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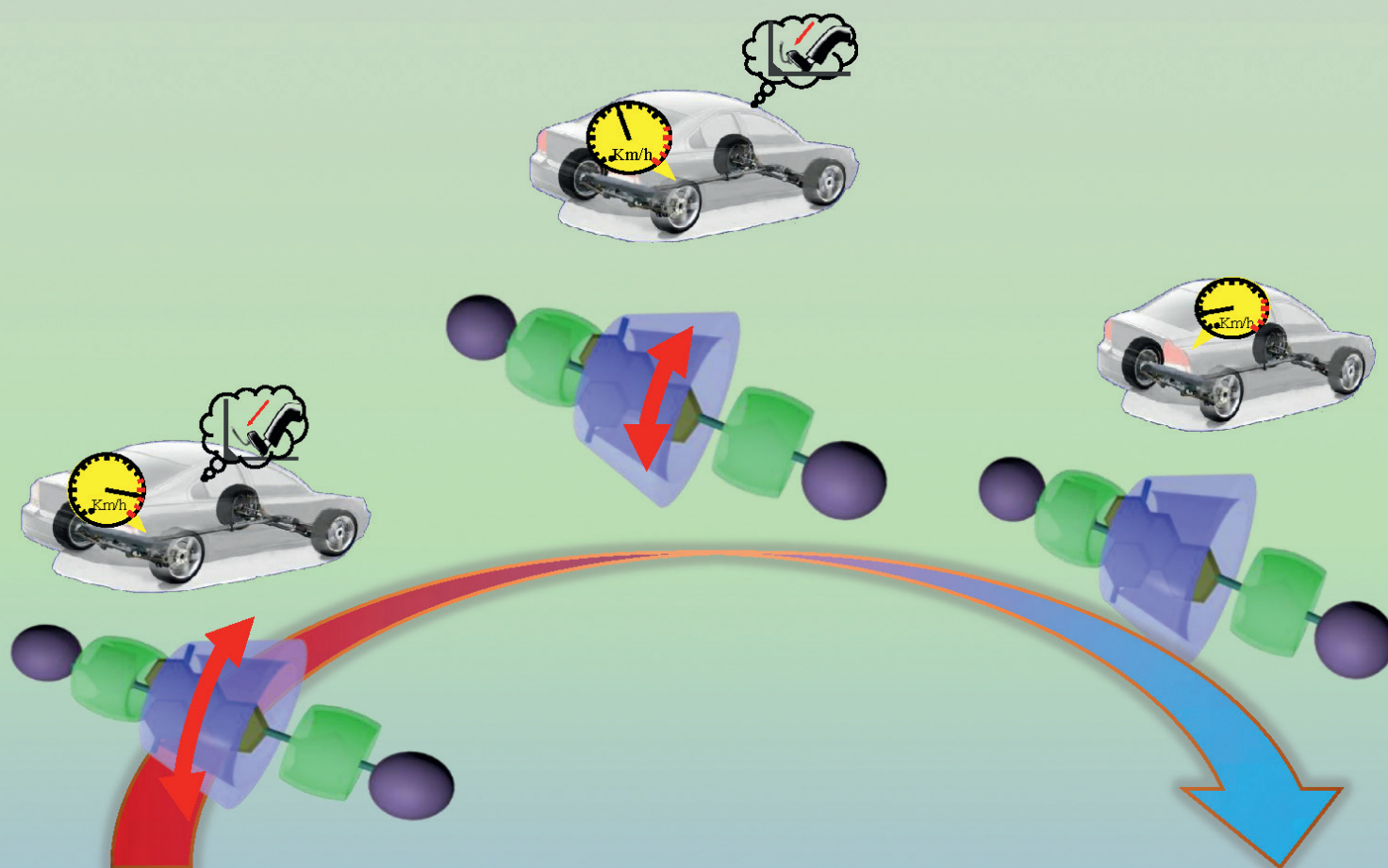
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Chinese Chemical Letters

| Volume 30 | Number 3 | MARCH 2019 |



Temperature-Variation

Provided by Prof. Cheng Yang's Group



COMMUNICATION

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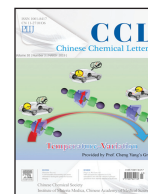
Chinese Chemical Society

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Graphical Abstracts/Chin Chem Lett 30 (2019) iii–xviii

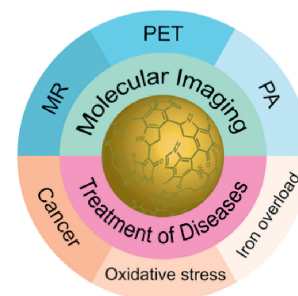
Review

Melanin-based nanoparticles in biomedical applications: From molecular imaging to treatment of diseases

Xinyu Wang^a, Jie Sheng^{a,b}, Min Yang^{a,b}^a Key Laboratory of Nuclear Medicine, Ministry of Health, Jiangsu Key Laboratory of Molecular Nuclear Medicine, Jiangsu Institute of Nuclear Medicine, Wuxi 214063, China^b The First Clinical Medical College, Nanjing Medical University, Nanjing 210000, China

The melanin-based nanoparticles preparation methods were summarized here. Biomedical applications of melanin-based nanoparticles were also reviewed, including molecular imaging (magnetic resonance, positron emission tomography, and photoacoustic imaging) and treatment of diseases (drug delivery, photothermal therapy, antioxidant therapy, and iron overload therapy).

Chinese Chemical Letters 30 (2019) 533



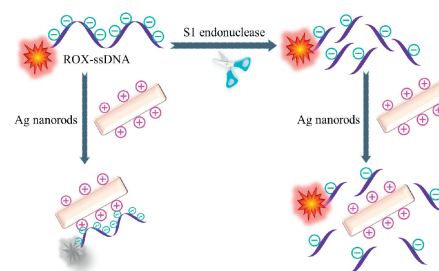
Communications

Facile and sensitive S1 endonuclease activity and inhibition assay using positively-charged Ag nanorods

Mei Li^a, Jia Chen^b, Jiaping Pan^a, Zuliang Huang^a, Hongdeng Qiu^b^a Science Experiment Center, Department of Pharmacy, Youjiang Medical College for Nationalities, Baise 533000, China^b CAS Key Laboratory of Chemistry of Northwestern Plant Resources and Key Laboratory for Natural Medicine of Gansu Province, Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, Lanzhou 730000, China

A facile and promising fluorescence strategy for the detection of S1 endonuclease activity and inhibition was established for the first time based on positively Ag nanorods (AgNRs) and negatively-charged ROX-labeled single-stranded DNA (ROX-ssDNA).

Chinese Chemical Letters 30 (2019) 541

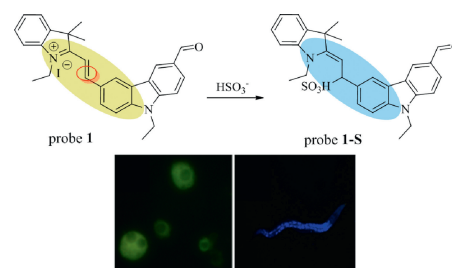


A carbazole-hemicyanine dye based ratiometric fluorescent probe for selective detection of bisulfite (HSO₃⁻) in cells and *C. elegans*

Keying Bi^a, Rui Tan^a, Ruiting Hao^b, Lanxi Miao^c, Yanqi He^c, Xianghua Wu^a, Junfeng Zhang^a, Rui Xu^b^a College of Chemistry and Chemical Engineering, Yunnan Normal University, Kunming 650500, China^b College of Energy and Environment Science, Yunnan Normal University, Kunming 650500, China^c College of Chemical Science and Technology, Yunnan University, Kunming 650091, China

A colorimetric and ratiometric fluorescent probe for selective detection of HSO₃⁻ based on the 1,4-nucleophilic addition reaction was successfully synthesized and applied to the detection of exogenous HSO₃⁻ in Hela cells and *C. elegans*.

Chinese Chemical Letters 30 (2019) 545



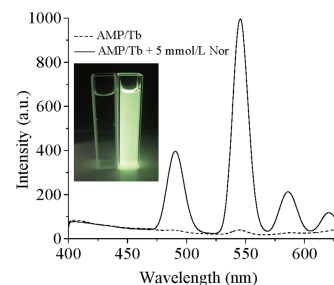
Rapid screening detection of fluoroquinolone residues in milk based on turn-on fluorescence of terbium coordination polymer nanosheets

Xin Xu, Lixia Feng, Jie Li, Ping Yuan, Jiangaog Feng, Lijun Wei, Xianglei Cheng

Jiangxi Province Key Laboratory of Preventive Medicine, School of Public Health, Nanchang University, Nanchang 330006, China

Trace fluoroquinolone residues in milk could be detected based on turn-on fluorescence of AMP/Tb CPNSs. It might provide a new platform for the rapid detection of antibiotic pollutants with the advantages of simple sample pretreatment processes and excellent selectivity.

Chinese Chemical Letters 30 (2019) 549



On-line trapping/capillary hydrophilic-interaction liquid chromatography/mass spectrometry for sensitive determination of RNA modifications from human blood

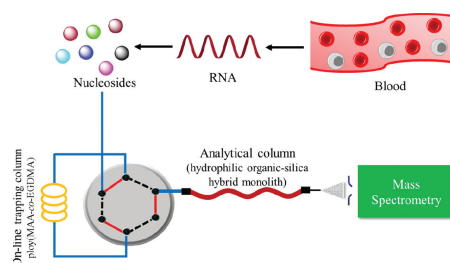
Chubo Qi^{a,b}, Hanpeng Jiang^a, Jun Xiong^a, Bifeng Yuan^a, Yuqi Feng^a

^a Key Laboratory of Analytical Chemistry for Biology and Medicine (Ministry of Education), Department of Chemistry, Wuhan University, Wuhan 430072, China

^b Hubei Cancer Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan 430079, China

With the developed on-line trapping/cHILIC/MS analytical platform, the detection limits of RNA modifications of m⁶A and 5-mC can reach to 0.06 fmol and 0.10 fmol. We then investigated the contents of m⁶A and 5-mC in human blood RNA from healthy persons at the age of 6–14 and 60–68 years. Our results showed that both m⁶A and 5-mC contents were significantly decreased in elder persons, suggesting the RNA modifications of m⁶A and 5-mC are correlated to aging.

Chinese Chemical Letters 30 (2019) 553



Sensing carboxylesterase 1 in living systems by a practical and isoformspecific fluorescent probe

Lele Ding^a, Zhenhao Tian^a, Jie Hou^{b,c}, Tongyi Dou^d, Qiang Jin^b, Dandan Wang^b, Liwei Zou^b, Yadi Zhu^b, Yunqing Song^b, Jingnan Cui^a, Guangbo Ge^b

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

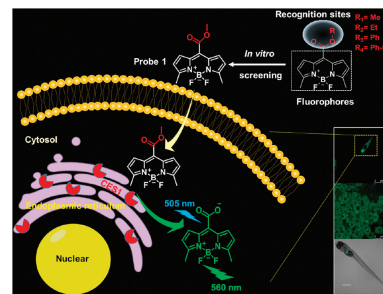
^b Institute of Interdisciplinary Integrative Medicine Research, Shanghai University of Traditional Chinese Medicine, Shanghai 201203, China

^c Biotechnology Department, College of Basic Medical Sciences, Dalian Medical University, Dalian 116044, China

^d School of Life Science and Medicine, Dalian University of Technology, Panjin 124221, China

A practical and isoform-specific fluorescent probe based on BIDIPY dye have been designed, synthesized and well characterized for sensing CES1 activities in various biological systems such as living cells, tissues and zebrafish.

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A red-emitting water-soluble fluorescent probe for biothiol detection with a large Stokes shift

Lei Yang^a, Haiqing Xiong^a, Yuanan Su^a, Huihui Tian^a, Xingjiang Liu^c, Xiangzhi Song^{a,b}

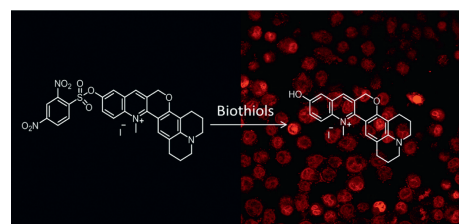
^a College of Chemistry & Chemical Engineering, Central South University Changsha 410083, China

^b Key Laboratory of Hunan Province for Water Environment and Agriculture Product Safety, Changsha 410083, China

^c College of Chemistry & Molecular Engineering, Zhengzhou University, Zhengzhou 450001, China

A highly water soluble fluorescent probe was developed for sensitive and selective detection of biothiols with a red emission and a large Stokes shift. The probe was successfully applied to detect biothiols both in aqueous solution and in living cells.

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Design and synthesis of the novel branched fluorinated surfactant intermediates with $\text{CF}_3\text{CF}_2\text{CF}_2\text{C}(\text{CF}_3)_2$ group

Ding Zhang^{a,b}, Min Sha^c, Renming Pan^a, Xiangyang Lin^a, Ping Xing^b, Biao Jiang^{a,b}

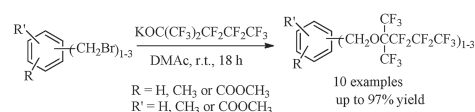
^a School of Chemical Engineering, Nanjing University of Science and Technology, Nanjing 210094, China

^b CAS Key Laboratory of Synthetic Chemistry of Natural Substances, Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, Shanghai 200032, China

^c School of Management Science & Engineering, Nanjing University of Finance & Economics, Nanjing 210046, China

Here we reported a novel and efficient method for the synthesis of the critical intermediates of branched fluorinated surfactants with $\text{CF}_3\text{CF}_2\text{CF}_2\text{C}(\text{CF}_3)_2$ group using HFPD as starting material. The reaction conditions were mild and easy to handle, which was promisingly applied to the industrial production.

Chinese Chemical Letters 30 (2019) 566



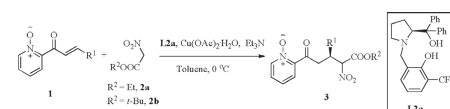
Copper(II)-catalyzed enantioselective conjugate addition of nitro esters to 2-enoyl-pyridine N-oxides

Jianan Sun, Yanan Li, Yang Gui, Youguo Xu, 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

A highly enantioselective Michael addition of nitro esters to 2-enoyl-pyridine N-oxides was developed by using chiral copper catalysts. The Michael addition products can be obtained in high yields and with up to 96% ee.

Chinese Chemical Letters 30 (2019) 569



A self-assembly/disassembly two-photo ratiometric fluorogenic probe for bacteria imaging

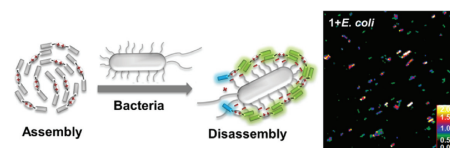
Shuangshuang Long^{a,b}, Qinglong Qiao^a, Lu Miao^a, Zhaochao Xu^a

^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 100039, China

A fluorogenic probe for bacteria imaging was reported. The binding with anionic bacterial surfaces disassembled the self-assembly probe to turn-on the fluorescence and shift pyrene monomer/excimer ratiometric signals.

Chinese Chemical Letters 30 (2019) 573



Temperature-driven braking of γ -cyclodextrin-curcubit[6]uril-cowheeled [4]rotaxanes

Ran Liu^a, Yuxue Zhang^a, Wanhua Wu^a, Wenting Liang^{a,b}, Qinfei Huang^a, Xingke Yu^a, Wei Xu^a, Dayang Zhou^c, Narayanan Selvapalam^d, Cheng Yang^a

^a Key Laboratory of Green Chemistry & Technology, College of Chemistry, State Key Laboratory of Biotherapy, West China Medical Center, and Healthy Food Evaluation Research Center, Sichuan University, Chengdu 610064, China

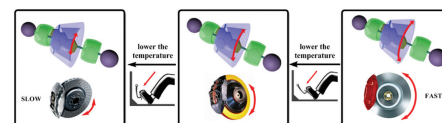
^b Institute of Environmental Sciences, Department of Chemistry, Shanxi University, Taiyuan 030006, China

^c Comprehensive Analysis Center, ISIR, Osaka University, Mihogaoka, Ibaraki 567-0047, Japan

^d Center for Supramolecular Chemistry, International Research Center and Department of Chemistry, Kalasalingam University, Krishnankoil, Tamil Nadu 626126, India

A capping moiety, playing a role of the brake, slowed down the rotation speed of the cyclodextrin of a cyclodextrin-curcubit[6]uril-cowheeled [3]rotaxane. Lowering the temperature further stopped the rotation at the NMR timescale.

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The toxicity of hydroxylated and carboxylated multi-walled carbon nanotubes to human endothelial cells was not exacerbated by ER stress inducer

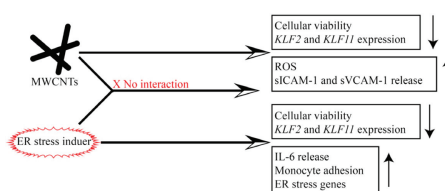
Zhen Li^{a,b}, Ting Liu^{a,b}, Jimin Long^b, Yang Wu^a, Biao Yan^a, Ping Ma^a, Yi Cao^b

Laboratory of Environment-immunological and Neurological Diseases, School of Basic Medical Sciences, Hubei University of Science and Technology, Xianning 437100, China

b Key Laboratory of Environment-Friendly Chemistry and Application of Ministry of Education, Laboratory of Biochemistry, College of Chemistry, Xiangtan University, Xiangtan 411105, China

The toxicity of hydroxylated or carboxylated MWCNTs to human endothelial cells was modest, and the toxicity was not exacerbated by ER stress inducer.

Chinese Chemical Letters 30 (2019) 582



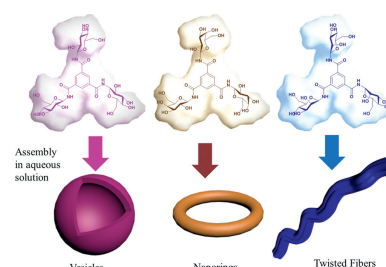
The effect of monosaccharides on self-assembly of benzenetricarboxamides

Jue Wang, Wenjing Qi, Guosong Chen

The State Key Laboratory of Molecular Engineering of Polymers and Department of Macromolecular Science, Fudan University, Shanghai 200438, China

In this work, three common monosaccharides, glucose, galactose and mannose, are employed to investigate the effect of monosaccharide on the self-assembly of benzenetricarboxamide (BTA) core-containing molecules. Based on the effect of monosaccharides, three benzenetricarboxamide derivatives aggregate into different ordered structures, i.e., vesicles, nanorings and fibers. When alanine linkers are introduced to these molecules between the core and the monosaccharide, all monosaccharide-based BTAs aggregate into irregular morphologies, meanwhile they become similar with the increase of the length of alanine linkers indicating the disappearance of the monosaccharide effects.

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New carbazole-substituted siloles for the fabrication of efficient non-doped OLEDs

Yi Xiong^a, Jiajie Zeng^a, Bin Chen^a, Jacky W.Y. Lam^c, Zujin Zhao^a, Shuming Chen^b, Ben Zhong Tang^{a,c}

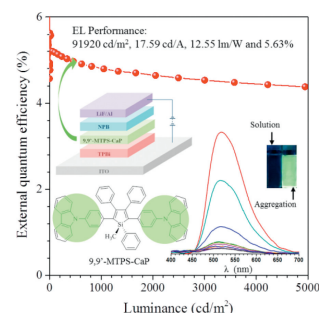
a State Key Laboratory of Luminescent Materials and Devices, Center for Aggregation-Induced Emission, South China University of Technology, Guangzhou 510640, China

b Department of Electrical and Electronic Engineering, South University of Science and Technology of China, Shenzhen 518055, China

c Department of Chemistry, Hong Kong Branch of Chinese National Engineering Research Center for Tissue Restoration and Reconstruction, The Hong Kong University of Science & Technology, Hong Kong, China

New aggregation-induced emission molecules of carbazole-substituted siloles are prepared, based on which efficient non-doped OLEDs are fabricated, offering high external quantum efficiencies of up to 5.63%.

Chinese Chemical Letters 30 (2019) 592



Ligand-free nickel-catalyzed Kumada couplings of aryl bromides with *tert*-butyl Grignard reagents

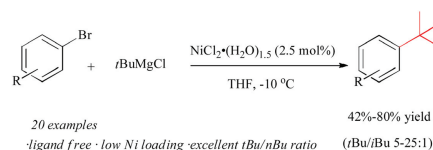
Zhengan Wu^a, Tengda Si^b, Guangqing Xu^b, Bin Xu^a, Wenjun Tang^b

a Department of Chemistry, Shanghai University, Shanghai 200444, China

b State Key Laboratory of Bio-Organic and Natural Products Chemistry, Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, Shanghai 200032, China

A ligand-free nickel-catalyzed Kumada cross-coupling of aryl bromides and *tert*-butyl Grignard reagents led to the formation of a series of *tert*-butyl aryls in moderate to good yields, excellent *t*Bu/*i*Bu ratios, and good functional group compatibility. A radical coupling process is indicated and a mechanism with a Ni(I)-Ni(III) catalytic cycle is proposed.

Chinese Chemical Letters 30 (2019) 597



Strong π - π stacking interactions led to the mis-assignment of dimer emissions to the monomers of 1-acetylpyrene

Shuangshuang Long^{a,c}, Weijie Chi^b, Lu Miao^a, Qinglong Qiao^a, Xiaogang Liu^b, Zhaochao Xu^a

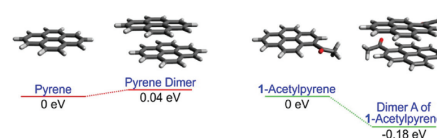
^a CAS Key Laboratory of Separation Science for Analytical Chemistry, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian 116023, China

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

^c University of Chinese Academy of Sciences, Beijing 100039, China

Both experimental and computational studies showed owing to strong π - π stacking interactions, 1-acetylpyrene mainly exists in dimers and molecular aggregates even at low concentrations, which led to the mis-assignment of its monomer emission peaks.

Chinese Chemical Letters 30 (2019) 601



Ni/Co-based metal-organic frameworks as electrode material for high performance supercapacitors

Shaofei Zhao^a, Lizhen Zeng^b, Gao Cheng^a, Lin Yu^a, Huaqiang Zeng^c

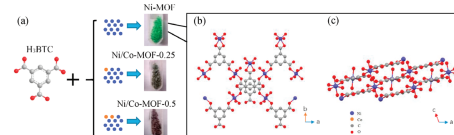
^a School of Chemical Engineering & Light Industry, Guangdong University of Technology, Guangzhou 510006, China

^b Analysis and Testing Center, South China Normal University, Guangzhou 510006, China

^c Institute of Bioengineering and Nanotechnology, Singapore 138669, Singapore

A novel bimetallic Ni/Co-based metal-organic framework (Ni/Co-MOF) was successfully synthesized via a simple solvothermal method, which used as electrode material for high performance supercapacitors.

Chinese Chemical Letters 30 (2019) 605



From sand to fast and stable silicon anode: Synthesis of hollow Si@void@C yolk-shell microspheres by aluminothermic reduction for lithium storage

Zhengwei Zhou^a, Long Pana, Yitao Liu^b, Xiaodong Zhu^c, Xuming Xie^a

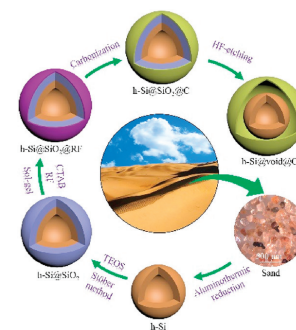
^a Key Laboratory of Advanced Materials (MOE), Department of Chemical Engineering, Tsinghua University, Beijing 100084, China

^b Innovation Center for Textile Science and Technology, Donghua University, Shanghai 200051, China

^c Academy of Fundamental and Interdisciplinary Sciences, Harbin Institute of Technology, Harbin 150080, China

We report aluminothermic reduction enabled synthesis of hollow silicon microspheres from sand, which are further encaged in a carbon shell, resulting in hollow Si@void@C yolk-shell microspheres. The hollow Si@void@C yolk-shell microspheres exhibit superior long-term cyclability and rate capability, which lay a basis for the development of high-performance silicon anode of advanced LIBs.

Chinese Chemical Letters 30 (2019) 610



Insight into room-temperature catalytic oxidation of NO by CrO₂(110): A DFT study

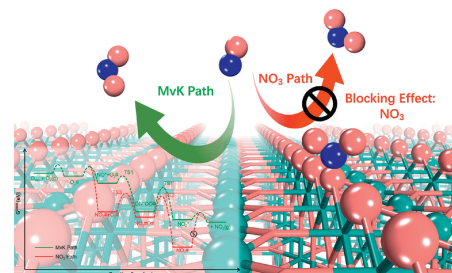
Jiamin Jin^a, Jianfu Chen^a, Haifeng Wang^a, Peijun Hu^{a,b}

^a Key Laboratories for advanced Materials, Centre for Computational Chemistry and Research Institute of Industrial Catalysis, School of Chemistry and Molecular Engineering, East China University of Science and Technology, Shanghai 200237, China

^b School of Chemistry and Chemical Engineering, Queen's University Belfast, Belfast BT9 5AG, UK

The first-principles DFT calculations together with microkinetic analysis reveal the complex catalytic mechanism of low-content NO oxidation on CrO₂(110) at room temperature. It quantitatively makes clear that CrO₂(110) can exhibit considerable activity with the Mars-van-Krevelen mechanism preferred, and the nitrate species serves as the key poisoning species.

Chinese Chemical Letters 30 (2019) 618



Improved oxygen reduction reaction via a partially oxidized Co-CoO catalyst on N-doped carbon synthesized by a facile sand-bath method

Libing Hu^a, Feng Yu^a, Huifang Yuan^a, Gang Wang^{a,b,c}, Mincong Liu^a, Lina Wang^a, Xueyan Xue^a, Banghua Peng^a, Zhiqun Tian^d, Bin Dai^a

^a Key Laboratory for Green Processing of Chemical Engineering of Xijiang Bingtuan, School of Chemistry and Chemical Engineering, Shihezi University, Shihezi 832003, China

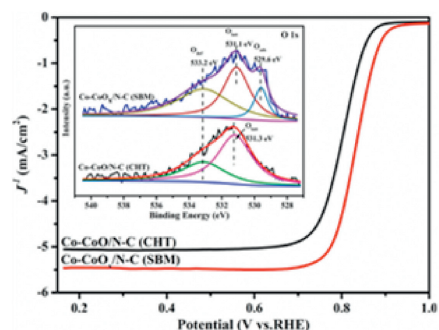
^b Key Laboratory of Materials-Oriented Chemical Engineering of Xijiang Uygur Autonomous Region, Shihezi 832003, China

^c Engineering Research Center of Materials-Oriented Chemical Engineering of Xinjiang Production and Construction Corps, Shihezi 832003, China

^d Collaborative Innovation Center of Renewable Energy Materials, Guangxi University, Nanning 530004, China

Partially oxidized Co-CoO on N-doped carbon was synthesized via a facile sand-bath route. Co-CoO_x/N-C (SBM) exhibited much O_{lat} sites and catalytic activity of oxygen reduction action.

Chinese Chemical Letters 30 (2019) 624



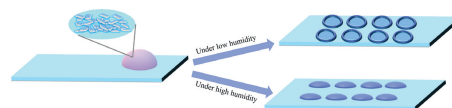
Preferential deposition of cyanometallate coordination polymer nanoplates through evaporation of droplets

Yanyi Zhao, Xin Li, Ming Hu

School of Physics and Materials Science, East China Normal University, Shanghai 200241, China

We reported a room-temperature method to deposit self-adhesive coordination polymers nanoplates on glass slides preferentially.

Chinese Chemical Letters 30 (2019) 630



NiPt nanoparticles supported on CeO₂ nanospheres for efficient catalytic hydrogen generation from alkaline solution of hydrazine

Yana Men^a, Jun Su^b, Xiangli Wang^c, Ping Cai^a, Gongzhen Cheng^a, Wei Luo^a

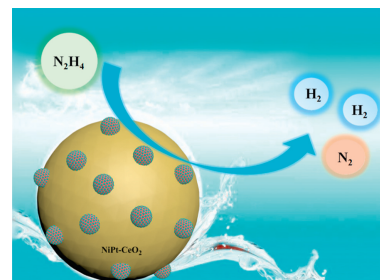
^a College of Chemistry and Molecular Sciences, Wuhan University, Wuhan 430072, China

^b Wuhan National Laboratory for Optoelectronics, Huazhong University of Science and Technology, Wuhan 430074, China

^c No. 1 Middle School Affiliated to Central China Normal University, Wuhan 430075, China

Thanks to the strong electronic interaction and support-metal interaction between NiPt and spherical CeO₂, the obtained Ni₃Pt₃-CeO₂ catalyst exhibits superior catalytic performance for hydrogen generation from alkaline solution of hydrazine at room temperature.

Chinese Chemical Letters 30 (2019) 634



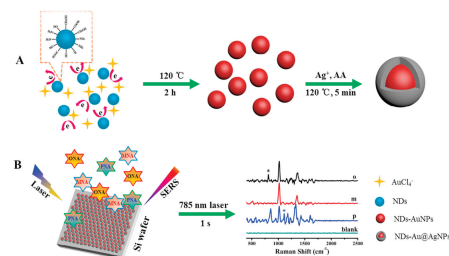
Core (Au)-shell (Ag) structure nitrogen dots for the recognition of nitroaniline isomers by surface-enhanced Raman scattering

Jiani Yang, Ling Xia, Zhenhua Lin, Zhijiao Tang, Gongke Li, Yuling Hu

School of Chemistry, Sun Yat-sen University, Guangzhou 510275, China

A facile synthesis method for NDs-Au@AgNPs SERS substrate using Au seeds prepared by nitrogen-rich quantum dots (NDs) as reducing agent and stabilizer was developed for nitroaniline isomers recognition by surface-enhanced Raman scattering.

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Preparation of polar group derivative β -cyclodextrin bonded hydride silica chiral stationary phases and their chromatography separation performances

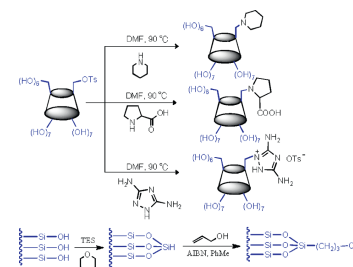
Baojing Zhao^a, Lan Li^a, Yuting Wang^a, Zhiming Zhou^{a,b}

^a School of Chemistry and Chemical Engineering, Beijing Institute of Technology, Beijing 100081, China

^b State Key Laboratory of Explosion Science & Technology, Beijing Institute of Technology, Beijing 100081, China

Three new polar group-substituted β -cyclodextrin derivatives were synthesized and they covalent bonded to hydride silica to obtain chiral stationary phases. Their separation results of 35 chiral pyrrolidine compounds were also presented and discussed.

Chinese Chemical Letters 30 (2019) 643



Speciation of organomercury compounds by capillary electrophoresis with pre-column derivatization and on-line stacking

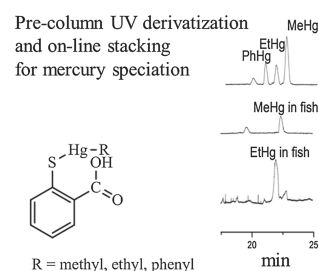
Dandan Cao^a, Yongguang Yin^{a,b}, Bin He^{a,b}

^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 100049, China

A simple capillary electrophoresis method was developed to separate and quantify methylmercury, ethylmercury, and phenylmercury with the enhancement of pre-column derivatization and on-line stacking.

Chinese Chemical Letters 30 (2019) 650



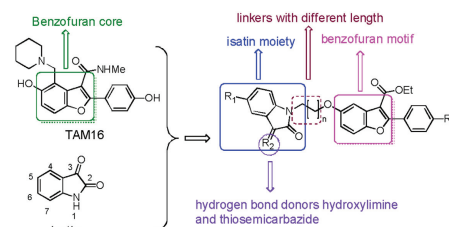
Benzofuran-isatin-hydroxylimine/thiosemicarbazide hybrids: Design, synthesis and *in vitro* anti-mycobacterial activity evaluation

Yaohuan Zhang, Ruo Wang, Tesen Zhang, Weitao Yan, Yihong Chen, Yanping Zhang, Muyang Zhou

College of Chemistry, Fuzhou University, Fuzhou 350116, China

A series of novel benzofuran-isatin-hydroxylimine/-thiosemicarbazide hybrids were designed, synthesized and evaluated for their *in vitro* anti-TB activities against drug-sensitive MTB H₃₇Rv and MDR-TB isolates as well as cytotoxicity. All benzofuran-isatin-hydroxylimine/-thiosemicarbazide hybrids exhibited considerable *in vitro* anti-mycobacterial activities against the tested three MTB strains, and all of them also showed acceptable cytotoxicity. The most active hybrid **7f** was >4.8 and >51 folds more potent than the first line anti-TB agents RIF and INH against both drug-sensitive MTB H₃₇Rv and MDR-TB isolates, respectively. The results demonstrated the potential utility of benzofuran-isatin-hydroxylimine/-thiosemicarbazide hybrids as anti-TB agents.

Chinese Chemical Letters 30 (2019) 653



α -Glucosidase immobilization on functionalized Fe₃O₄ magnetic nanoparticles for screening of enzyme inhibitors

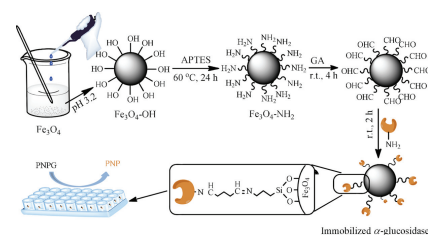
Guorong Cheng^{a,b}, Junpeng Xing^a, Zifeng Pi^a, Shu Liu^a, Zhiqiang Liu^a, Fengrui Song^a

^a National Center of Mass Spectrometry in Changchun & Jilin Province Key Laboratory of Chinese Medicine Chemistry and Mass Spectrometry, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, Changchun 130022, China

^b University of Science and Technology of China, Hefei 230029, China

α -Glucosidase was stereoscopically immobilized on the surface of Fe₃O₄ magnetic nanoparticles, which was modified with APTES, using GA as a cross-linker. This established method had a broad application prospect for screening of enzyme inhibitors.

Chinese Chemical Letters 30 (2019) 656



Green synthesis of gold nanoclusters using papaya juice for detection of L-lysine

Tian Yu^{a,c}, Chengnan Xu^{a,c}, Juan Qiao^{a,b}, Rongyue Zhang^c, Li Qj^{a,b}

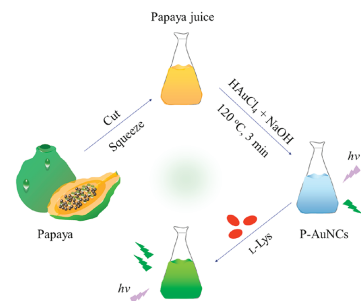
^a Beijing National Laboratory of Molecular Sciences, Key Laboratory of Analytical Chemistry for Living Bio-systems, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China

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

^c Beijing Institute of Petro-chemical Technology, Beijing 102617, China

P-AuNCs was rapidly synthesized, while papaya juice served as a capping and reducing agent. Due to the surface electron density increase-induced fluorescence enhancing principle, the prepared fluorescent probe provided high selectivity and sensitivity for monitoring L-lysine in human urines.

Chinese Chemical Letters 30 (2019) 660



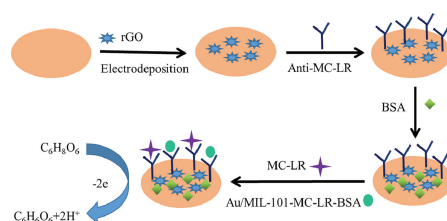
A competitive microcystin-LR immunosensor based on Au NPs@metal-organic framework (MIL-101)

Kunlei Zhang, Kun Dai, Ruyan Bai, Yuchan Ma, Yan Deng, Delei Li, Xi Zhang, Rong Hu, Yunhui Yang

College of Chemistry and Chemical Engineering, Yunnan Normal University, Kunming 650500, China

A porous metal organic frameworks (MOFs) material (MIL-101) based on trivalent chromium skeleton were synthesized by hydrothermal synthesis method, and loaded with Au nanoparticles (Au NPs) to prepare Au NPs@MIL-101 composite materials which were used as a marker to label anti microcystin-LR (Anti-MC-LR). The composite materials have strong catalytic properties to the oxidation of ascorbic acid. Anti-MC-LR was immobilized on glassy carbon electrode surface using electrodeposition graphene oxide (GO) as a fixed matrix to construct a competitive microcystin-LR immunosensor.

Chinese Chemical Letters 30 (2019) 664



Synthesis, biological activities and 3D-QSAR studies of (R)-2-phenyl-4,5-dihydrothiazole-4-carboxamide derivatives containing a sulfur ether moiety

Jingbo Liu^a, Fengyun Li^b, Yuanhong Wang^a, Haoxuan Zhang^a, Jingyue Dong^c, Pengwei Sun^c, Yuxin Li^c, Zhengming Li^c

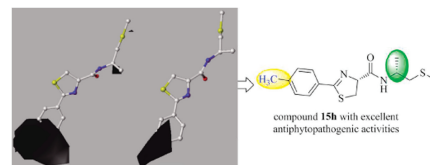
^a College of Horticulture and Landscape Architecture, Tianjin Agricultural University, Tianjin 300384, China

^b College of Chinese Materia Medica, Tianjin University of Traditional Chinese Medicine, Tianjin 300193, China

^c State Key Laboratory of Elemento-Organic Chemistry, Research Institute of Elemento-Organic Chemistry, Collaborative Innovation Center of Chemical Science and Engineering (Tianjin), College of Chemistry, Nankai University, Tianjin 300071, China

A series of (R)-2-phenyl-4,5-dihydrothiazole-4-carboxamide derivatives containing a sulfur ether moiety were designed, synthesized, and tested for their antifungal activities against several phytopathogenic fungi. The established CoMSIA model could predict the antifungal activity.

Chinese Chemical Letters 30 (2019) 668



Cell-imprinted polydimethylsiloxane for the selective cell adhesion

Lukuan Liu^{a,b,c}, Kaiguang Yang^b, Zhongpeng Dai^b, Zhen Liang^b, Lihua Zhang^b, Xiaojun Peng^a, Yukui Zhang^b

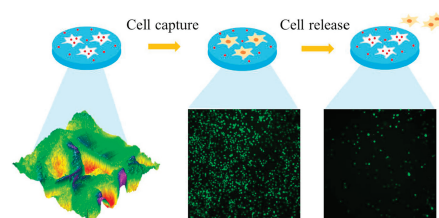
^a State Key Laboratory of Fine Chemicals, Dalian University of Technology, Dalian 116024, China

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

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

A cell-patterned substrate with aptamer functionalization was prepared, which holds promise in selective cell isolation fields such as the isolation of the circulating tumor cells.

Chinese Chemical Letters 30 (2019) 672



Two-step derivatization and mass spectral distinction of α 2,3 and α 2,6 sialic acid linkages on *N*-glycans by MALDI-TOF

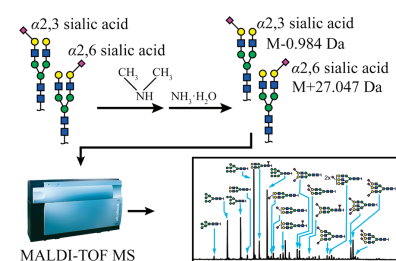
Xiaoman Zhou^a, Shang Yang^a, Ganglong Yang^a, Zengqi Tan^b, Feng Guan^{a,b}

^a The Key Laboratory of Carbohydrate Chemistry and Biotechnology, Ministry of Education, School of Biotechnology, Jiangnan University, Wuxi 214122, China

^b Joint International Research Laboratory of Glycobiology and Medicinal Chemistry, College of Life Science, Northwest University, Xi'an 710069, China

Sialic acid linkages on *N*-glycans were distinguished by MALDI-TOF MS after two steps derivatization by dimethylamine and ammonium hydroxide. By using this method, more than 20 kinds of sialic acid with detailed linkage information were detected on A549 cells.

Chinese Chemical Letters 30 (2019) 676



Cobalt and nitrogen codoped porous carbon as superior bifunctional electrocatalyst for oxygen reduction and hydrogen evolution reaction in alkaline medium

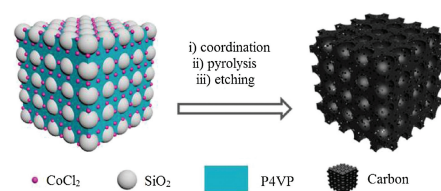
Xiaoxia Chen^a, Xiangjun Zhen^b, Hongyu Gong^b, Le Li^a, Jianwei Xiao^a, Zhi Xu^a, Deyue Yan^a, Guyu Xiao^a, Ruizhi Yang^b

^a School of Chemistry and Chemical Engineering, State Key Laboratory of Metal Matrix Composites, Shanghai Jiao Tong University, Shanghai 200240, China

^b College of Physics, Optoelectronics and Energy & Collaborative Innovation Center of Suzhou Nano Science and Technology, Soochow University, Suzhou 215006, China

Metal (cobalt)/nitrogen codoped carbon was first fabricated by pyrolysis of coordinated "noncarbonizable" polymer as bifunctional catalyst for ORR and HER, which showed better electrocatalytic performances than most bifunctional doped carbon catalysts in alkaline electrolyte.

Chinese Chemical Letters 30 (2019) 681



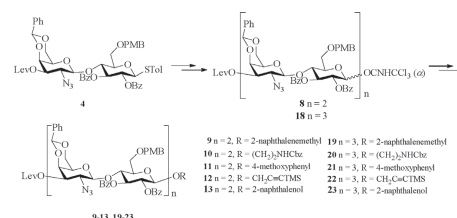
An efficient and facile approach for the construction of chondroitin sulfate E oligosaccharide precursors

Guangyan Zhang, Qi Liu, Shuang Yang, Zhehui Zhao, Pingsheng Lei

State Key Laboratory of Bioactive Substance and Function of Natural Medicines, Beijing Key Laboratory of Active Substances Discovery and Drug Ability Evaluation, Department of Medicinal Chemistry, Institute of Materia Medica & Peking Union Medical College, Chinese Academy of Medical Sciences, Beijing 100050, China

A facile and efficient approach has been developed for the construction of CS-E oligosaccharide precursors. In this approach, a disaccharide unit was first elongated to tetra- and hexasaccharides, followed by the introduction of anomeric groups via glycosylation couplings.

Chinese Chemical Letters 30 (2019) 686



Facile preparation and characterization of novel oleanane-type triterpene functionalized β -cyclodextrin conjugates

Pingxuan Jiao^a, Shouxin Wang^{a,c}, Shuobin Liang^a, Man Li^a, Qianqian Gao^a, Dezhong Ji^a, Yingying Chen^a, Haiwei Li^a, Fuxiang Ran^a, Yongmin Zhang^d, Lihe Zhang^a, Demin Zhou^a, Sulong Xiao^{a,b}

^a State Key Laboratory of Natural and Biomimetic Drugs, School of Pharmaceutical Sciences, Peking University, Beijing 100191, China

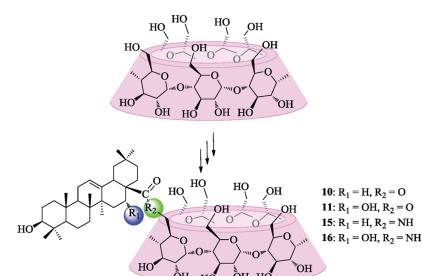
^b State Key Laboratory of Phytochemistry and Plant Resources in West China, Kunming Institute of Botany, Chinese Academy of Sciences, Kunming 650201, China

^c School of Pharmacy, Jining Medical University, Rizhao 276826, China

^d Sorbonne Université, Institut Parisien de Chimie Moléculaire, CNRS UMR 8232, 4 place Jussieu, 75005 Paris, France

Four water-soluble β -CD-pentacyclic triterpene conjugates were synthesized via ester and amide linkages. All the conjugates showed lower hydrophobicity (AlogP) than their parent

Chinese Chemical Letters 30 (2019) 690



A comparative study of assembly and disassembly process of dimeric and monomeric cyanine dyes with DNA templates

Lijia Yu^a, Qianfan Yang^b, Yalin Tang^c

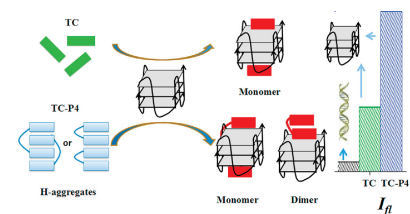
^a National Center of Occupational Safety and Health, State Administration of Work Safety, Beijing 102308, China

^b College of Chemistry, Sichuan University, Chengdu 610064, China

^c Beijing National Laboratory for Molecular Science, Center for Molecular Science, State Key Laboratory for Structural Chemistry for Unstable and State Species, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China

H-aggregates of dimeric cyanine dyes (TC-P4) formed in PBS could be disassembled by G-quadruplex into dimer and/or monomer, resulting in higher fluorescent selectivity than its corresponding monomer (TC).

Chinese Chemical Letters 30 (2019) 694



Bioinspired manganese complexes catalyzed epoxidation for the synthesis of the epoxyketone fragment of carfilzomib

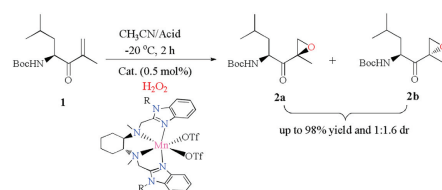
Bin Qiu^{a,b}, Chungu Xia^a, Wei Sun^a

^a 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

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

We report herein an efficient catalytic epoxidation reaction for the synthesis of epoxyketone (*tert*-butyl ((*S*)-4-methyl-1-((*R*)-2-methyloxiran-2-yl)-1-oxopentan-2-yl)carbamate), which is an important synthetic intermediate of carfilzomib.

Chinese Chemical Letters 30 (2019) 698



Palladium-catalyzed late-stage *mono*-arylation of the fully substituted pyrazoles *via* aromatic C–H bond activation

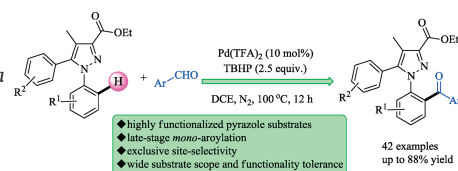
Miao-Miao Chen^a, Ling-Yan Shao^a, Li-Jun Lun^b, Yu-Liang Wu^b, Xiao-Pan Fu^a, Ya-Fei Ji^a

^a School of Pharmacy, East China University of Science & Technology, Shanghai 200237, China

^b Shandong Keyuan Pharmaceutical Co. Ltd., Shandong Shanghe Economic Development Zone, Ji'nan 251601, China

A Pd-catalyzed late-stage arylation of 4-methyl-1,5-diaryl-1*H*-pyrazole-3-carboxylates has been developed *via* direct Csp²–H bond activation with exclusive site-selectivity, broad substrate scope and good functional group tolerance.

Chinese Chemical Letters 30 (2019) 702



Low-molecular-weight photoresponsive supramolecular hydrogel based on a dicationic azobenzene-bridged pyridinium hydrogelator

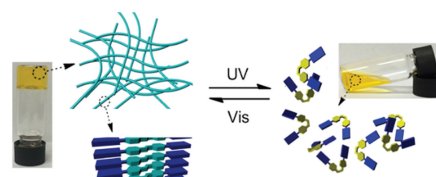
Si-Tai Zheng^a, Huan-Huan Yin^a, Zhao-Guang Ma^b, Nan-Li Sheng^a, Tian-Guang Zhan^a, Xiao-Yang Yan^b, Jiecheng Cui^a, Li-Juan Liu^a, Kang-Da Zhang^a

^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 Xingzhi College of Zhejiang Normal University, Jinhua 321004, China

Photoresponsive supramolecular hydrogel was fabricated from a small azobenzene-bridged dicationic pyridinium salt in the aqueous solution. The UV–vis light triggered reversible gel-sol transformation of such low-molecular-weight supramolecular hydrogel was systematically investigated through various analytical techniques.

Chinese Chemical Letters 30 (2019) 707



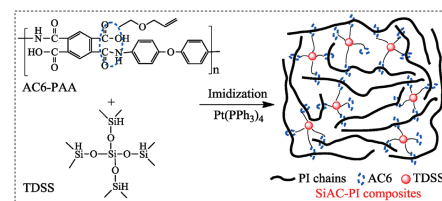
Enhanced mechanical and thermal properties of γ -allyloxymethyl 18-crown-6 and polyimide composites through hydrosilylation crosslinking

Chuqi Shi, Shumei Liu, Yang Li, Jianqing Zhao, Haohao Huang

School of Materials Science and Engineering, Key Laboratory of Polymer Processing Engineering of the Ministry of Education, South China University of Technology, Guangzhou 510640, China

Tetrakis-(dimethylsiloxy)-silane (TDSS) was employed to crosslink the complex of γ -allyloxymethyl 18-crown-6 (AC6) and polyimide (PI) (AC6-PI) through hydrosilylation reaction. The crosslinked AC6-PI (SiAC-PI) composites possessed excellent mechanical and thermal properties as well as low dielectric constant.

Chinese Chemical Letters 30 (2019) 710



Ph₃P⁺CF₂CO₂⁻ as an F⁻ and :CF₂ source for trifluoromethylthiolation of alkyl halides

Zhuo Liu^{a,b}, Jin Long^{a,b}, Xuan Xiao^{a,b}, Jin-Hong Lin^b, Xing Zheng^a, Ji-Chang Xiao^b, Yu-Cai Cao^c

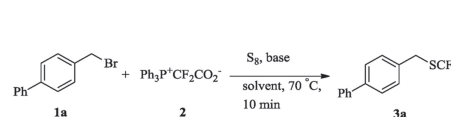
^a Institute of Pharmacy and Pharmacology, Hunan Province Cooperative Innovation Center for Molecular Target New Drug Study, University of South China, Hengyang 421001, China

^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 Shanghai Research Institute of Chemical Industry, Co., LTD., Shanghai 200062, China

Trifluoromethylthiolation of alkyl halides using Ph₃P⁺CF₂CO₂⁻ as a fluoride and difluorocarbene source is described. Even though the process involved a cleavage of a C-F bond and the formation of R-S, S-C and C-F bonds, the reactions occurred rapidly and were completed within 10 min.

Chinese Chemical Letters 30 (2019) 714



Light-responsive nanocomposites combining graphene oxide with POSS based on host-guest chemistry

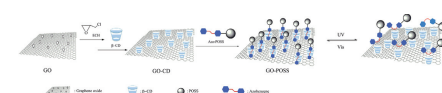
Zhiwei Teng^{a,b}, Bingtao Wang^b, Yingying Hu^{a,b}, Danqian Xu^a

^a State Key Laboratory Breeding Base of Green Chemistry-Synthesis Technology, Zhejiang University of Technology, Hangzhou 310014, China

^b Institute of Packaging Engineering, Ningbo Institute of Technology, Zhejiang University, Ningbo 315100, China

A facile methodology has been proposed to construct light-responsive nanocomposites composed of GO and POSS based on host-guest inclusion of CD/Azo. Through manipulating photo-irradiation conditions, GO and POSS moieties in GO-POSS exhibited impressive and reversible supramolecular assembly/disassembly behaviors and had remarkable effect on oxygen barrier property of PVA-coated films, which would have potential application for smart gas barrier materials in packaging.

Chinese Chemical Letters 30 (2019) 717



A one-pot synthesis of a self-included bisester-functionalized copillar[5]arene

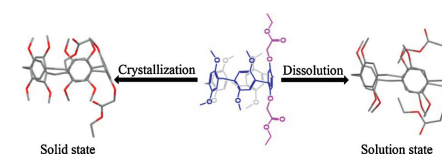
Qiong Jia^a, Xusheng Du^a, Chunyu Wang^b, Kamel Meguellati^a

^a International Joint Research Laboratory of Nano-Micro Architecture Chemistry (NMAC), College of Chemistry, Jilin University, Changchun 130012, China

^b State Key Laboratory of Supramolecular Structure and Materials, College of Chemistry, Jilin University, Changchun 130012, China

A bisester-substituted copillar[5]arene was synthesized by a one-pot reaction presenting a symmetrical self-included conformation in solution and an asymmetrical structure with only one selfincluded side in the cavity of pillar[5]arene in the solid state. This compound was characterized by 1D and 2D NMR and X-ray diffraction.

Chinese Chemical Letters 30 (2019) 721



Synthesis of 1,2-phenylenedimethanols by base-promoted reduction of isobenzofuran-1(3*H*)-ones with silane

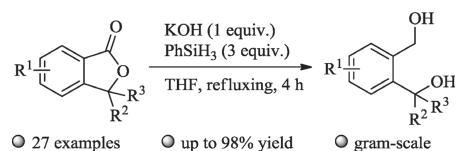
Bin Liu^{a,b}, Xigeng Zhou^a

^a Department of Chemistry, Shanghai Key Laboratory of Molecular Catalysis and Innovative Materials, Fudan University, Shanghai 200433, China

^b Technology Research Institute of Shanghai Huayi (Group) Company, Shanghai 200241, China

An efficient method for preparation of substituted 1,2-phenylenedimethanols and aliphatic 1,4-diols that are valuable intermediates in organic synthesis, has been developed by the base-promoted reduction of isobenzofuran-1(3*H*)-ones and γ -lactones with silane under mild conditions. Compared with traditional procedures using stoichiometric amounts of metal hydrides and alkyl reductants, the present method avoids the use of sensitive reagents and is operationally simple, and a broad variety of functional groups are tolerated.

Chinese Chemical Letters 30 (2019) 725



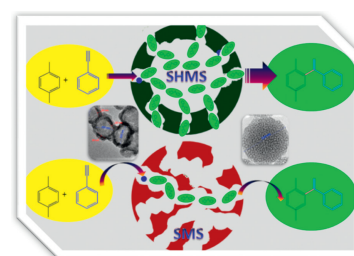
Spherical hollow mesoporous silica supported phosphotungstic acid as a promising catalyst for α -arylstyrenes synthesis via Friedel-Crafts alkenylation

Xianhui Wang, Zhongkui Zhao

State Key Laboratory of Fine Chemicals, Department of Catalysis Chemistry and Engineering, School of Chemical Engineering, Dalian University of Technology, Dalian 116024, China

This work presents a scalable approach for preparing spherical hollow mesoporous silica with high surface area/pore volume, serving as outstanding support for supported phosphotungstic acid catalyst with much superior catalytic performance to the one on previously reported spherical mesoporous silica toward diverse transformations, ascribed to the strengthened mass transfer and the enlarged exposure degree of acidic sites to reactants those resulting from unique hollow and mesoporous morphology.

Chinese Chemical Letters 30 (2019) 729



Construction of a novel ZnCo₂O₄/Bi₂O₃ heterojunction photocatalyst with enhanced visible light photocatalytic activity

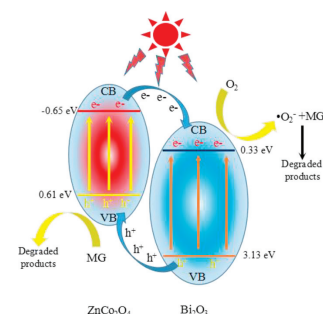
Jun Chen^a, Jing Zhan^a, Yumeng Zhang^a, Yiwei Tang^b

^a School of Metallurgy and Environment, Central South University, Changsha 410083, China

^b Guangdong Jiana Energy Technology Co., Ltd., Qingyuan 513056, China

A novel ZnCo₂O₄/Bi₂O₃ heterojunction photocatalyst was prepared via balling method. The enhanced photocatalytic activity is mainly attributed to the broad photoabsorption and low recombination rate of photogenerated electron-hole pairs, which is driven by the photogenerated potential difference formed at the ZnCo₂O₄/Bi₂O₃ heterojunction interface.

Chinese Chemical Letters 30 (2019) 735



Synthesis and characterization of novel biocompatible nanocapsules encapsulated lily fragrance

Weihong Ji^{a,b}, Tianlu Zhang^a, Zhiguo Lu^{a,b}, Jie Shen^{a,b}, Zuobing Xiao^{c,d}, Xin Zhang^a

^a State Key Laboratory of Biochemical Engineering, Institute of Process Engineering, Chinese Academy of Sciences, Beijing 100190, China

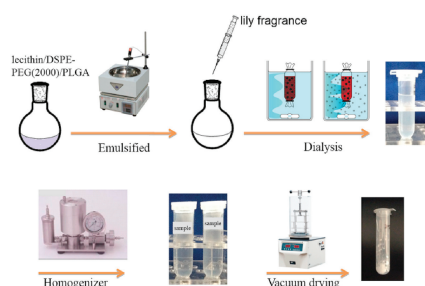
^b University of Chinese Academy of Sciences, Beijing 100049, China

^c Shanghai Research Institute of Fragrance and Flavor Industry, Shanghai 200232, China

^d School of Perfume and Aroma Technology, Shanghai Institute of Technology, Shanghai 200233, China

In this study, novel biocompatible nanocapsules encapsulated lily fragrance (LF-NPs) were developed. And, the LF-NPs are expected to have many potential applications to our daily life, such as cosmetic decorative, food industry, antibacterial, medical industry, tobacco industry, textile industry, home life, and so on.

Chinese Chemical Letters 30 (2019) 739



Semi-synthesis of Ubiquitin-propargylamide for identifying deubiquitinase targeting inhibitors

Xiaodan Tan^{a,b}, Jingsi Bai^a, Shan Ding^c, Yujing Ren^{d,c}, Danning Hong^{d,c}, Ziqing Mei^c, Yi-Ming Li^a

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

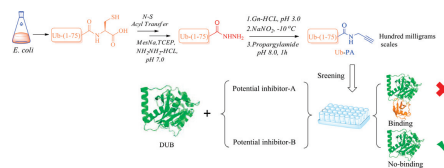
^b Tsinghua-Peking Center for Life Sciences, Ministry of Education Key Laboratory of Bioorganic Phosphorus Chemistry and Chemical Biology, Department of Chemistry, Tsinghua University, Beijing 100084, China

^c Biotechnology Research Institute, Chinese Academy of Agricultural Sciences, Beijing 100081 China

^d School of Biological Science, Beijing Institute of Technology, Beijing 100084, China

We report a novel semi-synthetic strategy to prepare Ub-PA in large-scale. Biochemical assays prove that semi-synthetic Ub-PA is an effective probe in identifying DUBs targeting inhibitors.

Chinese Chemical Letters 30 (2019) 743



Mesoporous silica nanospheres with the ability of photo-driven releasing sandela 803 for the application to wallpaper

Weihong Ji^{a,b}, Tianlu Zhang^a, Zhiguo Lu^{a,b}, Jie Shen^{a,b}, Jing Hu^{c,d}, Yunwei Niu^{c,d}, Zuobing Xiao^{c,d}, Xin Zhang^a

^a State Key Laboratory of Biochemical Engineering, Institute of Process Engineering, Chinese Academy of Sciences, Beijing 100190, China

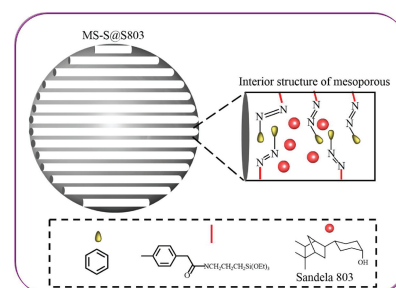
^b University of Chinese Academy of Sciences, Beijing 100049, China

^c Shanghai Research Institute of Fragrance and Flavor Industry, Shanghai 200232, China

^d School of Perfume and Aroma Technology, Shanghai Institute of Technology, Shanghai 200233, China

Mesoporous silica nanospheres loaded with sandela 803 (S803@MS-S) are prepared for application to wallpaper. The nano-fragrance has high encapsulation efficiency and property of photo-driven release.

Chinese Chemical Letters 30 (2019) 747



Flexible asymmetric supercapacitor with high energy density based on optimized MnO₂ cathode and Fe₂O₃ anode

Weiwei Liu^a, Menghua Zhu^a, Jinghua Liu^a, Xin Li^{a,c}, Jian Liu^b

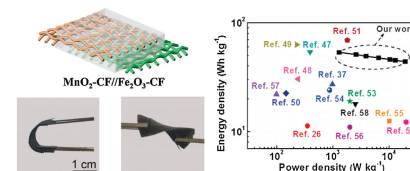
^a Department of Chemistry and Chemical Engineering, Harbin Institute of Technology, Harbin 150090, China

^b College of Materials Science and Engineering, Qingdao University of Science and Technology, Qingdao 266042, China

^c State Key Lab of Urban Water Resource and Environment, Harbin Institute of Technology, Harbin 150090, China

A flexible asymmetric supercapacitor is assembled using MnO₂ nanosheets/carbon fabric and Fe₂O₃/carbon fabric electrodes. By optimizing the reaction condition of the two electrodes, the device shows high energy densities and excellent flexibility.

Chinese Chemical Letters 30 (2019) 750



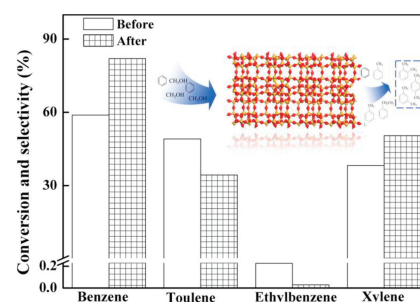
Synthesized high-silica hierarchical porous ZSM-5 and optimization of its reaction conditions in benzene alkylation with methanol

Jiayao Rui, Jinghui Lyu, Hualei Hu, Qunfeng Zhang, Qingtao Wang, Xiaonian Li

Industrial Catalysis Institute of Zhejiang University of Technology, State Key Laboratory Breeding Base of Green Chemistry Synthesis Technology, Hangzhou 310032, China

41.4% yield of xylene was obtained over high-silica hierarchical ZSM-5 catalyst by optimizing reaction conditions of benzene alkylation with methanol.

Chinese Chemical Letters 30 (2019) 757



Adsorption properties of the double-imprinted electrospun crosslinked chitosan nanofibers

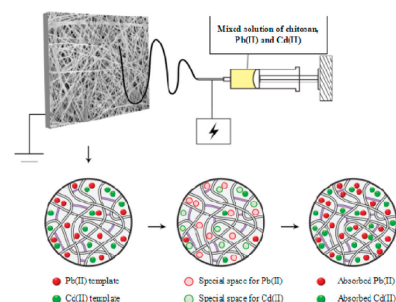
Yan Li^{a,b}, Mengqi Li^a, Jie Zhang^a, Xiaoyan Xu^a

^a School of Materials Science and Engineering, Tongji University, Shanghai 200092, 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

Pb(II)-Cd(II) double-imprinted electrospun crosslinked chitosan nanofibers (Pd/Cd-DIECCNs) were prepared by combining electrospinning and ion-imprinting methods, which showed excellent adsorption capacity for both Pb(II) and Cd(II).

Chinese Chemical Letters 30 (2019) 762



Hydrogen bonding networks controllable by the substitution position of tetrathiafulvalene on the pyridine ring

Jing Xu^a, Yibao Li^b, Lejia Wang^c, Xiaoyang Zhu^a, Xunwen Xiao^c, Yanfang Geng^a, Ke Deng^a, Qingdao Zeng^a

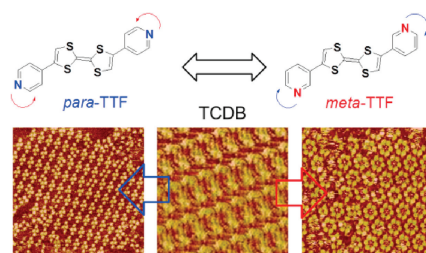
^a CAS Key Laboratory of Standardization and Measurement for Nanotechnology, CAS Center for Excellence in Nanoscience National Center for Nanoscience and Technology (NCNST), Beijing 100190, China

^b Key Laboratory of Organo-pharmaceutical, Chemistry Institution, Gannan Normal University, Ganzhou 341000, China

^c College of Chemical Engineering, Ningbo University of Technology, Ningbo 315211, China

Because of the effect of pyridine on the substituent position on the TTF group, TTF derivatives exhibit different assembly structures at the interface, which will be of great significance to the construction of functional nanostructures from the molecular design point of view.

Chinese Chemical Letters 30 (2019) 767



Microwave assisted hydrothermal synthesis of tin niobates nanosheets with high cycle stability as lithium-ion battery anodes

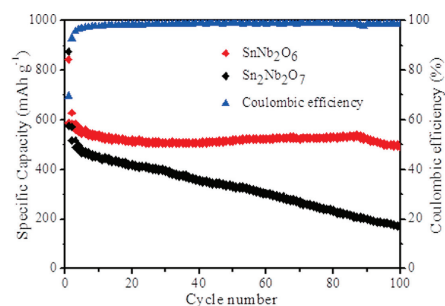
Xingang Kong^a, Jiarui Zhang^a, Jianfeng Huang^a, Jiayin Li^a, Yi Qin^a, Ting Zhao^a, Qi Feng^{a,b}

^a School of Materials Science and Engineering, Shaanxi University of Science and Technology, Xi'an 710021, China

^b Department of Advanced Materials Science, Faculty of Engineering, Kagawa University, Takamatsu-shi 761-0396, Japan

SnNb_2O_6 and $\text{Sn}_2\text{Nb}_2\text{O}_7$ nanosheets were synthesized via microwave assisted hydrothermal method, and innovatively employed as anode materials for lithium-ion battery. Compared with $\text{Sn}_2\text{Nb}_2\text{O}_7$ and the previously reported pure Sn-based anode materials, the SnNb_2O_6 electrode exhibited outstanding cycling performance.

Chinese Chemical Letters 30 (2019) 771



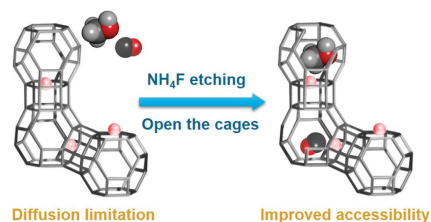
Oxycarbonylation of methanol over modified CuY: Enhanced activity by improving accessibility of active sites

Hexin Zhou, Shengping Wang, Baowei Wang, Xinbin Ma, Shouying Huang

Key Laboratory for Green Chemical Technology, School of Chemical Engineering and Technology, Tianjin University, Collaborative Innovation Center of Chemical Science and Engineering, Tianjin 300072, China

To improve the accessibility of Cu^+ species located in the small cages, Y zeolite was post-treated with NH_4F solution etching. The small cages were opened effectively, which allowed the reactants to interact with more Cu^+ sites. As a result, an enhanced activity was obtained over modified CuY catalyst in oxidative carbonylation of methanol.

Chinese Chemical Letters 30 (2019) 775



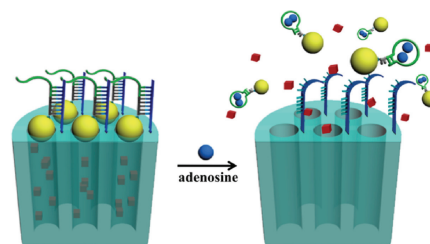
Bioresponsive nanogated ensemble based on structure-switchable aptamer directed assembly and disassembly of gold nanoparticles from mesoporous silica supports

Zhiyong Zhang, A. Runa, Jie Wu, Han Zhang, Xia Li, Zhiqiang He

Inner Mongolia Power Research Institute, Hohhot 010020, China

By taking advantage of recent advances in aptamer biology and nanotechnology, a general approach was developed for the design and fabrication of bioresponsive controlled delivery system. It utilized the structure-switchable aptamer directed assembly and disassembly of gold nanoparticles from mesoporous silica supports, which enables the control of cargo release from the inside of the mesoporous nanoparticles specifically in the presence of target molecule.

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Preparation and optical properties of three-dimensional navel-like Bi_2WO_6 hierarchical microspheres

Qiang Chen^a, Yuqin Mao^a, Naici Bing^a, Yongjin Zou^b, Luping Zhu^{a,c}

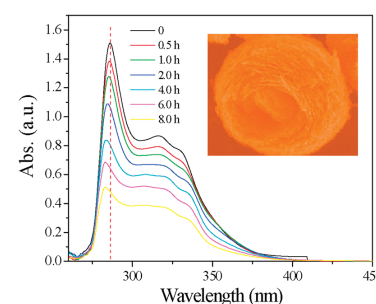
^a School of Environmental and Materials Engineering, Research Center of Resource Recycling Science and Engineering, Shanghai Polytechnic University (SSPU), Shanghai 201209, China

^b Guangxi Key Laboratory of Information Materials, Guilin University of Electronic Technology (GUET), Guilin 541004, China

^c Shanghai Innovation Institute for Materials, Shanghai 200444, China

Three-dimensional (3D) navel-like Bi_2WO_6 hierarchical microspheres were successfully prepared using a simple hydrothermal method. The 3D navel-like BWO hierarchical structure composed of well-ordered nanosheets displayed the excellent photocatalytic activity, and the degradation rate of norfloxacin was about 67%.

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Preparation of nitrogen doped clews-like carbon materials and their application as the electrode in supercapacitor

Shengrui Chen^a, Jiyuan Liang^a, Jinxing Zhao^a, Haifeng Li^a, Yan Liu^a, Heming Deng^c, Chang Liu^a, Shun Tang^a, Yuan-Cheng Cao^b

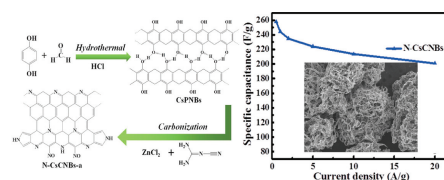
^a Key Laboratory of Optoelectronic Chemical Materials and Devices, Ministry of Education, Jiangnan University, Wuhan 430056, China

^b State Key Laboratory of Advanced Electromagnetic Engineering and Technology, School of Electrical and Electronic Engineering, Huazhong University of Science and Technology, Wuhan 430074, China

^c State Grid Electric Power Research Institute, Wuhan 430074, China

Nitrogen doped clews-like hierarchical porous carbon materials, fabricated by means of a one-pot hydrothermal reaction and post treatment, exhibit superior supercapacitive performances.

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Improved electrochemical properties in the $\text{Li}_3\text{Fe}_2(\text{PO}_4)_3$ by titanium and vanadium doping

Zhengshen Hua^a, Xin Zhang^{a,b,c}, Xiaojing Feng^a, Xiaoran Wang^a, Jun He^a, Xin Wang^a, Huifen Peng^{a,b,c}

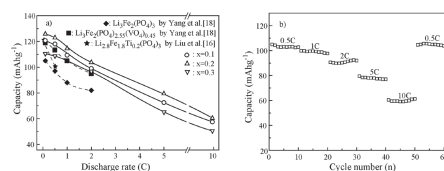
^a School of Material Science & Engineering, Hebei University of Technology, Tianjin 300130, China

^b Research Institute for Energy Equipment Materials, Hebei University of Technology, Tianjin 300130, China

^c Tianjin Key Laboratory of Laminating Fabrication & Interface Control Technology for Advanced Materials, Tianjin 300130, China

Ti^{4+} ions were introduced to the VO_4^{3-} -substituted $\text{Li}_3\text{Fe}_2(\text{PO}_4)_3$ by sol-gel method. Simultaneous substitution of Ti^{4+} for Fe^{3+} and VO_4^{3-} for PO_4^{3-} in the $\text{Li}_3\text{Fe}_2(\text{PO}_4)_3$ resulted in a net improvement in the rate capability and cycling performance, as compared with the single Ti^{4+} or VO_4^{3-} -substituted compound.

Chinese Chemical Letters 30 (2019) 792

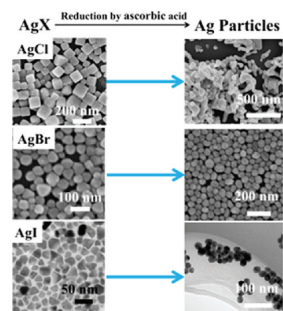


Large-scale synthesis of size-controllable Ag nanoparticles by reducing silver halide colloids with different sizes

Chinese Chemical Letters 30 (2019) 797

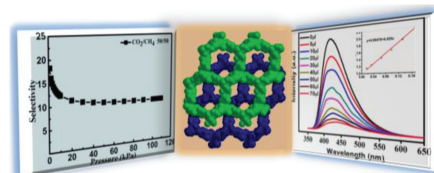
Xing Chen^a, Xun Liu^a, Kai Huang^{a,b}^a School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, Beijing 100083, China^b Beijing Key Lab of Green Recycling and Extraction of Rare and Precious Metals, University of Science and Technology Beijing, Beijing 100083, China

By reducing the colloidal silver halide, we successfully synthesized a series of micro-nano Ag particles.



Ligand controlled structure of cadmium(II) metal-organic frameworks for fluorescence sensing of Fe³⁺ ion and nitroaromatic compounds

Chinese Chemical Letters 30 (2019) 801

Xia Wang^a, Weidong Fan^a, Ming Zhang^a, Yizhu Shang^a, Yutong Wang^a, Di Liu^b, Hailing Guo^c, Fangna Dai^a, Daofeng Sun^a^a School of Materials Science and Engineering, College of Science, China University of Petroleum (East China), Qingdao 266580, China^b College of Chemical and Environmental Engineering, Shandong University of Science and Technology, Qingdao 266590, China^c State Key Laboratory of Heavy Oil Processing, China University of Petroleum (East China), Qingdao 266580, China2-Fold interpenetrating 3D framework for selective adsorption of CO₂ over CH₄ and fluorescence detection of Fe³⁺ ions and nitroaromatic compounds through fluorescence quenching.

Synthesis and electrochemical properties of Zn₃V₃O₈ as novel anode material

Chinese Chemical Letters 30 (2019) 806

Yunxia Jin^a, Junjie He^a, Zaihua Ou^c, Chuanqi Feng^{a,b}, Guangxue Zhang^b^a Hubei Collaborative Innovation Center for Advanced Organic Chemical Materials & Ministry of Education Key Laboratory for Synthesis and Applications of Organic Functional Molecules, Hubei University, Wuhan 430062, China^b School of Nuclear Technology and Chemistry & Biology, Hubei University of Science and Technology, Xianning 437100, China^c Nanxian Fanggu Middle School, Yiyang 413211, ChinaZn₃V₃O₈ two-dimensional micro sheets are successfully synthesized by combination of solvothermal method and heat treatment. The Zn₃V₃O₈ has better electrochemical performances after calcinations.