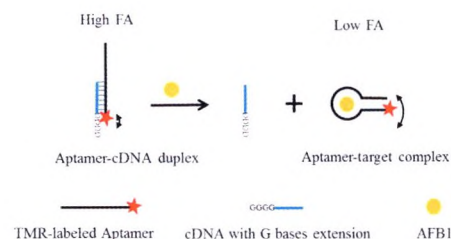
Yapiao Li^{a,b}, Qiang Zhao^{a,b}

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Aptamer fluorescence anisotropy (FA) assay for the detection of AFB1 is achieved by using TMR- labeled aptamer probe and the short complementary DNA (cDNA) containing added tandem G bases at the terminal. The TMR-G interaction restricts local rotation of TMR and causes high FA signal in duplex of cDNA and aptamer probe, while the presence of AFB1 induces formation of aptamer-AFB1 complex, causing low FA signal.

Chinese Chemical Letters 31 (2020) 1982



N-doped honeycomb-like porous carbon towards high-performance supercapacitor

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

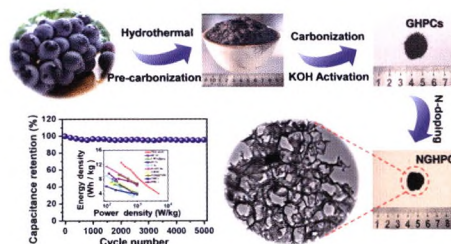
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^d Chemical Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN 37831, United States

We report a grape-based honeycomb-like porous carbon (GHPC) prepared by KOH activation and carbonization, followed by N-doping, which exhibits a capacitance of 275 F/g at 0.5 A/g in a three-electrode cell. Moreover, the NGHPC/NGHPC symmetric supercapacitor displays a high energy density of 12.6 Wh/kg, and excellent cycling stability of approximately 95.2% capacitance retention after 5000 cycles at 5 A/g.

Chinese Chemical Letters 31 (2020) 1986



High-efficiency organic solar cells with low voltage-loss of 0.46 V

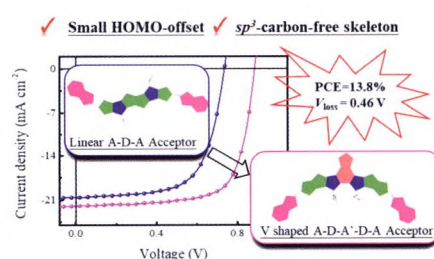
Zhi-Peng Yu^a, Xue Li^a, Chengliang He^a, Di Wang^a, Ran Qin^a, Guanqing Zhou^b, Zhi-Xi Liu^a, Thomas Rieks Andersen^a, Haiming Zhu^b, Hongzheng Chen^a, Chang-Zhi Li^a

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V-shaped electron acceptor, BTP-2Br enables more effective in exciton dissociation at near zero HOMO-offset, over those of linear acceptor, SN6-2Br in organic solar cells with PBDDT-TF polymer, herein yielding the power conversion efficiencies of 13.84% with low voltage-loss of 0.46 V in opaque device, and efficiency of 9.62% with an AVT of 20.1% in semitransparent devices.

Chinese Chemical Letters 31 (2020) 1991



Remarkable improvement of cyclic stability in Li-O₂ batteries using ruthenocene as a redox mediator

Cuicui Zhu^{a,b}, Yiping Wang^c, Ling Shuai^c, Yizhao Tang^{a,b}, Ming Qiu^c, Jian Xie^d, Jia Liu^e, Wen Wen^f, Hengquan Chen^{a,b}, Suifei Nan^{a,b}, Mei Dou^{a,b}, Qinggang He^{a,b,g}

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^c Institute of Nanoscience and Nanotechnology, College of Physical Science and Technology, Central China Normal University, Wuhan 430079, China

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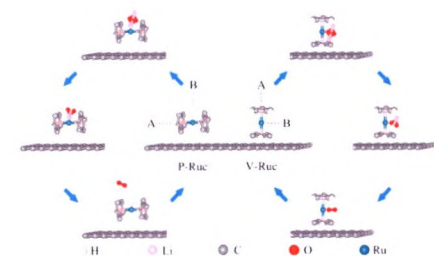
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^g Ningbo Research Institute, Zhejiang University, Ningbo 315100, China

The use of ruthenocene as a redox mediator reduces the charge voltage by 610 mV and prolongs the cycling life up to 83 cycles in a Li-O₂ battery with a ketjen black (KB) cathode. Based on the DFT calculation results, the A and B sites of P-Ruc are the most likely active sites for the charge process due to their smaller potential barriers.

Chinese Chemical Letters 31 (2020) 1997



Yolk-shell structured Fe@void@mesoporous silica with high magnetization for activating peroxydisulfate

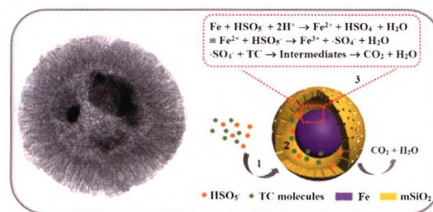
Bingqian Xu^a, Wan Jiang^a, Lianjun Wang^a, Binota Thokchom^b, Pengpeng Qiu^a, Wei Luo^a

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^b Indian Institute of Technology Guwahati, Guwahati 781039, India

A successive coating strategy followed by a subsequent hightemperature *in-situ* treatment has been employed for the preparation of yolk-shell structured Fe@void@mSiO₂ composites. Compared with commercial ZVI nanoparticles, the composite catalyst possesses much more excellent degradation activity for tetracycline (TC) in a wide pH range and rapid recovery via using an external magnetic field.

Chinese Chemical Letters 31 (2020) 2003



ZIF-67 derived hollow Ni-Co-Se nano-polyhedrons for flexible hybrid supercapacitors with remarkable electrochemical performances

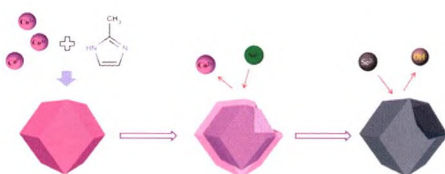
Guangmeng Qu^a, Xixi Zhang^a, Guotao Xiang^a, Yunrui Wei^a, Jiangmei Yin^a, Zonghua Wang^a, Xiaoli Zhang^b, Xijin Xu^a

^a School of Physics and Technology, University of Jinan, Ji'Nan 250022, China

^b State Centre for International Cooperation on Designer Low-Carbon & Environmental Materials, School of Materials Science and Engineering, Zhengzhou University, Zhengzhou 450001, China

A unique Ni-Co based bimetallic selenide with polyhedral structure was synthesized by ion exchange and selenation using the metal organic frameworks ZIF-67 as the sacrificial template. We assembled the flexible hybrid supercapacitor with the synthesized Ni-Co-Se nanopolyhedron as the positive electrode material, showing outstanding electrochemical performance and mechanical stability.

Chinese Chemical Letters 31 (2020) 2007



Unprecedented differences in the diamond nucleation density between carbon- and silicon-faces of 4H-silicon carbides

Bo Wang^a, Pitsiri Sukkaew^b, Guichen Song^a, Andreas Rosenkranz^c, Yunxiang Lu^a, Kazuhito Nishimura^d, Jia Wang^e, Jilei Lyu^a, Yang Cao^a, Jian Yi^a, Lars Ojamäe^b, He Li^a, Nan Jiang^a

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^b Department of Physics, Chemistry, and Biology, Linköping University, SE-581 83 Linköping, Sweden

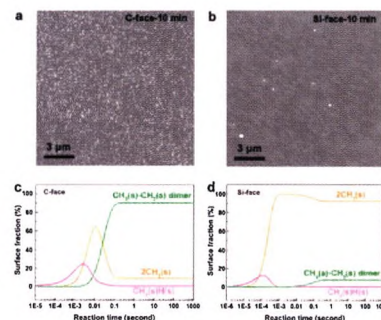
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^d Mechanical Systems Engineering, Kogakuin University, Tokyo 192-0015, Japan

^e Department of Mechanical and Materials Engineering, University of Nebraska-Lincoln, Lincoln, NE 68588, United States

The diamond nucleation density on carbon-face is higher by 2-3 orders of magnitude compared to silicon-face. Kinetic model simulations demonstrate that it is more difficult to form CH₂(s)-CH₂(s) dimers on silicon-faces than carbon-faces, resulting in much lower nucleation densities on silicon-faces.

Chinese Chemical Letters 31 (2020) 2013



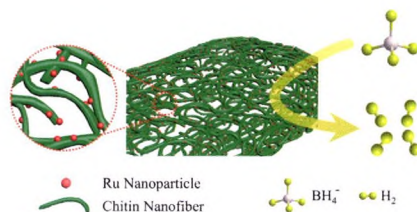
Ultrasmall Ru nanoparticles supported on chitin nanofibers for hydrogen production from NaBH₄ hydrolysis

Jiapeng Zhang, Fanzhen Lin, Lijing Yang, Zhaoyi He, Xiaoshan Huang, Dingwei Zhang, Hua Dong

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

Chitin-supported Ru catalysts were fabricated through a cheap and easy method. The fabricated catalysts showed excellent performance in catalyzing NaBH₄ hydrolysis.

Chinese Chemical Letters 31 (2020) 2019



Control of random self-assembly of pyrogallol[4]arene-based nanocapsule or framework

Kongzhao Su^{a,b}, Shunfu Du^{a,c}, Wenjing Wang^{a,b}, Daqiang Yuan^{a,b}

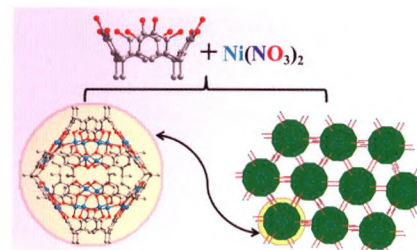
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^b University of the Chinese Academy of Sciences, Beijing 100049, China

^c College of Chemistry, Fuzhou University, Fuzhou 350116, China

The control of random self-assembly of discrete metal-organic nanocapsule (MONC) or MONC-based metal-organic framework (MOF) can be achieved by introducing pyridine and formic acid, respectively.

Chinese Chemical Letters 31 (2020) 2023



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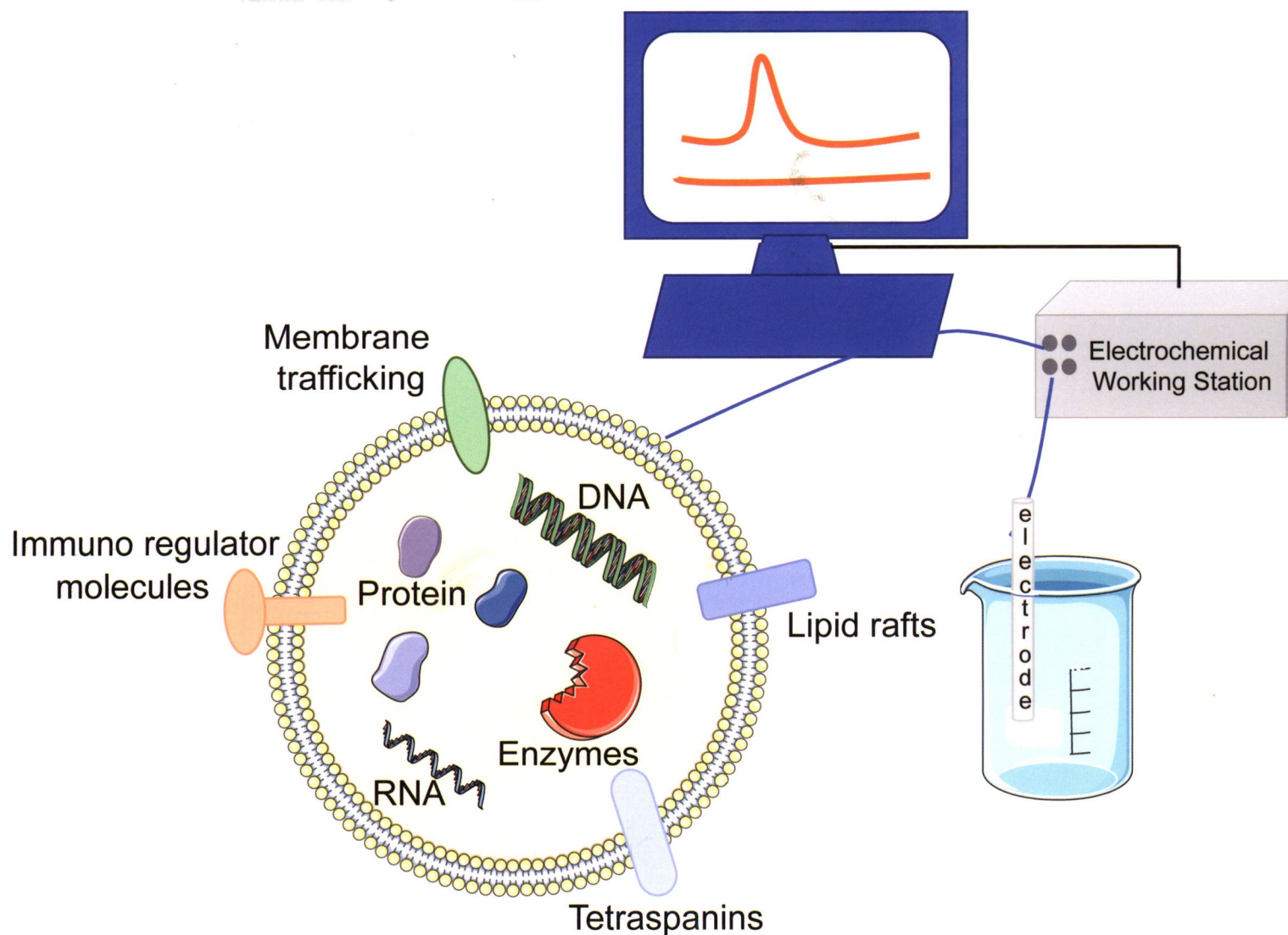
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