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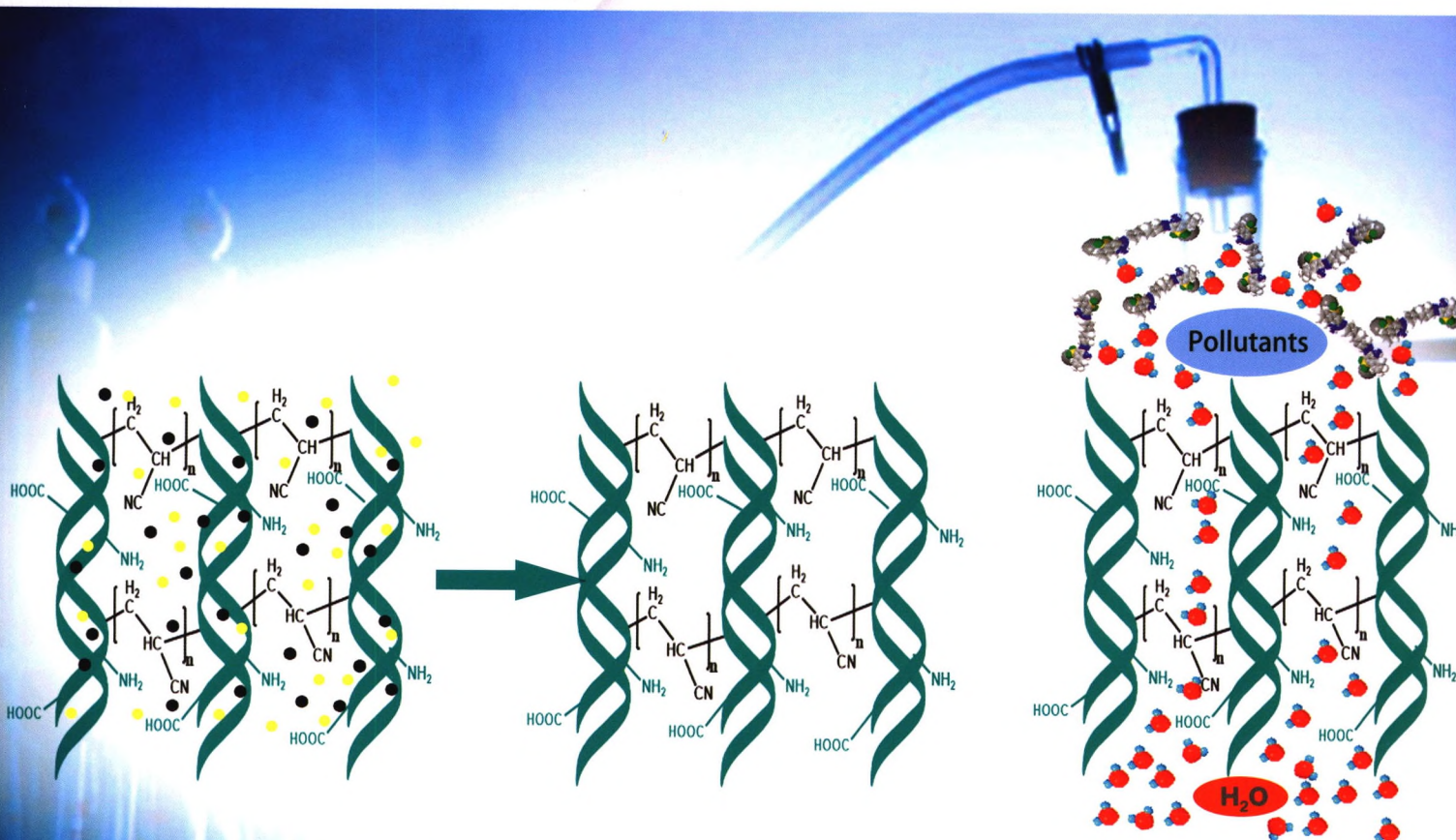
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Chinese Chemical Letters

Volume 30 | Number 1 | JANUARY 2019 |



The formation mechanism and filtration process of silk fibroin grafted polyacrylonitrile membrane.

Provided by Prof. Kong-Yin Zhao's group, Tianjin Polytechnic Univ., China



REVIEW

Jie-Yu Wang et al.
Embedding pyridine units in acceptors to
construct donor-acceptor conjugated polymers

COMMUNICATION

Yan Deng, Nongyue He et al.
A novel α -fetoprotein-MIP immunosensor
based on AuNPs/PTH modified glass carbon
electrode

ISSN 1001-8417

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Chinese Chemical Society

Institute of Materia Medica, Chinese Academy of Medical Sciences

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

Reviews

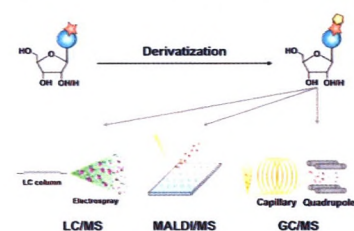
Deciphering nucleic acid modifications by chemical derivatization-mass spectrometry analysis

Meng-Dan Lan, Bi-Feng Yuan, Yu-Qi Feng

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

Chemical derivatization in combination with mass spectrometry (MS) analysis is a promising strategy for the sensitive and effective analysis of nucleic acid modifications. In this review, we summarize the recent advances for deciphering modifications in DNA and RNA by chemical derivatization-MS analysis.

Chinese Chemical Letters 30 (2019) 1

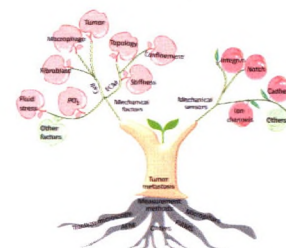


Mechanochemistry in cancer cell metastasis

Di Zhang^{a,b}, Feng Feng^{a,b}, Ruping Liu^c, Wenjia Zhu^c, Li Yao^{a,b}^a State Key Laboratory for Structural Chemistry of Unstable and Stable Species, CAS Research/Education Center for Excellence in Molecular Sciences, Institute of Chemistry, Chinese Academy of Science, Beijing 100190, China^b University of Chinese Academy of Sciences, Beijing 100049, China^c Beijing Institute of Graphic Communication, Beijing 102600, China

In this review, we introduced the mechanical factors in cancer cell metastasis, intracellular mechanical sensors and methods to measure the mechanical forces of tumor cells for evaluating the mechanochemistry in cancer metastasis.

Chinese Chemical Letters 30 (2019) 7



Selectively transform lignin into value-added chemicals

Qingqing Mei^a, Xiaojun Shen^{a,b}, Huizhen Liu^{a,b}, Buxing Han^{a,b}^a Beijing National Laboratory for Molecular Sciences, CAS Key Laboratory of Colloid and Interface and Thermodynamics, CAS Research/Education Center for Excellence in Molecular Sciences, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China^b School of Chemistry and Chemical Engineering, University of Chinese Academy of Sciences, Beijing 100049, China

Selective transformation of lignin into value-added chemicals is of strategic significance. Phenols, aldehydes, carboxylic acids, alkanes and arenes can be harvested from lignin with high selectivity under appropriate reaction condition.

Chinese Chemical Letters 30 (2019) 15



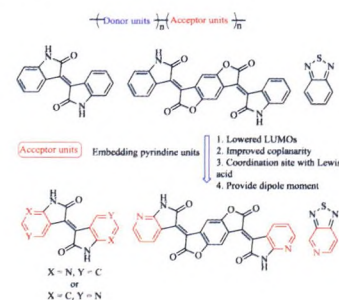
Embedding pyridine units in acceptors to construct donor-acceptor conjugated polymers

Zi-Yuan Wang, Jie-Yu Wang, Jian Pei

Beijing National Laboratory for Molecular Sciences, Key Laboratory of Bioorganic Chemistry and Molecular Engineering of Ministry of Education, Key Laboratory of Polymer Chemistry and Physics of Ministry of Education, Center for Soft Matter Science and Engineering, College of Chemistry and Molecular Engineering, Peking University, Beijing 100871, China

Embedding pyridine units into donor-acceptor (D-A) conjugated polymer backbones results in lowered lowest unoccupied molecular orbitals (LUMOs) and improved coplanarity of polymer backbones by the non-bonding interactions, leading to high-performance semiconducting polymers.

Chinese Chemical Letters 30 (2019) 25



Artificial light-harvesting systems fabricated by supramolecular host-guest interactions

Tangxin Xiao^a, Weiwei Zhong^a, Ling Zhou^a, Lixiang Xu^a, Xiao-Qiang Sun^a, Robert B.P. Elmes^b, Xiao-Yu Hu^c, Leyong Wang^{a,c}

^a School of Petrochemical Engineering, Advanced Catalysis and Green Manufacturing Collaborative Innovation Center, Changzhou University, Changzhou 213164, China

^b Department of Chemistry, Maynooth University, National University of Ireland, Maynooth, Ireland

^c Key Laboratory of Mesoscopic Chemistry of MOE, School of Chemistry and Chemical Engineering, Nanjing University, Nanjing 210023, China

Recent progress on artificial light-harvesting systems fabricated by supramolecular host-guest interaction was summarized.

Chinese Chemical Letters 30 (2019) 31



Artificial light harvesting systems driven by host-guest interactions

Water-soluble supramolecular polymers constructed by macrocycle-based host-guest interactions

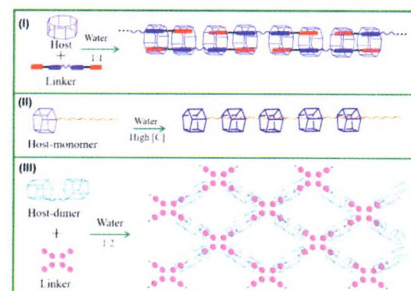
Yanmei Chen^{a,b}, Siyu Sun^b, Dou Lu^b, Yujun Shi^{a,b}, Yong Yao^b

^a School of Environmental and Chemical Engineering, Jiangsu University of Science and Technology, Zhenjiang 212003, China

^b College of Chemistry and Chemical Engineering, Nantong University, Nantong 226019, China

Water soluble supramolecular polymers are especially important due to their superior biocompatibility and environmental adaptation, which determined they have wide applications in various areas, such as drug delivery, self-healing, shape memory. On the other hand, macrocyclic compounds are the most used building blocks in the preparation of supramolecular polymers. Macrocyclic-based supramolecular polymers, which introduce the host-guest interaction in the system, endow these polymers with interesting and smart physical-chemical properties. In this review, we summarized recent studies about supramolecular polymers in aqueous solution based on macrocyclic compounds.

Chinese Chemical Letters 30 (2019) 37



Communications

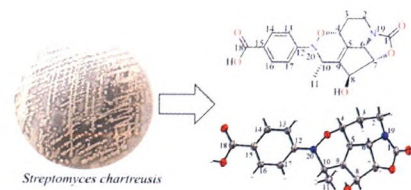
Chartrenoline, a novel alkaloid isolated from a marine *Streptomyces chartreusis* NA02069

Chengli Liu, Chenglong Yang, Yingjie Zeng, Jing Shi, Lingyu Li, Wei Li, Ruihua Jiao, Renxiang Tan, Huiming Ge

State Key Laboratory of Pharmaceutical Biotechnology, Institute of Functional Biomolecules, School of Life Sciences, Nanjing University, Nanjing 210023, China

A novel alkaloid featuring a unique tetracyclic ring system was isolated from a marine actinobacterium.

Chinese Chemical Letters 30 (2019) 44



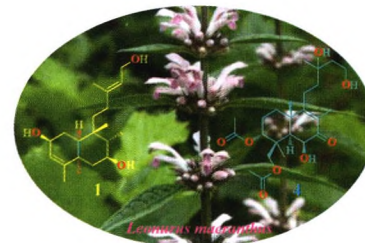
Diterpenoids from the aerial parts of *Leonurus macranthus*

Yunfang Zhao, Zheng Huang, Jing Sun, Daoran Pang, Xiaonan Chen, Huina Yao, Zhixiang Zhu, Jiao Zheng, Pengfei Tu, Jun Li

Modern Research Center for Traditional Chinese Medicine, School of Chinese Materia Medica, Beijing University of Chinese Medicine, Beijing 100029, China

One *cis* clerodane-type (**1**) and three highly oxygenated labdane-type diterpenes (**2–4**) were isolated from the aerial parts of *Leonurus macranthus*. Compound **1** represents the first example of *cis* clerodane-type diterpene in the plants of *Leonurus* genus.

Chinese Chemical Letters 30 (2019) 47



Dimericbiscognienynes B and C: New diisoprenyl-cyclohexene-type meroterpenoid dimers from *Biscogniauxia* sp.

Huan Zhao^{a,b}, Meizhi Wang^c, Guodong Chen^a, Dan Hu^a, Enqing Li^a, Yibo Qu^c, Libing Zhou^c, Liangdong Guo^d, Xinsheng Yao^a, Hao Gao^a

^a Institute of Traditional Chinese Medicine and Natural Products, College of Pharmacy / Guangdong Province Key Laboratory of Pharmacodynamic Constituents of TCM and New Drugs Research, Jinan University, Guangzhou 510632, China

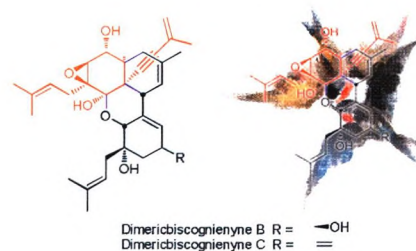
^b College of Traditional Chinese Medicine, Jinan University, Guangzhou 510632, China

^c Guangdong-Hongkong-Macau Institute of CNS Regeneration, Joint International Research Laboratory of CNS Regeneration, Jinan University, Guangzhou 510632, China

^d State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100190, China

Till now, only three diisoprenyl-cyclohexene/ane-type meroterpenoid dimers have been identified. The isolation of two new diisoprenyl-cyclohexene-type meroterpenoid dimers (dimericbiscognienynes B and C) from *Biscogniauxia* sp. 71-10-1-1 added new members to this family.

Chinese Chemical Letters 30 (2019) 51



A lysosomal targeting fluorescent probe and its zinc imaging in SH-SY5Y human neuroblastoma cells

Houna Duan^a, Yu Ding^a, Chusen Huang^b, Weiping Zhu^a, Rui Wang^c, Yufang Xu^a

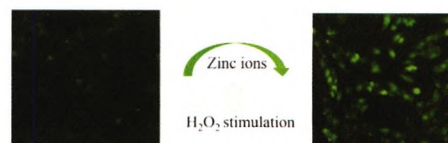
^a State Key Laboratory of Bioreactor Engineering, Shanghai Key Laboratory of Chemical Biology, School of Pharmacy, East China University of Science and Technology, Shanghai 200237, China

^b The Education Ministry Key Laboratory of Resource Chemistry and Shanghai Key Laboratory of Rare Earth Functional Materials, Department of Chemistry, College of Life and Environmental Sciences, Shanghai Normal University, Shanghai 200234, China

^c Shanghai Key Laboratory of New Drug Design, School of Pharmacy, East China University of Science and Technology, Shanghai 200237, China

A fluorescent probe based PET mechanism was designed, and the probe could image endogenous release of Zn²⁺ upon H₂O₂ stimulation in SH-SY5Y cells.

Chinese Chemical Letters 30 (2019) 55



G-quadruplex-assisted enzyme strand recycling for amplified label-free fluorescent detection of UO₂²⁺

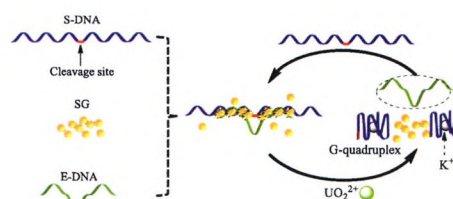
Paijin Zhu^a, Yiyang Zhang^a, Shuxia Xu^b, Xinfeng Zhang^a

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

^b College of Environment and Ecology, Chengdu University of Technology, Chengdu 610059, China

A G-quadruplex-assisted enzyme strand recycling strategy was developed for amplified label-free fluorescent detection of uranyl ion (UO₂²⁺).

Chinese Chemical Letters 30 (2019) 58



A specific and selective chemiluminescent probe for Pd²⁺ detection

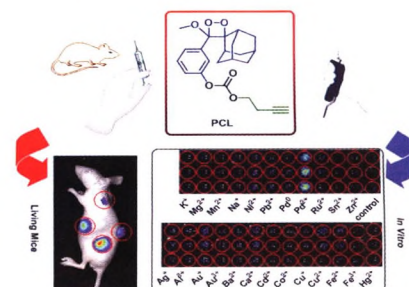
Yuqi Gao^a, Yuxing Lin^a, Tingting Liu^a, Xiaomeng Zhang^a, Feng Xu^a, Pan Liu^a, Lupei Du^a, Minyong Li^{a,b}

^a Department of Medicinal Chemistry, Key Laboratory of Chemical Biology (MOE), School of Pharmacy, Shandong University, Ji'nan 250012, China

^b State Key Laboratory of Microbial Technology, Shandong University, Ji'nan 250100, China

A modified 1,2-dioxetane is reported as a chemiluminescent imaging (CLI) approach for monitoring palladium(II).

Chinese Chemical Letters 30 (2019) 63



Intracellular effects of prodrug-like wortmannin probes

Shasha Ying^a, Shubo Du^b, Jia Dong^a, Bi Xuan Ng^b, Chengwu Zhang^c, Lin Li^c, Jingyan Ge^a, Qing Zhu^a

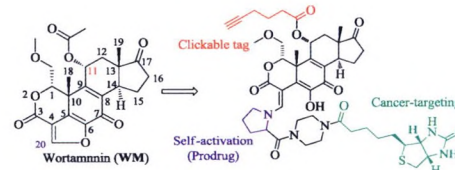
^a Key Laboratory of Bioorganic Synthesis of Zhejiang Province, College of Biotechnology and Bioengineering, Zhejiang University of Technology, Hangzhou 310014, China

^b Department of Chemistry, National University of Singapore, Singapore 117543, Singapore

^c Key Laboratory of Flexible Electronics (KLOFE) & Institute of Advanced Materials (IAM), Jiangsu National Synergetic Innovation Center for Advanced Materials (SICAM), Nanjing Tech University (NanjingTech), Nanjing 211816, China

A small library of wortmannin based probes was synthesized by installing a clickable handle at C11 site for bioconjugation, and secondary amine and biotin moiety at C20 site to achieve self-activation and cancer target, respectively, to facilitate the analysis of their intracellular effects.

Chinese Chemical Letters 30 (2019) 67



Novel strategy of constructing fluorescent probe for MAO-B via cascade reaction and its application in imaging MAO-B in human astrocyte

Huihuan Qin, Lingling Li, Kun Li, Xiaoqi Yu

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

A novel strategy was developed to detect MAO-B and image MAO-B in human astrocyte by constructing coumarin via cascade reaction and intramolecular cyclization.

Chinese Chemical Letters 30 (2019) 71



A water-stable lanthanide-coordination polymer with free Lewis site for fluorescent sensing of Fe³⁺

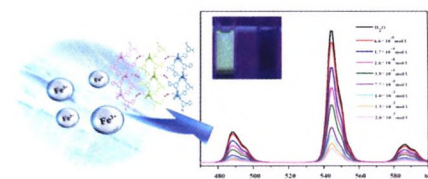
Wenhe Wang^a, Qiang Gaob, Xiaoyu Li^b, Jianhong Wang^a, Chaopeng Wang^b, Yinghui Zhang^b, Xianhe Bu^{a,b}

^a Department of Chemistry, Collaborative Innovation Center of Chemical Science and Engineering (Tianjin), Nankai University, Tianjin 300071, China

^b School of Materials Science and Engineering, TKL of Metal- and Molecule-Based Material Chemistry, Nankai University, Tianjin 300350, China

A Tb³⁺ based coordination polymer (NKU-115) with free N sites was successfully constructed, featuring strong green light emission and selective quenching response toward Fe³⁺ in aqueous solution.

Chinese Chemical Letters 30 (2019) 75



A membrane separation technique for optimizing sample preparation of MALDI-TOF MS detection

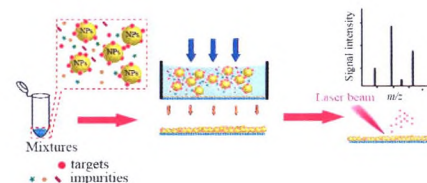
Zengnan Wu^{a,b}, Ning Xu^b, Weiwei Li^b, Jin-Ming Lin^b

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

^b Beijing Key Laboratory of Microanalytical Methods and Instrumentation, Department of Chemistry, Tsinghua University, Beijing 100084, China

Here, we report a new method based on the combination of membrane separation technology and nanomaterial to rapid detection of peptides and protein with MALDI-TOF MS. This method shows advantages as it can inhibit the heterogeneous of sample spot and enhance the target molecular signal intensity.

Chinese Chemical Letters 30 (2019) 95



Construction of on-line supercritical fluid extraction with reverse phase liquid chromatography–tandem mass spectrometry for the determination of capsaicin

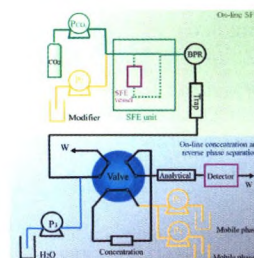
Naoki Hamada^{a,b}, Yuki Hashi^b, Satoshi Yamaki^b, Yanli Guo^b, Lin Zhang^b, Haifang Li^a, Jin-Ming Lin^a

^a Beijing Key Laboratory of Microanalytical Methods and Instrumentation, MOE Key Laboratory of Bioorganic Phosphorous Chemistry & Chemical Biology, Department of Chemistry, Tsinghua University, Beijing 100084, China

^b China MS Center, Shimadzu (China) Co., Beijing Branch, Beijing 100020, China

A column-switching system, composed of supercritical fluid extraction (SFE) and reverse phase liquid chromatography/mass spectrometry (RPLC/MS) was constructed for on-line extraction and reverse-phase separation of capsaicinoids in capsicum fruits.

Chinese Chemical Letters 30 (2019) 99



Analysis of the binding sites with NL-101 to amino acids and peptides by HPLC/MS/MS

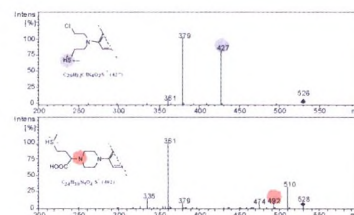
Lingzi Dai^a, Nian Guo^a, Yaqin Liu^a, Shanshan Shen^a, Qiufu Ge^b, Yuanjiang Pan^a

^a Department of Chemistry, Zhejiang University, Hangzhou 310027, China

^b Hangzhou Pharmaceutical Group Co., Ltd., Hangzhou 311100, China

Collision-induced dissociation experiment demonstrated that under the same collision energy, different fragmentation pattern could help distinguish the accurate location of amino acids-NL adducts.

Chinese Chemical Letters 30 (2019) 103



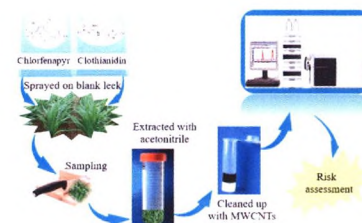
Dissipation behavior, residue distribution and dietary risk assessment of chlorfenapyr and clothianidin in leek using RRLC-QqQ-MS/MS technique

Xi Li, Xiaoxin Chen, Jiye Hu

College of Chemistry and Biological Engineering, University of Science and Technology Beijing, Beijing 100083, China

Commercial suspension emulsion (SE) of (8% chlorfenapyr + 20% clothianidin), as a pre-registered product in China, was firstly investigated under Chinese open-field conditions. A MWCNTs-based QuEChERS method for simultaneous determination of chlorfenapyr and clothianidin in leek was established and validated through RRLC-QqQ-MS/MS.

Chinese Chemical Letters 30 (2019) 107



Determination of triglycerides in human serum by near-infrared diffuse reflectance spectroscopy using silver mirror as a substrate

Shuyu Wang^a, Jin Zhang^a, Cuicui Wang^a, Xiaoming Yu^b, Wensheng Cai^a, Xueguang Shao^{a,c,d,e}

^a Research Center for Analytical Sciences, College of Chemistry, Nankai University, Tianjin 300071, China

^b Laboratory of Clinic, People's Hospital of Gaomi City, Gaomi 261500, China

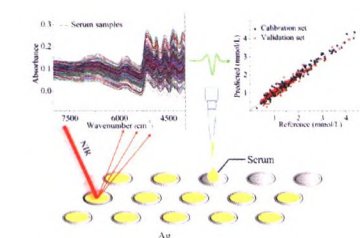
^c Tianjin Key Laboratory of Biosensing and Molecular Recognition, Tianjin 300071, China

^d State Key Laboratory of Medicinal Chemical Biology, Tianjin 300071, China

^e Collaborative Innovation Center of Chemical Science and Engineering, Tianjin 300071, China

Quantitative determination of serum triglycerides was achieved in diffuse reflectance mode using silver mirror as the substrate to enhance the spectral features.

Chinese Chemical Letters 30 (2019) 111



ATR-FTIR study of *Bacillus* sp. and *Escherichia coli* settlements on the bare and Al₂O₃ coated ZnSe internal reflection element

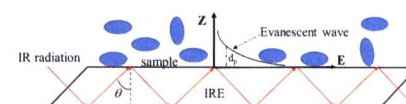
Rongqiao Chen^{a,b}, Chune Guo^a, Wubo Chu^a, Nan Jiang^a, He Li^a

^a Key Laboratory of Marine Materials and Related Technologies, CAS, Zhejiang Key Laboratory of Marine Materials and Protective Technologies, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo 315201, China

^b Nano Science and Technology Institute, University of Science and Technology of China, Suzhou 21500, China

FTIR-ATR has been used for understanding the interaction between bacteria and surfaces in the adsorption progress.

Chinese Chemical Letters 30 (2019) 115



Redox-responsive diphenylalanine aggregate mediated by cyclodextrin

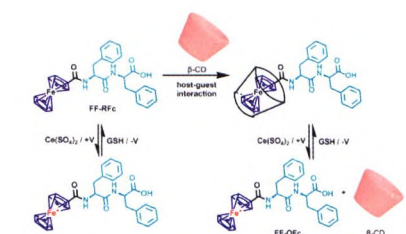
Lu Zhang^a, Ying-Ming Zhang^a, Guoxing Liu^a, Yu Liu^{a,b}

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

^b Collaborative Innovation Center of Chemical Science and Engineering (Tianjin), Nankai University, Tianjin 300072, China

The molecular assembling behaviours between ferrocene-modified diphenylalanine and β -cyclodextrin were investigated, which showed a reversible morphological conversion by the chemical redox of ferrocenyl moiety.

Chinese Chemical Letters 30 (2019) 120



Supramolecular conducting microfibers from amphiphilic tetrathiafulvalene-based organogelator

Xuemei Liang^a, Lei Wang^{b,c}, Kwangun Jeong^b, Myonghoon Lee^b

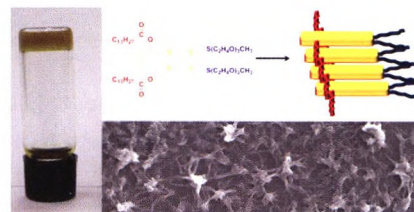
^a College of Information Technology, Jilin Agricultural University, Changchun 130118, China

^b Department of Polymer/Nano Science and Technology, Chonbuk National University, Jeonju 561756, Republic of Korea

^c National Center for Nano science and Technology (NCNST), Beijing 100190, China

An amphiphilic tetrathiafulvalene molecule can gelate a variety of organic solvents in view of multiple intermolecular interactions, especially in polar solvent with the formation of highly-ordered columnar structures. The formation of mixed-valence states shows the semiconductive behaviors with the conductivity of 10^{-4} S/cm, as promising candidates for organic electronics.

Chinese Chemical Letters 30 (2019) 123



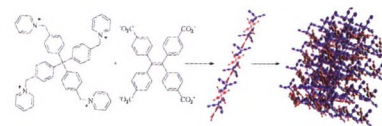
Self-assembly of supramolecular polymers in water from tetracationic and tetraanionic monomers in water through cooperative electrostatic attraction and aromatic stacking

Ya-Kun Zhao, Zhong-Zheng Gao, Hui Wang, Dan-Wei Zhang, Zhan-Ting Li

Department of Chemistry, Shanghai Key Laboratory of Molecular Catalysis and Innovative Materials and Collaborative Innovation Center of Chemistry for Energy Materials (iChEM), Fudan University, Shanghai 200438, China

The cooperative electrostatic attraction and π - π stacking between tetrahedral tetrapyrindinium and three tetraanionic tetraphenylethylenes led to the formation of a new series of supramolecular polymers in water.

Chinese Chemical Letters 30 (2019) 127



Facile construction of Zn(II)-porphyrin-cored [5]rotaxane and its controllable aggregation behaviours

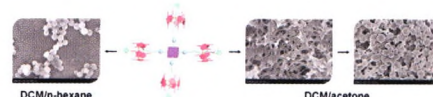
Menglan He^a, Lijun Chen^a, Bo Jiang^a, Hongwei Tan^b, Cuihong Wang^a, Haibo Yang^a

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

^b Department of Chemistry, Beijing Normal University, Beijing 100050, China

A novel Zn(II)-porphyrin-cored [5]rotaxane with platinum-acetylide as linkage was constructed. The obtained [5]rotaxane performed different morphologies in different solvents. In addition, the ordered morphologies generated from [5]rotaxane exhibited the morphology evolution by time.

Chinese Chemical Letters 30 (2019) 131



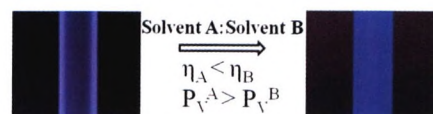
To inhibit coffee ring effect in inkjet printing of light-emitting polymer films by decreasing capillary force

Xinhong Yu, Rubo Xing, Zhongxiang Peng, Yangming Lin, Zhonghui Du, Junqiao Ding, Lixiang Wang, Yanchun Han

State Key Laboratory of Polymer Physics and Chemistry, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, Changchun 130022, China

Coffee ring effects of inkjet printed poly(spirobifluorene) films were restrained by decreasing the capillary force due to volatility/viscosity match.

Chinese Chemical Letters 30 (2019) 135



Handedness inversion of chiral mesoporous silica: A diffuse-reflectance circular dichroism study

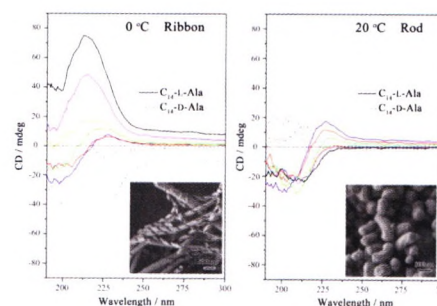
Nan Wang, Ruiyu Lin, Minzhao Xue, Yingying Duan, Shun'ai Che

^a School of Chemistry and Chemical Engineering, State Key Laboratory of Composite Materials, Shanghai Jiao Tong University, Shanghai 200240, China

^b School of Chemical Science and Engineering, Tongji University, Shanghai 200092, China

Temperature-dependent handedness inversion in chiral mesoporous silica was investigated by diffuse-reflectance circular dichroism spectra.

Chinese Chemical Letters 30 (2019) 139



Effective enhancement of the emission efficiency of tetraphenylporphyrin in solid state by tetraphenylethene modification

Nan Jiang^a, Yijia Wang^a, Anjun Qin^b, Jing Zhi Sun^a, Ben Zhong Tang^{a,b,c}

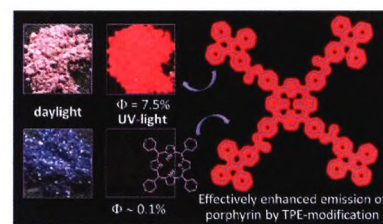
^a MOE Key Laboratory of Macromolecular Synthesis and Functionalization, Department of Polymer Science and Engineering, Zhejiang University, Hangzhou 310027, China

^b Guangdong Innovative Research Team, State Key Laboratory of Luminescent Materials and Devices, South China University of Technology, Guangzhou 510641, China

^c Department of Chemistry, Institute for Advanced Study, Institute of Molecular Functional Materials, and State Key Laboratory of Molecular Neuroscience, The Hong Kong University of Science & Technology, Hong Kong, China

Evidently enhanced red emission efficiency from the solid state of tetraphenylporphyrin derivative was achieved by modification with tetraphenylethene units.

Chinese Chemical Letters 30 (2019) 143



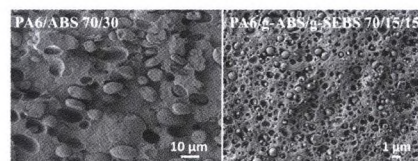
Creating super-tough and strong PA6/ABS blends using multi-phase compatibilizers

Xianwei Sui, Xu-Ming Xie

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

PA6/ABS blends with excellent mechanical properties are prepared using combination of two effective multi-phase compatibilizers, where finely dispersed domains with unique encapsulation structures are generated for the synergistic improvement in tensile and impact performances.

Chinese Chemical Letters 30 (2019) 149



Living and enantiomer-selective polymerization of allene initiated by Ni complex containing chiral phosphine

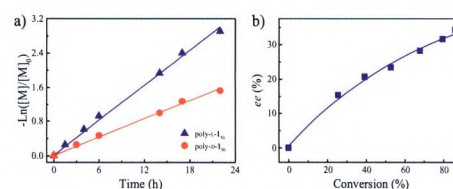
Hai Zhu^{a,b}, Shizhong Luo^a, Zongquan Wu^b

^a College of Chemistry and Materials Science, The Key Laboratory of Functional Molecular Solids, Ministry of Education, Anhui Laboratory of Molecular-Based Materials, Center for Nano Science and Technology, Anhui Normal University, Wuhu 241000, China

^b Department of Polymer Science and Engineering, School of Chemistry and Chemical Engineering, Hefei University of Technology and Anhui Key Laboratory of Advanced Catalytic Materials and Reaction Engineering, Hefei 230009, China

In the polymerization of chiral allene by using chiral phosphine complex, the polymerization rate of *l*-1 is approximately 1.9 times that of *d*-1. This catalyst has enantiomer-selectivity for the polymerization of chiral allene derivative monomer.

Chinese Chemical Letters 30 (2019) 153



Coaxial electrospinning core-shell fibers for self-healing scratch on coatings

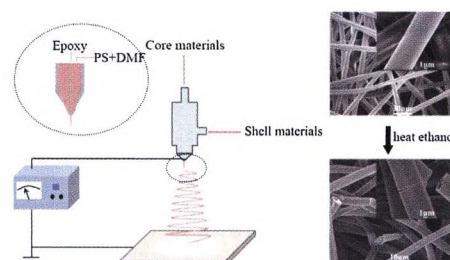
Pengchong Li, Zhi Shang, Kejian Cui, Huan Zhang, Zhi Qiao, Caizhen Zhu, Ning Zhao, Jian Xu

^a College of Chemistry and Environmental Engineering, Shenzhen University, Shenzhen 518060, China

^b Beijing National Laboratory for Molecular Sciences, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China

Polystyrene (PS) fibers with core-shell structure were prepared by coaxial electrostatic spinning using liquid epoxy or curing agent as the core and PS solution as the shell. Scratch self-healing coatings were realized by using the healant-loaded core-shell fibers in the matrix.

Chinese Chemical Letters 30 (2019) 157



A novel α -fetoprotein-MIP immunosensor based on AuNPs/ PTh modified glass carbon electrode

Yuxuan Lai^a, Chuanxiang Zhang^a, Yan Deng^{a,c}, Gaojian Yang^a, Song Li^a, Congli Tang^a, Nongyue He^{a,c}

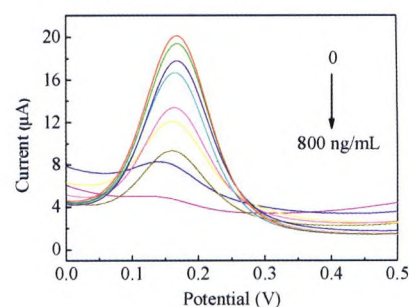
^a Hunan Key Laboratory of Biomedical Nanomaterials and Devices, Hunan University of Technology, Zhuzhou 412007, China

^b College of Packing and Materials Engineering, Hunan University of Technology, Zhuzhou 412007, China

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

A new alpha-fetoprotein-MIP (AFP-MIP) immunosensor based on glass carbon electrode (GCE) modified with polythionine (PTh) and gold nanoparticles (AuNPs) was successfully prepared for the sensitive detection of AFP. The AFP-MIP immunosensor presented a facile preparation, low sample consumption, and good stability, and could become a new promising method for the detection of AFP.

Chinese Chemical Letters 30 (2019) 160



Nanoparticle structure transformation of mPEG grafted chitosan with rigid backbone induced by α -cyclodextrin

Lei Huang^b, Jiaojiao Chen^b, Muye He^b, Xinyu Hou^b, Yiben Lu^b, Kaiyan Lou^{b,c}, Feng Gao^{a,b,c}

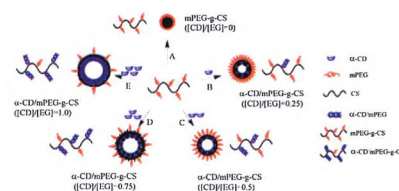
^a Shanghai Key Laboratory of Functional Materials Chemistry, East China University of Science and Technology, Shanghai 200237, China

^b Department of Pharmaceutics, School of Pharmacy, East China University of Science and Technology, Shanghai 200237, China

^c Shanghai Key Laboratory of New Drug Design, East China University of Science and Technology, Shanghai 200237, China

This paper presented an interesting nanoparticle-based drug-delivery system with morphology transition behavior depending on the content of exposed PEG chain on the particle surface and a likely mechanism for the morphological transition of the rod-coil graft copolymer mPEG-g-CS was proposed.

Chinese Chemical Letters 30 (2019) 163



Preparation of Au nanoparticles modified TiO₂ nanotube array sensor and its application as chemical oxygen demand sensor

Longqi Liang^a, Jiao Yin^b, Jinpeng Bao^a, Linchuan Cong^a, Weimin Huang^a, Haibo Lin^c, Zhan Shi^d

^a College of Chemistry, Jilin University, Changchun 130012, China

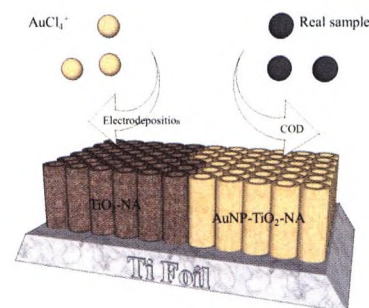
^b Key Laboratory of Functional Materials and Devices for Special Environments, Xinjiang Technical Institute of Physics & Chemistry, Chinese Academy of Sciences, Urumqi 830011, China

^c Guangdong Guanghua Sci-Tech Co., Ltd., Shantou 515061, China

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

Au nanoparticles (AuNPs) were electrodeposited at the highly ordered anatase TiO₂ nanotube array (TiO₂NA) electrode to prepare the AuNP-TiO₂NA sensor. The as-prepared sensor can be used for the determination of chemical oxygen demand (COD) in real samples.

Chinese Chemical Letters 30 (2019) 167



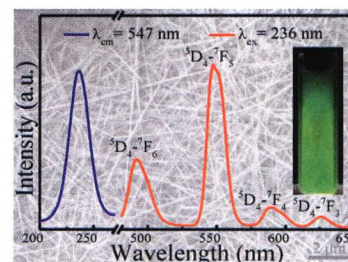
Facile hydrothermal-thermal conversion synthesis of CaSiO₃ nanowires as promising structure and function integrated photoluminescent host candidate

Lin Xu, Panpan Sun, Xiuping Chen, Peiyan Zhai, Wancheng Zhu

Department of Chemical Engineering, Qufu Normal University, Qufu 273165, China

A facile green hydrothermal-thermal conversion method was developed for the uniform high aspect ratio CaSiO₃ nanowires as promising structure and function integrated photoluminescent host, without any organic additive.

Chinese Chemical Letters 30 (2019) 171



Controllable self-assembly of parallel gold nanorod clusters by DNA origami

Hang Yu^a, Tiantian Man^b, Wei Ji^b, Leilei Shi^a, Chenwei Wu^a, Hao Pei^b, Chuan Zhang^a

^a School of Chemistry and Chemical Engineering, Shanghai Key Laboratory of Electrical Insulation and Thermal Ageing, Shanghai Jiao Tong University, Shanghai 200240, China

^b Shanghai Key Laboratory of Green Chemistry and Chemical Processes, School of Chemistry and Molecular Engineering, East China Normal University, Shanghai 200241, China

We demonstrate the self-assembly of three types of parallel gold nanorod clusters using a rod-like DNA origami as the template.

Chinese Chemical Letters 30 (2019) 175



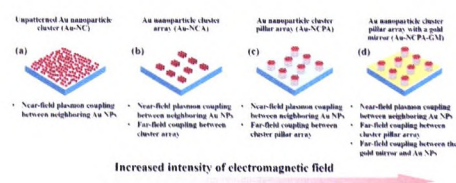
A multiple coupling approach to produce high-performance SERS substrates

Xianpeng Yin, Hao Dong, Shiqiang Wang, Yun Liang, Ning Gao, Wanlin Zhang, Li Tian, Fuwei Sun, Guangtao Li

Department of Chemistry, Key Lab of Organic Optoelectronics and Molecular Engineering, Tsinghua University, Beijing 100084, China

In this work, large area gold-nanoparticle-cluster pillar array with a gold mirror as high-performance SERS substrate was facily fabricated by combined use of nanosphere lithography and self-assembly approach.

Chinese Chemical Letters 30 (2019) 179



Facile-fabricated iron oxide nanorods as a catalyst for hydrogenation of nitrobenzene

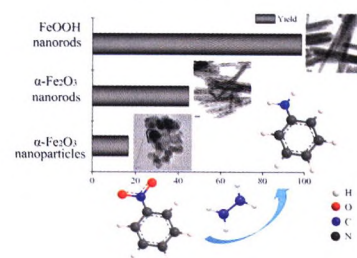
Yanshuang Ma^{a,b}, Liyun Zhang^a, Wen Shi^{a,b}, Yiming Niu^{a,b}, Bingsen Zhang^a, Dangsheng Su^a

^a Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, Shenyang 110016, China

^b School of Materials Science and Engineering, University of Science and Technology of China, Hefei 230026, China

Iron oxide nanorod catalysts were fabricated by wet chemistry method followed annealing. The facilefabricated FeOOH nanorods with an efficient catalytic performance for transfer hydrogenation of nitrobenzene with hydrazine hydrate are presented.

Chinese Chemical Letters 30 (2019) 183



One-pot photoreduction to prepare NIR-absorbing plasmonic gold nanoparticles tethered by amphiphilic polypeptide copolymer for synergistic photothermal-chemotherapy

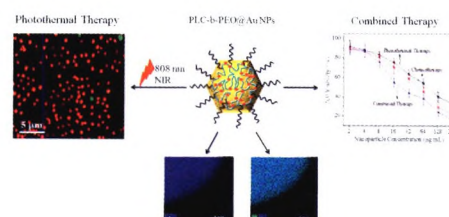
Siqi Yang^a, Linzhu Zhou^a, Yue Su^a, Rong Zhang^b, Chang-Ming Dong^{a,b}

^a School of Chemistry and Chemical Engineering, Shanghai Key Laboratory of Electrical Insulation and Thermal Ageing, Shanghai Jiao Tong University, Shanghai 200240, China

^b Joint Research Center for Precision Medicine, Shanghai Jiao Tong University Affiliated Sixth People's Hospital South Campus, Shanghai Fengxian Central Hospital, Shanghai 201400, China

We developed one-pot photoreduction strategy to fabricate the NIR-absorbing plasmonic PLC-b-PEO@Au NPs. It possessed strong NIR absorption at 700-1100 nm, an ultrahigh photothermal conversion efficiency of 62.1%, and good photostability.

Chinese Chemical Letters 30 (2019) 187



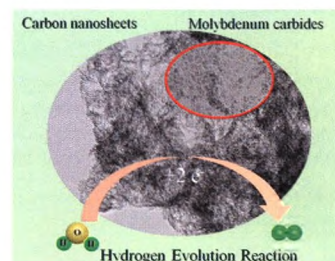
Ultrafine molybdenum carbide nanoparticles supported on nitrogen doped carbon nanosheets for hydrogen evolution reaction

Kedong Xia, Junpo Guo, Cuijuan Xuan, Ting Huang, Zhiping Deng, Lingxuan Chen, Deli Wang

Key laboratory of Material Chemistry for Energy Conversion and Storage (Huazhong University of Science and Technology), Ministry of Education, Hubei Key Laboratory of Material Chemistry and Service Failure, School of Chemistry and Chemical Engineering, Huazhong University of Science and Technology, Wuhan 430074, China

Nitrogen doped carbon nanosheets supported molybdenum carbides nanoparticles ($\text{Mo}_2\text{C}/\text{NCS}$) have been synthesized by tuning the mass ratio of melamine and ammonia molybdate. The $\text{Mo}_2\text{C}/\text{NCS}$ -10 exhibits superior electrocatalytic performance and stability for HER, which was attributed to N-doped carbon nanosheets, small particle size, mesoporous structure, and large electrochemical active surface area.

Chinese Chemical Letters 30 (2019) 192



MoS_2 decorated lignin-derived hierarchical mesoporous carbon hybrid nanospheres with exceptional Li-ion battery cycle stability

Feng Chen^a, Long Wu^a, Zeping Zhou^a, Jiajun Ju^b, Zhengping Zhao^c, Mingqiang Zhong^a, Tairong Kuang^b

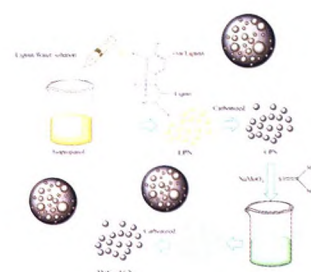
^a College of Material Science and Engineering, Zhejiang University of Technology, Hangzhou 310014, China

^b The Key Laboratory of Polymer Processing Engineering of Ministry of Education, South China University of Technology, Guangzhou 510640, China

^c Zhijiang College, Zhejiang University of Technology, Hangzhou 310014, China

We developed a feasible self-assembly and carbonization method to prepare lignin-derived porous carbon nanosphere (PCN) and its efficient embedment of MoS_2 without any additives. The obtained hybrid nanocomposite provides a possible route to develop high performance Li-ion battery from natural biomass or organizational structures.

Chinese Chemical Letters 30 (2019) 197



Ethylenediamine promoted the hydrogenative coupling of nitroarenes over Ni/C catalyst

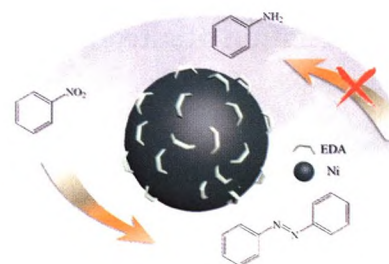
Youdi Yang^{a,b}, Shaopeng Li^{a,b}, Chao Xie^{a,b}, Hangyu Liu^{a,b}, Yanyan Wang^{a,b}, Qingqing Mei^a, Huizhen Liu^{a,b}, Buxing Han^{a,b}

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

^b School of Chemistry and Chemical Engineering, University of Chinese Academy of Sciences, Beijing 100049, China

In this work, we found that ethylenediamine can enrich the electron state of Ni and make the azobenzene easily desorb from the surface of the catalyst, which effectively inhibits the further hydrogenation to aniline and greatly improves the selectivity of azobenzene. When the ratio of Ni and ethylenediamine is 1:10, the yield of the azobenzene can reach 95.5%.

Chinese Chemical Letters 30 (2019) 203



First-principles study of methanol adsorption on heteroatom-doped phosphorene

Dongdong Liu^a, Yongliang Shi^b, Li Tao^b, Dafeng Yan^a, Ru Chen^a, Shuangyin Wang^{a,c,d}

^a State Key Laboratory of Chem/Bio-Sensing and Chemometrics, Provincial Hunan Key Laboratory for Graphene Materials and Devices, College of Chemistry and Chemical Engineering, Hunan University, Changsha 410082, China

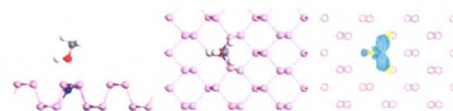
^b ICQD/Hefei National Laboratory for Physical Sciences at Microscale, and Key Laboratory of Strongly-Coupled Quantum Matter Physics, Chinese Academy of Sciences and Department of Physics, University of Science and Technology of China, Hefei 230026, China

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

^d Shenzhen Research Institute of Hunan University, Shenzhen 518057, China

First-principles calculations were firstly employed to investigate the adsorption of methanol on pristine and X-doped phosphorene (X = B, C, N and O). The N and O doping improved the adsorption of phosphorene with CH_3OH gas molecule, while B and C doping were almost not beneficial.

Chinese Chemical Letters 30 (2019) 207



Electronic, optical, and charge transport properties of A- π -A electron acceptors for organic solar cells: Impact of anti-aromatic π structures

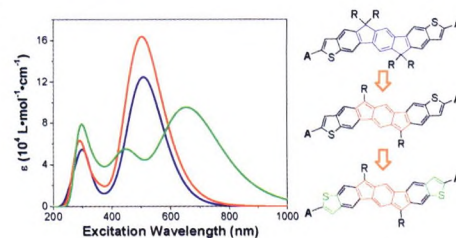
Yan Zeng^{a,b}, Ruihong Duan^b, Yuan Guo^b, Guangchao Han^b, Qingxu Li^a, Yuanping Yi^b

^a School of Science, Chongqing University of Posts and Telecommunications, Chongqing 400065, China

^b CAS Key Laboratory of Organic Solids, CAS Research/Education Center for Excellence in Molecular Sciences, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China

Anti-aromatization and isomerization are found to be an effective way to tune the optoelectronic properties of A- π -A electron acceptors for organic photovoltaics.

Chinese Chemical Letters 30 (2019) 211



Effects of processing additives in non-fullerene organic bulk heterojunction solar cells with efficiency > 11%

Shenkun Xie^a, Jianqiu Wang^a, Rong Wang^b, Dongyang Zhang^b, Huiqiong Zhou^c, Yuan Zhang^b, Defeng Zhou^a

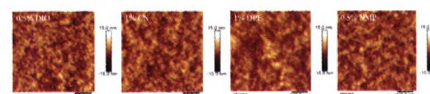
^a School of Chemistry and Life Science, Changchun University of Technology, Changchun 130012, China

^b HEEGER Beijing Research & Development Center, School of Chemistry, Beihang University, Beijing 100191, China

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

The solar cell surface morphologies with different additives observed with slightly changed in roughness. It is easily to get the best PCE of 11.1% with using 0.5% DIO additives.

Chinese Chemical Letters 30 (2019) 217



Simple non-fullerene electron acceptors with unfused core for organic solar cells

Yao Li^{a,b}, Yunhua Xu^a, Fan Yang^b, Xudong Jiang^b, Cheng Li^b, Shengyong You^c, Weiwei Li^{b,c}

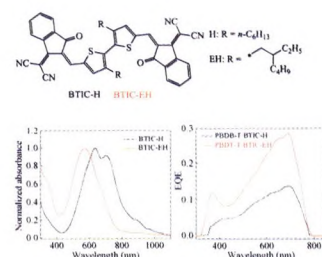
^a Department of Chemistry, School of Science, Beijing Jiaotong University, Beijing 100044, China

^b Beijing National Laboratory for Molecular Sciences, CAS Key Laboratory of Organic Solids, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China

^c Institute of Applied Chemistry, Jiangxi Academy of Sciences, Nanchang 330096, China

Two simple unfused-cores based electron acceptors with different side units were developed for application in non-fullerene solar cells, in which the side chains have the significant effect on their absorption spectra and photovoltaic performance.

Chinese Chemical Letters 30 (2019) 222



Photocatalytic hydrogen production from acidic aqueous solution in BODIPY-cobaloxime-ascorbic acid homogeneous system

An Xie^a, Zhong-Hua Pan^c, Miao Yu^c, Geng-Geng Luo^c, Di Sun^b

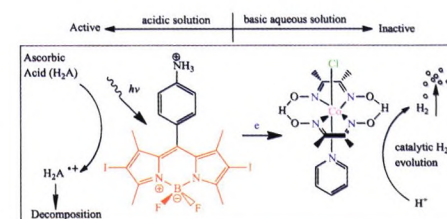
^a School of Materials Science and Engineering, Xiamen University of Technology, Xiamen 361024, China

^b School of Chemistry and Chemical Engineering, Shandong University, Ji'nan 250100, China

^c Fujian Key Laboratory of Photoelectric Functional Materials, College of Materials Science and Engineering, Huaqiao University, Xiamen 361021, China

For the first time, iodinated BODIPY dyes with phenylamine or 8-hydroxyquinoline moiety at the *meso*-position on the BODIPY core were tested for the light-driven production of H₂ from the acidic aqueous solutions.

Chinese Chemical Letters 30 (2019) 225



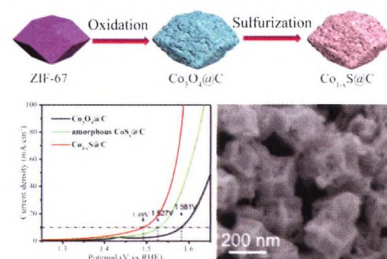
Co_{1-x}S embedded in porous carbon derived from metal organic framework as a highly efficient electrocatalyst for oxygen evolution reaction

Denghong He, Xiaolin Wu, Wei Liu, Chaojun Lei, Chunlin Yu, Guokui Zheng, Junjie Pan, Lecheng Lei, Xingwang Zhang

Key Laboratory of Biomass Chemical Engineering of Ministry of Education, College of Chemical and Biological Engineering, Zhejiang University, Hangzhou 310027, China

Here, we report a two-step conversion method to fabricate a composite of Co_{1-x}S embedded in porous carbon framework (Co_{1-x}S@C) derived from metal organic frameworks (MOFs). The as-prepared porous dodecahedron Co_{1-x}S@C composite catalyst exhibits excellent electrocatalytic performance towards oxygen evolution reaction (OER).

Chinese Chemical Letters 30 (2019) 229



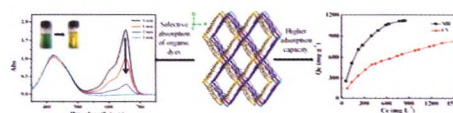
An anionic In(III)-based metal-organic framework with Lewis basic sites for the selective adsorption and separation of organic cationic dyes

Qi Yang, Bin Wang, Ya Chen, Yabo Xie, Jianrong Li

Beijing Key Laboratory for Green Catalysis and Separation and Department of Chemistry and Chemical Engineering, College of Environmental and Energy Engineering, Beijing University of Technology, Beijing 100124, China

An In(III)-based metal-organic framework (**BUT-29**) can selectively absorb cationic dyes in DMF even in the presence of other organic dyes, and has the higher adsorption capacity.

Chinese Chemical Letters 30 (2019) 234



Biologically inspired silk fibroin grafted polyacrylonitrile filtration membrane prepared in ZnCl₂ aqueous solution

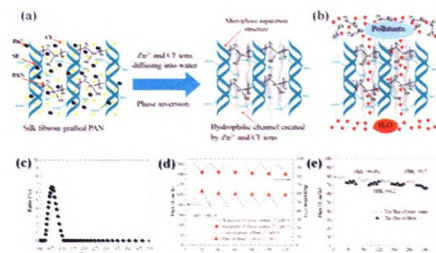
Jingang Li^a, Shuwen Li^a, Xiaohui Wang^a, Fan Fan^b, Kongyin Zhao^a, Junfu Wei^a, Linhua Zhang^b, Dunwan Zhu^b

^a State Key Laboratory of Separation Membranes and Membrane Processes, Tianjin Polytechnic University, Tianjin 300387, China

^b Tianjin Key Laboratory of Biomedical Materials, Institute of Biomedical Engineering, Chinese Academy of Medical Sciences & Peking Union Medical College, Tianjin 300192, China

Biologically inspired silk fibroin grafted polyacrylonitrile (SF-g-PAN) filtration membrane was prepared using ZnCl₂ aqueous solution as solvent, avoiding the use of organic solvents.

Chinese Chemical Letters 30 (2019) 239



Design, synthesis and biological evaluation of a novel platinum(II) complex possessing bioreductive groups for cancer therapy

Chengken Chen^{a,b}, Chunmei Gao^c, Zigao Yuan^{b,e}, Yuyang Jiang^{b,d,e}

^a Department of Chemistry, Tsinghua University, Beijing 100084, China

^b The Ministry-Province Jointly Constructed Base for State Key Lab-Shenzhen Key Laboratory of Chemical Biology, The Graduate School at Shenzhen, Tsinghua University, Shenzhen 518055, China

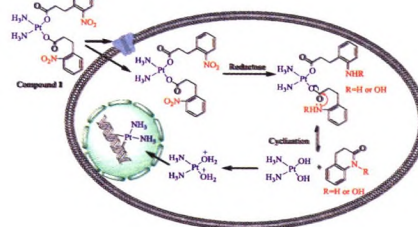
^c College of Chemistry and Chemical Engineering, Shenzhen University, Shenzhen 518060, China

^d Department of Pharmacology and Pharmaceutical Sciences, School of Medicine, Tsinghua University, Beijing 100084, China

^e Shenzhen Kivita Innovative Drug Discovery Institute, Shenzhen 518055, China

A Pt(II) complex possessing bioreductive groups was constructed and evaluated as a more potent antitumor agent than cisplatin.

Chinese Chemical Letters 30 (2019) 243



Design and synthesis of novel water-soluble amino acid derivatives of chlorin p₆ ethers as photosensitizer

Xingjie Zhang^a, Zhi Meng^a, Zhiqiang Ma^a, Junhong Liu^a, Guiyan Han^a, Fujia Ma^b, Ningyang Jia^c, Zhenyuan Miao^a, Wannian Zhang^a, Chunquan Sheng^a, Jianzhong Yao^a

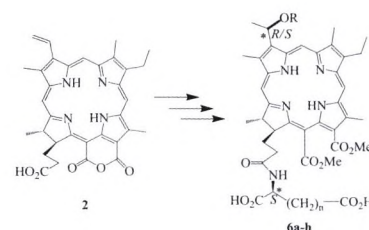
^a Department of Medicinal Chemistry, School of Pharmacy, Second Military Medical University, Shanghai 200433, China

^b Department of Pharmacy, 455th Hospital of Chinese People's Liberation Army, Shanghai 200052, China

^c Department of Radiology, Shanghai Eastern Hepatobiliary Surgery Hospital, Second Military Medical University, Shanghai 200438 China

Eight new water-soluble amino acid derivatives of chlorin p₆ ethers **6a-h** were designed and synthesized using purpurin-18 (**2**) as key intermediate. All target compounds exhibited better phototoxicity than talaporfin and the most phototoxic compound **6d** showed IC₅₀ values of 0.20 μmol/L against A549 cell and 0.41 μmol/L against B16-F10 cell, which represented 31- and 24-fold increase of PDT antitumor efficacy compared to talaporfin.

Chinese Chemical Letters 30 (2019) 247



Novel dual inhibitors against FP-2 and PfDHFR as potential antimalarial agents: Design, synthesis and biological evaluation

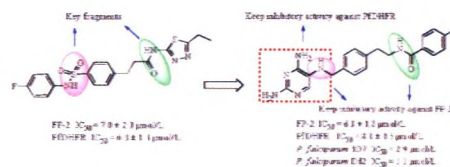
Wenhua Chen^a, Xue Yao^a, Zhenghui Huang^b, Fei Mao^a, Longfei Guan^a, Yun Tang^a, Hualiang Jiang^a, Jian Li^a, Jin Huang^a, Lubin Jiang^b, Jin Zhu^a

^a Shanghai Key Laboratory of New Drug Design, School of Pharmacy, East China University of Science and Technology, Shanghai 200237, China

^b Key Laboratory of Molecular Virology & Immunology, Unit of Human Parasite Molecular and Cell Biology, Institute Pasteur of Shanghai, University of Chinese Academy of Science, Shanghai 200031, China

A series of novel 2,4-diaminopyrimidine-modified compounds was designed and synthesized. Compound **14** showed micromolar dual inhibitory effect on both FP-2 and PfDHFR, and potential inhibition to the proliferation of *P. falciparum* 3D7 strain and chloroquine-resistant *P. falciparum* Dd2 strain.

Chinese Chemical Letters 30 (2019) 250



Water bridges are essential to neonicotinoids: Insights from synthesis, bioassay and molecular modelling studies

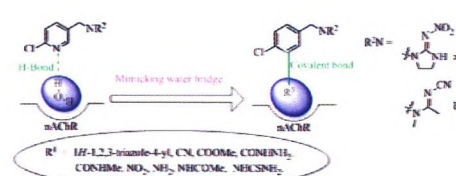
Chengchun Zhu^a, Guanglong Li^a, Keya Xiao^a, Xusheng Shao^a, Jiagao Cheng^a, Zhong Li^{a,b}

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

^b Shanghai Collaborative Innovation Center for Biomanufacturing Technology, Shanghai 200237, China

To identify the detailed roles of water bridges in neonicotinoids recognition, twenty-four neonicotinoids compounds were designed, synthesized, bioassayed and modelled. Of all nine fragments mimicking water bridges, cyano group was the optimal one. The insecticidal activities indicated that the water bridge might be stable in the active site and was not suitable to be replaced by other groups, which highlighted the significance of water bridges for neonicotinoids.

Chinese Chemical Letters 30 (2019) 255



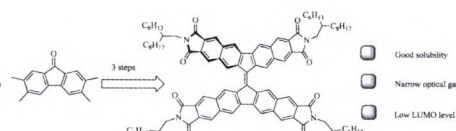
Tetra-phthalimide end-fused bifluorenylidene: Synthesis and characterization

Debin Xia, Fangyuan Zhang, Zhigang Liu, Linghao Meng, Ruiqing Fan, Yulin Yang

MIIT Key Laboratory of Critical Materials Technology for New Energy Conversion and Storage, School of Chemistry and Chemical Engineering, Harbin Institute of Technology, Harbin 150001, China

A novel electron acceptor, namely, tetra-phthalimide end-fused bifluorenylidene (3D-imide) was designed and synthesized.

Chinese Chemical Letters 30 (2019) 259



Gram-scale preparation of dialkylideneacetones through $\text{Ca}(\text{OH})_2$ -catalyzed Claisen-Schmidt condensation in dilute aqueous EtOH

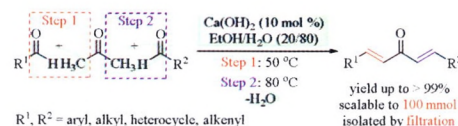
Hao Zhang^{a,b}, Mengting Han^b, Chenggen Yang^b, Lei Yu^{a,b}, Qing Xu^b

^a Guangling College, Yangzhou University, Yangzhou 225002, China

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

A practical synthetic method of dialkylideneacetones has been developed. Compared with known protocols, the method employed catalytic $\text{Ca}(\text{OH})_2$ as the cheap, mild base catalyst and dilute aqueous EtOH (20%, v/v) as the green and safe solvent. The products could be synthesized in gram-scale and isolated by a simple filtration.

Chinese Chemical Letters 30 (2019) 263



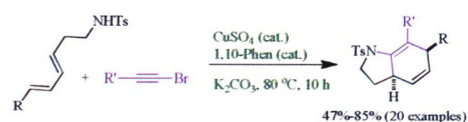
One-pot synthesis of tetrahydroindoles via a copper catalyzed *N*-alkylation/[4+2] cycloaddition cascade

Chun Jiang, Piao-Piao Yu, Qing Zhang, Hua-Dong Xu, Mei-Hua Shen

School of Pharmaceutical Engineering & Life Science, Changzhou University, Changzhou 213164, China

4,7-Dihydroindolines are prepared from alkyne bromides and 2-dienyl sulfonamides via a CuSO_4 catalyzed cascade in a one-pot fashion.

Chinese Chemical Letters 30 (2019) 266



A one-pot protocol for copper-mediated azide-alkyne cycloaddition using alkenyl triflate precursors

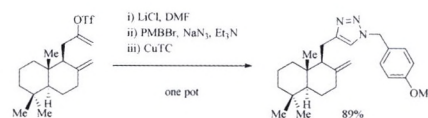
Yu Chen^{a,b}, Lianchao Liu^b, Dimin Wu^b, Yu-Peng He^a, Ang Li^b

^a College of Chemistry, Chemical Engineering and Environmental Engineering, Liaoning Shihua University, Fushun 113001, China

^b State Key Laboratory of Bioorganic and Natural Products Chemistry, Center for Excellence in Molecular Synthesis, Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, Shanghai 200032, China

Taking advantage of LiCl-promoted elimination of alkenyl triflates, we developed a one-pot protocol for copper-mediated azide-alkyne cycloaddition using alkenyl triflate precursors, which may find potential use in sequential click reactions.

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