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Chinese Chemical Letters (中国化学快报)

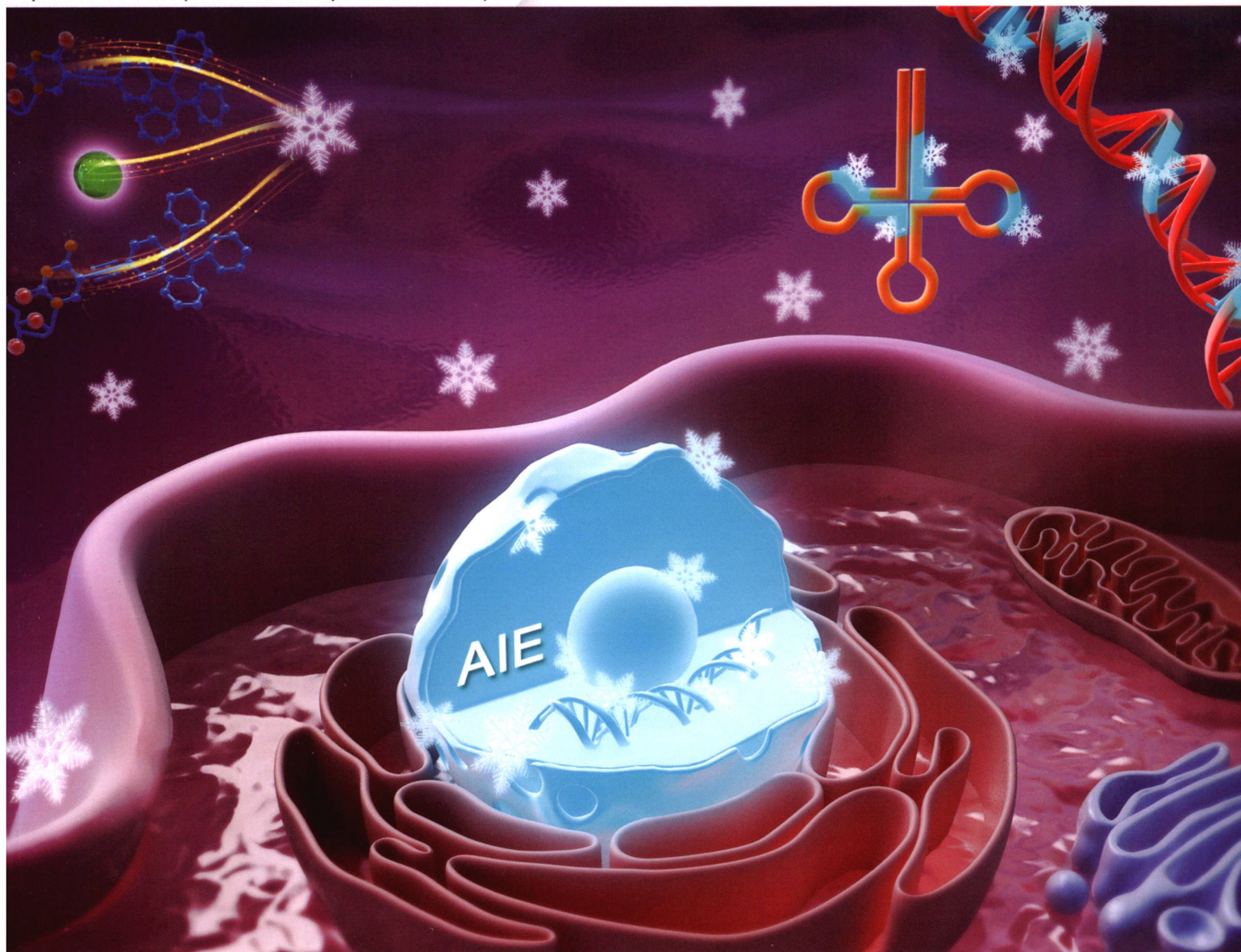
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REVIEW

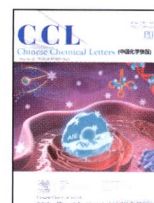
Lian Jin, Zhiyang Li, Nongyue He et al.
Current signal amplification strategies in
aptamer-based electrochemical biosensor:
A review

COMMUNICATION

Zhanxian Li, Mingming Yu et al.
A mitochondrial-targeted ratiometric probe
for detecting intracellular H₂S with high
photostability

Chinese Chemical Society

万方数据 Institute of Materia Medica, Chinese Academy of Medical Sciences



Graphical Abstracts/Chin Chem Lett 32 (2021) iii–xiv

Editorial

Editorial: Green organic synthesis

Wei-Min He^a, Xiuling Cui^b^a School of Chemistry and Chemical Engineering, University of South China, Hengyang 421001, China^b Engineering Research Centre of Molecular Medicine of Ministry of Education, Key Laboratory of Fujian Molecular Medicine, Key Laboratory of Precision Medicine and Molecular Diagnosis of Fujian Universities, Key Laboratory of Xiamen Marine and Gene Drugs, School of Biomedical Sciences, Huaqiao University, Xiamen 361021, China

The Green Organic Synthesis Virtual Issue introduces readers some new advantage of multicomponent reactions, green solvents, and visible-light-induced organic transformations, electrochemical organic synthesis and takes Chinese Chemical Letters as a platform to share their results with peers.

Chinese Chemical Letters 32 (2021) 1589



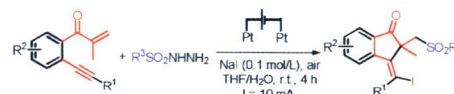
Highlight

Electrosynthesis of 1-indanones

Jun Jiang^a, Zheng Wang^b, Wei-Min He^a^a School of Chemistry and Chemical Engineering, University of South China, Hengyang 421001, China^b Department of Chemistry and Bioengineering, Hunan University of Science and Engineering, Yongzhou 425199, China

The recent electrocatalytic three-component annulation-halosulfonation of 1,6-enynes toward 1-indanones is highlighted.

Chinese Chemical Letters 32 (2021) 1591



Reviews

Current signal amplification strategies in aptamer-based electrochemical biosensor: A review

Lei He^a, Rongrong Huang^b, Pengfeng Xiao^a, Yuan Liu^a, Lian Jin^a, Hongna Liu^a, Song Li^a, Yan Deng^c, Zhu Chen^c, Zhiyang Li^b, Nongyue He^{a,c}^a State Key Laboratory of Bioelectronics, School of Biological Science and Medical Engineering, National Demonstration Center for Experimental Biomedical Engineering Education (Southeast University), Southeast University, Nanjing 210096, China^b Department of Clinical Laboratory, the Affiliated Drum Tower Hospital of Nanjing University Medical School, Nanjing 210008, China^c Economical Forest Cultivation and Utilization of 2011 Collaborative Innovation Center in Hunan Province, Hunan Key Laboratory of Biomedical Nanomaterials and Devices, Hunan University of Technology, Zhuzhou 412007, China

In order to achieve the detection of biomolecules with low abundance, different amplification strategies based on aptamers have been explored. Different materials as various function was used in the strategies to amplify detecting signal. This review discusses recent advances in signal amplification methods and their applications. Critical assessment of each method is also considered.

Chinese Chemical Letters 32 (2021) 1593

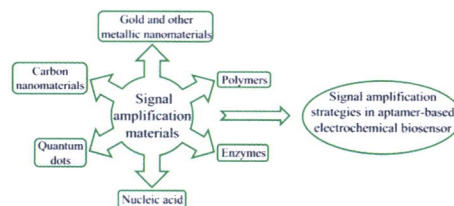


Photo-crosslinkable hydrogel and its biological applications

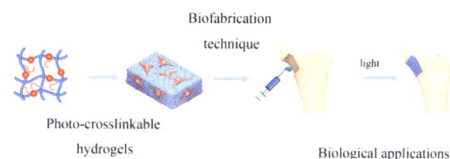
Yuting Wang^{a,b}, Shu Zhang^{a,b}, Jian Wang^{a,b}

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

^b West China School of Stomatology, Sichuan University, Chengdu 610041, China

Photo-crosslinkable hydrogels can be easily biofabricated for biological tissue engineering applications, through the exposure to ultraviolet or visible light.

Chinese Chemical Letters 32 (2021) 1603



STING-activating drug delivery systems: Design strategies and biomedical applications

Chunying Li^{a,b}, Yifan Zhang^b, Yilin Wan^b, Jingle Wang^c, Jing Lin^b, Zhiming Li^a, Peng Huang^{a,b}

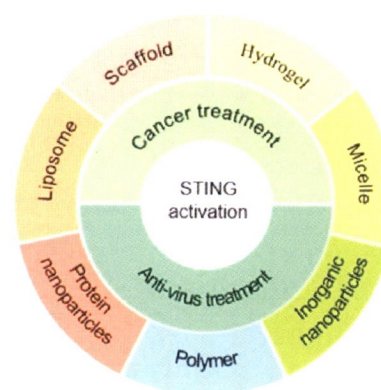
^a Department of Dermatology and Venereology, The First Affiliated Hospital of Wenzhou Medical University, Wenzhou 325000, China

^b Marshall Laboratory of Biomedical Engineering, International Cancer Center, Laboratory of Evolutionary Therapeutics (LET), School of Biomedical Engineering, Shenzhen University Health Science Center, Shenzhen 518060, China

^c Department of Medical Oncology, The Third Affiliated Hospital of Shanghai University, Wenzhou 325000, China

STING agonist is recognized as a promising drug for cancer treatment and anti-virus treatment due to its advantages inducing the generation of type I interferons (IFNs) and pro-inflammatory factors, and plays a crucial role in the innate immune barrier in the human body. Cyclic dinucleotides (CDN) as a synthetic STING agonist that currently undergoing clinical trials by single-drug intratumoral injection or combination with PD-1/PD-L1 antibody to treat various malignant tumors. However, its poor cell targeting, rapid clearance, and low-efficiency cytosol transport hinder the broad application of STING agonist. Therefore, enhancing delivery efficiency of STING agonists remains an urgent challenge. In this review, the detailed description of how existing drug delivery system (DDSs) are designed to overcome delivery barriers to activate the STING pathway, and the current biomedical applications of STING-activating DDSs in the treatments of infectious diseases and tumors were summarized.

Chinese Chemical Letters 32 (2021) 1615



The carbon nanotubes-based materials and their applications for organic pollutant removal: A critical review

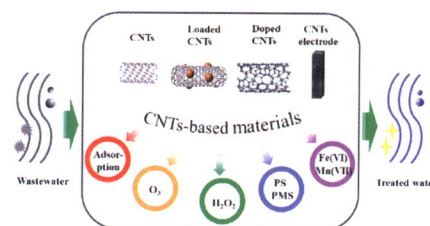
Jiali Peng^{a,b}, Yongli He^{a,b}, Chenying Zhou^{a,b}, Shijun Su^a, Bo Lai^{a,b}

^a State Key Laboratory of Hydraulics and Mountain River Engineering, College of Architecture and Environment, Sichuan University, Chengdu 610065, China

^b Sino-German Centre for Water and Health Research, Sichuan University, Chengdu 610065, China

Carbon nanotubes (CNTs) with special nano-sized structure, relatively large specific surface areas and electrical conductivity characteristics could be rationally designed to different types of CNTs-based materials for organic pollutant removal in adsorption process and AOPs. The review summarizes in-depth insights into the characteristics and mechanisms of CNTs-based materials applied in wastewater treatment.

Chinese Chemical Letters 32 (2021) 1626



The application of clean production in organic synthesis

Jun Jiang^a, Fang Xiao^b, Wei-Min He^a, Leyong Wang^c

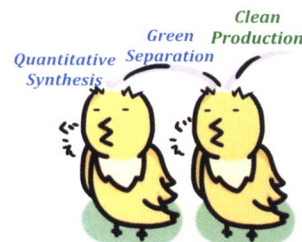
^a School of Chemistry and Chemical Engineering, University of South China, Hengyang 421001, China

^b Xiangya School of Public Health, Central South University, Changsha 410078, China

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

Clean production, as an important part of green chemistry, has received great attention and considerable development in recent years. In this perspective article, we summarized some examples of (nearly) quantitative synthesis, clean separation and purification to emphasize clean production. These reactions were carried out by using eco-friendly solvents and the pure products could be easily obtained through clean procedures.

Chinese Chemical Letters 32 (2021) 1637



A small molecule inhibitor targeting SHP2 mutations for the lung carcinoma

Qing Nian^a, Jinhao Zeng^a, Li He^e, Yu Chen^b, Zhiqiang Zhang^c, Fernando Rodrigues-Lima^d, Liyun Zhao^e, Xuanlin Feng^f, Jianyou Shi^e

^a Hospital of Chengdu University of Traditional Chinese Medicine, Chengdu 610072, China

^b School of Clinical Medicine, Chengdu University of TCM, Chengdu 610072, China

^c Department of Emergency, Binzhou Medical University Hospital, Binzhou 256603, China

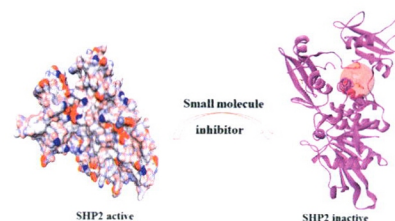
^d Unité de Biologie Fonctionnelle et Adaptative, Université de Paris, Paris 75013, France

^e Department of Pharmacy, Sichuan Academy of Medical Sciences & Sichuan Provincial People's Hospital, Personalized Drug Therapy Key Laboratory of Sichuan Province, School of Medicine, University of Electronic Science and Technology of China, Chengdu 610072, China

^f Department of EICU, Sichuan Academy of Medical Sciences & Sichuan Provincial People's Hospital, Chengdu 610072, China

The small molecule inhibitors described in this review bind to the SHP2 catalytic site, inactivating the SHP2 protein and reducing its carcinogenic effect.

Chinese Chemical Letters 32 (2021) 1645



Communications

Curvature-regulated transmembrane anion transport by a trifluoromethylated bisbenzimidazole

Xiao-Qiao Hong^b, Yuan-Yuan Xing^a, Zhong-Kun Wang^a, Qin-Chao Mao^c, Wen-Hua Chen^{a,d}

^a School of Biotechnology and Health Sciences, Wuyi University, Jiangmen 529020, China

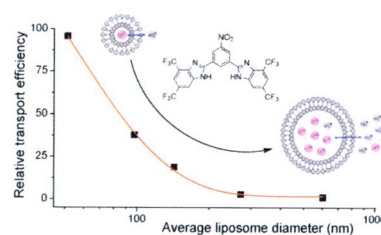
^b School of Pharmaceutical Sciences, Tsinghua University, Beijing 100084, China

^c Guangdong Maoming Health Vocational College, Maoming 525000, China

^d State Key Laboratory of Chemical Oncogenomics, Key Laboratory of Chemical Genomics, Peking University Shenzhen Graduate School, Shenzhen 518055, China

The anion transport efficiency of a trifluoromethylated bisbenzimidazole may be greatly regulated by the curvature of the liposomes used.

Chinese Chemical Letters 32 (2021) 1653



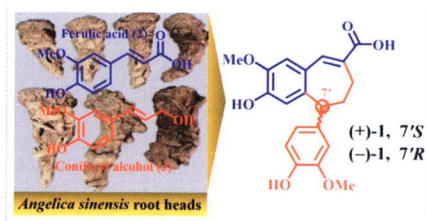
(+)-/(-)-Angeliganine, a pair of neolignan enantiomers with an unprecedented carbon skeleton from an aqueous extract of the *Angelica sinensis* root head

Youzhe Chen, Qinglan Guo, Chengbo Xu, Chenggen Zhu, Jianjun Zhang, Jiangong Shi

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

A pair of 2,7'-cyclo-8,9'-neolignan enantiomers with an unprecedented carbon skeleton and hypnotic effect were isolated and structurally characterized from an aqueous extract of the *Angelica sinensis* root heads (guitou). Biogenetically, the carbon skeleton is postulated from coupling between ferulic acid and coniferyl alcohol.

Chinese Chemical Letters 32 (2021) 1657



Repurposing of antitumor drug candidate Quisinostat lead to novel spirocyclic antimalarial agents

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Institute for Advanced Study, Shenzhen University, Shenzhen 518060, China

^a State Key Laboratory of Bioreactor Engineering, 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 and Immunology, Institut Pasteur of Shanghai, University of Chinese Academy of Sciences, Chinese Academy of Sciences, Shanghai 200031, China

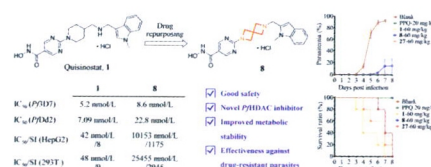
^c College of Pharmacy and Chemistry, Dali University, Dali 671000, China

^d Frontiers Science Center for Materiobiology and Dynamic Chemistry, East China University of Science and Technology, Shanghai 200237, China

^e School of Life Science and Technology, ShanghaiTech University, Shanghai 201210, China

By repurposing clinical phase II antitumor drug candidate Quisinostat, we designed and synthesized 30 novel spirocyclic linker derivatives, and found an optimal compound **8** that could effectively eliminate both wild-type and multi-drug resistant *P. falciparum* parasites, and display good safety both in cytotoxic experiment and animal experiment.

Chinese Chemical Letters 32 (2021) 1660



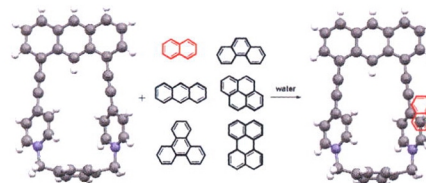
High-yield synthesis of a novel water-soluble macrocycle for selective recognition of naphthalene

Man-Hua Ding, Juan Liao, Lin-Li Tang, Guang-Chuan Ou, Fei Zeng

Department of Biology and Chemistry, Hunan University of Science and Engineering, Key Laboratory Comprehensive Utilization of Dominant Plants Resources in South Hunan, Yongzhou 425199, China

A novel water-soluble macrocycle was synthesized in high yield. It can selectively encapsulate of naphthalene to form a 1:1 complex.

Chinese Chemical Letters 32 (2021) 1665



Excited-state conformation capture by supramolecular chains towards triplet-involved organic emitters

Hao Liu^a, Naoki Ando^b, Shigehiro Yamaguchi^{b,c}, Panče Naumov^d, Hongyu Zhang^a

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

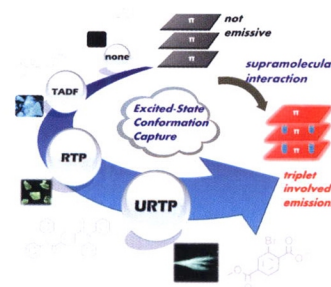
^b Department of Chemistry, Graduate School of Science, and Integrated Research Consortium on Chemical Sciences (IRCCS), Nagoya University, Furo Chikusa, Nagoya 464-8602, Japan

^c Institute of Transformative Bio-Molecules (WPI-ITbM), Nagoya University, Furo Chikusa, Nagoya 464-8602, Japan

^d New York University Abu Dhabi, PO Box 129188, Abu Dhabi, United Arab Emirates

Excited-state conformation capture methodology was proposed for the construction of different types of triplet-involved emission materials (TADF, RTP, heavy-atom-free RTP and ultra RTP).

Chinese Chemical Letters 32 (2021) 1669



Alkali-metal hexamethyldisilazide initiated polymerization on alpha-amino acid N-substituted N-carboxyanhydrides for facile polypeptoid synthesis

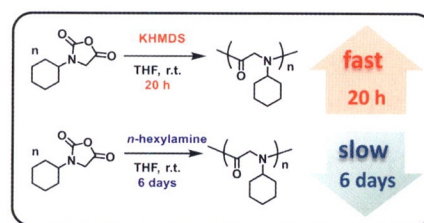
Yueming Wu^a, Min Zhou^b, Kang Chen^b, Sheng Chen^b, Ximian Xiao^b, Zhemin Ji^b, Jingcheng Zou^b, Runhui Liu^{a,b}

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

^b Key Laboratory for Ultrafine Materials of Ministry of Education, Frontiers Science Center for Materiobiology and Dynamic Chemistry, Research Center for Biomedical Materials of Ministry of Education, School of Materials Science and Engineering, East China University of Science and Technology, Shanghai 200237, China

Alkali-metal hexamethyldisilazide (Li/Na/KHMDS) can initiate a substantially faster polymerization on NNCA than do commonly used amine initiators, especially for inactive NNCA with bulky N-substitution group. This fast NNCA polymerization will increase the structure diversity and application of polypeptoids as synthetic mimics of polypeptides.

Chinese Chemical Letters 32 (2021) 1675



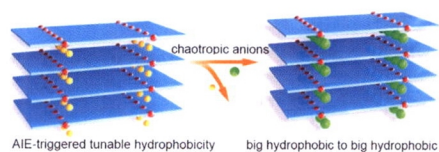
Unprecedented tunable hydrophobic effect and anion recognition triggered by AIE with Hofmeister series in water

Pan Wang, Shixian Cao, Ting Yin, Xin-Long Ni

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

An unprecedented tunable hydrophobic effect was observed in AIE system and showing hydrophobic binding of chaotropic anions with the Hofmeister series in water.

Chinese Chemical Letters 32 (2021) 1679



Convenient synthesis of hexasubstituted benzene derivatives via DABCO promoted domino reaction of arylidene malononitrile and dialkyl but-2-ynedioate

Hui Zheng, Ying Han, Jing Sun, Chao-Guo Yan

College of Chemistry & Chemical Engineering, Yangzhou University, Yangzhou 225002, China

A convenient synthetic protocol for the hexasubstituted benzene derivatives was successfully developed by DABCO promoted domino reaction of arylidene malononitrile with two molecules of dialkyl but-2-ynedioates. This formal [2 + 2 + 2] cycloaddition proceeded via sequential nucleophilic addition, Michael addition, annulation and aromatization processes.

Chinese Chemical Letters 32 (2021) 1683



Biocompatible and noncytotoxic nucleoside-based AIEgens sensor for lighting-up nucleic acids

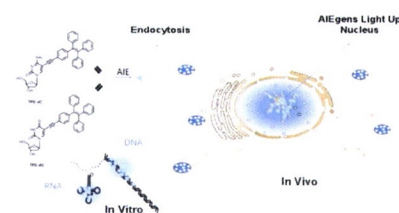
Qiuyun Xiao^{a,b}, Xuan Zhao^a, Hai Xiong^a

^a Institute for Advanced Study, Shenzhen University, Shenzhen 518060, China

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

Biocompatible and noncytotoxic nucleoside-based AIEgens sensors were established for the detection of ctDNA and rRNA *in vitro*. The aggregates of TPE-dC and TPE-dU light up the nucleus *in vivo*, which exhibits intense fluorescence and superior stability.

Chinese Chemical Letters 32 (2021) 1687



Conformational effect on fluorescence emission of tetraphenylethylene-based metallacycles

Zhewen Guo^a, Jun Zhao^a, Yuhang Liu^a, Guangfeng Li^a, Heng Wang^b, Yali Hou^c, Mingming Zhang^c, Xiaopeng Li^b, Xuzhou Yan^a

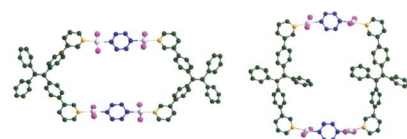
^a School of Chemistry and Chemical Engineering, Frontiers Science Center for Transformative Molecules, Shanghai Jiao Tong University, Shanghai 200240, China

^b College of Chemistry and Environmental Engineering, Shenzhen University, Shenzhen 518055, China

^c State Key Laboratory for Mechanical Behavior of Materials, Shaanxi International Research Center for Soft Matter, School of Materials Science and Engineering, Xi'an Jiaotong University, Xi'an 710049, China

Herein, we designed and constructed two metallacycles to illustrate the conformational effect of isomeric AIE fluorophores on the platform of supramolecular coordination complexes (SCCs).

Chinese Chemical Letters 32 (2021) 1691



Water and fluorinated alcohol mediated/promoted tandem insertion/aerobic oxidation/bisindolylolation under metal-free conditions: Easy access to bis(indolyl)methanes

Yong Wang^a, Xinyi Cao^b, Jingfei Ji^b, Xiuling Cui^a, Chao Pi^a, Leyao Zhao^b, Yangjie Wu^a

^a Henan Key Laboratory of Chemical Biology and Organic Chemistry, Key Laboratory of Applied Chemistry of Henan Universities, Green Catalysis Center, and College of Chemistry, Zhengzhou University, Zhengzhou 450052, China

^b International College, Zhengzhou University, Zhengzhou 450052, China

A green tandem reaction, including insertion/aerobic oxidation/bisindolylolation, to access 3,3'-bis(indolyl)methanes with quaternary carbon promoted by water and fluorinated alcohol has been developed under catalyst-free conditions. Wolff rearrangement products were afforded in non-polar solvent.

Chinese Chemical Letters 32 (2021) 1696



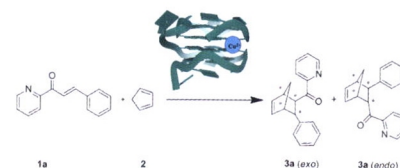
Enantioselective Diels–Alder reactions with left-handed G-quadruplex DNA-based catalysts

Kun Chen, Zhiyong He, Wei Xiong, Chun-jiang Wang, Xiang Zhou

College of Chemistry and Molecular Sciences, Key Laboratory of Biomedical Polymers of Ministry of Education, Wuhan University, Wuhan 430072, China

We first used left-handed G-quadruplex (G4) to catalyze the enantioselective Diels–Alder reaction. Assembled with Cu^{2+} ions, it can catalyze the enantioselective Diels–Alder in water with a good enantioselectivity (up to 52% *ee*). A better enantioselectivity (up to 80% *ee*) was observed after adding G4 ligands.

Chinese Chemical Letters 32 (2021) 1701



Oxidative dual C–H sulfenylation: A strategy for the synthesis of bis(imidazo[1,2-*a*]pyridin-3-yl)sulfanes under metal-free conditions using sulfur powder

Ziyu Gan^{a,b}, Xiaolong Zhu^b, Qiuli Yan^b, Xiuyan Song^b, Daoshan Yang^b

^a School of Chemistry and Chemical Engineering, Qufu Normal University, Qufu 273165, China

^b Key Laboratory of Optic-electric Sensing and Analytical Chemistry for Life Science, MOE, State Key Laboratory Base of Eco-Chemical Engineering, College of Chemistry and Molecular Engineering, Qingdao University of Science and Technology, Qingdao 266042, China

An efficient approach to sulfur-bridged imidazopyridines has been developed under metal-free conditions using inexpensive sulfur powder as the sulfur source. Most appealingly, the reaction can proceed smoothly without addition of any additives, ultimately decreasing the production of chemical waste. The inexpensive and green method should provide a useful strategy for constructing a library of novel and biological interesting heteroaromatic sulfides.

Chinese Chemical Letters 32 (2021) 1705



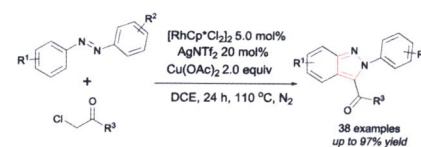
Rh(III)-catalyzed annulation of azobenzenes and α -Cl ketones toward 3-acyl-2*H*-indazoles

Huan Li, Yuxuan Han, Zi Yang, Zhenyu Yao, Lianhui Wang, Xiuling Cui

Engineering Research Centre of Molecular Medicine of Ministry of Education, Key Laboratory of Fujian Molecular Medicine, Key Laboratory of Precision Medicine and Molecular Diagnosis of Fujian Universities, Key Laboratory of Xiamen Marine and Gene Drugs, School of Biomedical Sciences, Huaqiao University, Xiamen 361021, China

Rhodium(III)-catalyzed [4 + 1] cyclization of azobenzenes with α -Cl ketones has been developed. 3-Acyl-2*H*-indazoles could be easily obtained in up to 97% yields for more than 30 examples. Easily available azobenzenes and α -Cl ketones allow the reaction to proceed smoothly under the mild reaction conditions with excellent yields and large functional groups tolerance.

Chinese Chemical Letters 32 (2021) 1709



One-pot tandem route to fused indolizidines and quinolizidines: Application in the synthesis of alkaloids and bioactive compounds

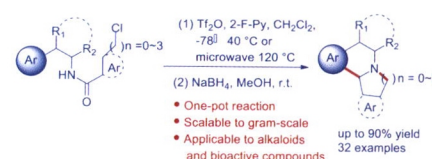
Qiao Song^a, Yan Liu^b, Linlin Cai^b, Xinyu Cao^b, Shan Qian^a, Zhouyu Wang^b

^a Department of Pharmaceutics Engineering, Xihua University, Chengdu 610039, China

^b Department of Chemistry, Xihua University, Chengdu 610039, China

A one-pot tandem route to fused indolizidines and quinolizidines with mild conditions is disclosed and applied to the total synthesis of some natural products and bioactive compounds.

Chinese Chemical Letters 32 (2021) 1713



Selective annulation of benzamides with internal alkynes catalyzed by an electron-deficient rhodium catalyst

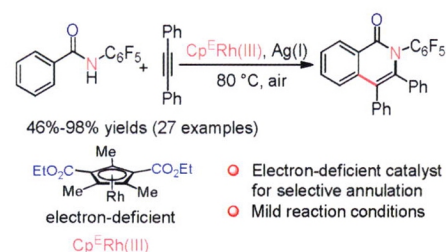
Ping Zhang^a, Wenju Chang^b, Hongyun Jiao^b, Yanshang Kang^a, Wenxuan Zhao^b, Peipei Cui^a, Yong Liang^b, Wei-Yin Sun^a, Yi Lu^a

^a Coordination Chemistry Institute, State Key Laboratory of Coordination Chemistry, School of Chemistry and Chemical Engineering, Nanjing National Laboratory of Microstructures, Collaborative Innovation Center of Advanced Microstructures, Nanjing University, Nanjing 210023, China

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

An electron-deficient $[\text{Cp}^{\text{F}}\text{RhCl}_2]_2$ catalyzed annulation of *N*-pentafluorophenylbenzamides with internal alkynes was successfully established under mild reaction conditions.

Chinese Chemical Letters 32 (2021) 1717



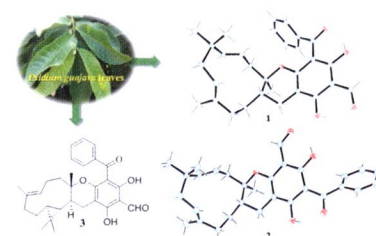
Psiguamers A–C, three cytotoxic meroterpenoids bearing a methylated benzoylphloroglucinol framework from *Psidium guajava* and total synthesis of 1 and 2

Jiwu Huang, Chuangjun Li, Jie Ma, Yingda Zang, Xingyan Sun, Xiaoguang Chen, Dongming Zhang

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

Three novel meroterpenoids, psiguamers A–C (**1–3**), were identified from the leaves of *Psidium guajava*. The total synthesis of (\pm)-**1** and (\pm)-**2** was achieved.

Chinese Chemical Letters 32 (2021) 1721



A novel aptamer-based histochemistry assay for specific diagnosis of clinical breast cancer tissues

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

^b School of Chemistry and Chemical Engineering, Southeast University, Nanjing 211189, China

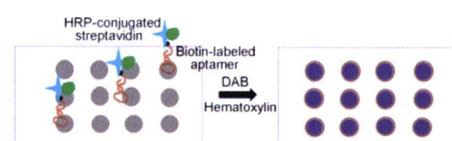
^c Department of Pathology, The First Affiliated Hospital of Nanjing Medical University, Nanjing 210029, China

^d Department of Pathology, Hunan Provincial Maternal and Child Health Care Hospital, Changsha 410008, China

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

An aptamer-based histochemistry (aptahistochemistry) assay was developed for specific diagnosis of clinical breast cancer tissues, which can specifically distinguish Luminal A breast cancer molecular subtype from Luminal B (HER2+), HER2-enriched, and triple-negative breast cancer molecular subtypes, as well as *para*-carcinoma tissue, mastitis tissue and normal breast tissue, holding a great potential for clinical pathological diagnosis applications.

Chinese Chemical Letters 32 (2021) 1726



Shear-responsive peptide/siRNA complexes as lung-targeting gene vectors

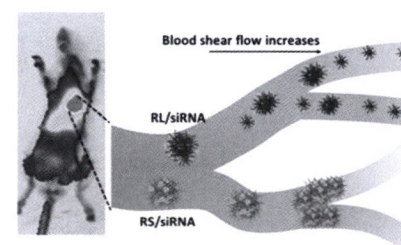
Dongxiao Yin^a, Mengjie Zhang^b, Jiaxin Chen^a, Yuanyu Huang^b, Dehai Liang^a

^a Beijing National Laboratory for Molecular Sciences and the Key Laboratory of Polymer Chemistry and Physics of Ministry of Education, College of Chemistry and Molecular Engineering, Peking University, Beijing 100871, China

^b School of Life Science, Advanced Research Institute of Multidisciplinary Science, Institute of Engineering Medicine, Key Laboratory of Molecular Medicine and Biotherapy, Beijing Institute of Technology, Beijing 100081, China

All *de novo* designed cationic peptides can form complexes with siRNA and effectively accumulate in lung. However, only the peptide/siRNA complexes that exhibit weak interaction with serum components and can be broken down at shear rate above certain value avoid the inflammation and death caused by pulmonary embolism.

Chinese Chemical Letters 32 (2021) 1731



Egg white as a natural and safe biomaterial for enhanced cancer therapy

Jun Huang^a, Xinru You^a, Peikun Xin^b, Zhipeng Gu^c, Chun Chen^a, Jun Wu^{a,b},

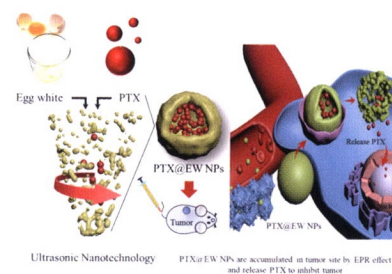
^a Department of Pediatrics, The Seventh Affiliated Hospital of Sun Yat-sen University, Shenzhen 518107, China

^b School of Biomedical Engineering, Sun Yat-sen University, Guangzhou 510006, China

^c College of Polymer Science and Engineering, Sichuan University, Chengdu 610065, China

Egg white was developed as nano-carrier to delivery therapeutic drugs by a green and simple one-pot method for the enhanced cancer therapy.

Chinese Chemical Letters 32 (2021) 1737



Surface charge-convertible quaternary ammonium salt-based micelles for *in vivo* infection therapy

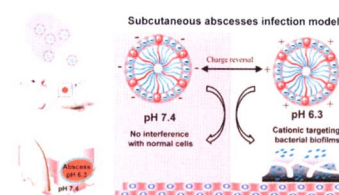
Dengfeng He^a, Yifeng Tan^a, Pengfei Li^a, Yadong Luo^a, Yuhong Zhu^a, Yunlong Yu^a, Jiali Chen^b, Ning Ning^b, Shiyong Zhang^a

^a National Engineering Research Center for Biomaterials and College of Chemistry, Sichuan University, Chengdu 610064, China

^b West China Hospital, Sichuan University, Chengdu 610041, China

We report the synthesis of surface charge-convertible quaternary ammonium salt-based micellar nanocomposite (QAS-SL@CM) by co-assembly and shell cross-linking strategy. By response to the acidic environment at infection sites, the surface charge of QAS-SL@CM could be immediately changed to positive and then target to negatively charged bacteria. QAS-SL@CM solves the cytotoxicity of quaternary ammonium salt for *in vivo* infection therapy and shows significant therapeutic effect in mice subcutaneous abscesses models.

Chinese Chemical Letters 32 (2021) 1743



Application of adaptive pressure-driven microfluidic chip in thyroid function measurement

Xingshang Xu^{a,c}, Nongyue He^{a,b}

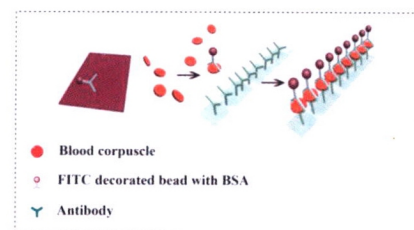
^a State Key Laboratory of Bioelectronics, School of Biological Science and Medical Engineering, Southeast University, Nanjing 210096, China

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^c Nanjing Lanyu Biotechnology Co., Ltd., Nanjing 210000, China

An adaptive pressure-driven microfluidic chip with high speed, accurate quantification, and high temporal and spatial resolution has been developed to achieve highly sensitive thyroid function detection based on fluorescence immunoassay, which provides new ideas and choices for clinical thyroid function screening.

Chinese Chemical Letters 32 (2021) 1747



Acid-sensitive PEGylated cabazitaxel prodrugs for antitumor therapy

Tao Liu^a, Hui Zou^a, Jingqing Mu^a, Na Yu^a, Yang Xu^a, Guohua Liu^a, Xingjie Liang^{b,c}, Shutao Guo^a

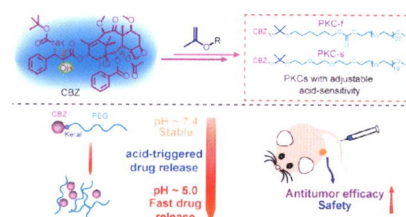
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^b Laboratory of Controllable Nanopharmaceuticals, CAS Center for Excellence in Nanoscience, CAS Key Laboratory for Biomedical Effects of Nanomaterials and Nanosafety, National Center for Nanoscience and Technology, Beijing 100190, China

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

Acid-sensitive acyclic-ketal-linked PEGylated cabazitaxel prodrugs which release cabazitaxel, acetone (a metabolite) and PEG in acidic microenvironments were synthesized, and their antitumor efficacy was evaluated.

Chinese Chemical Letters 32 (2021) 1751



Preparation of mesoporous silica nanoparticle with tunable pore diameters for encapsulating and slowly releasing eugenol

Tianlu Zhang^{a,c}, Zhiguo Lu^{a,c}, Jianze Wang^a, Jie Shen^{a,c}, Qiulian Hao^a, Yan Li^{a,c}, Jun Yang^{a,c}, Yunwei Niu^{d,e}, Zuobing Xiao^{d,e}, Lei Chen^b, Xin Zhang^{a,c}

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

^b Department of Obstetrics and Gynecology, Navy General Hospital of People Liberation Army, Beijing 100048, China

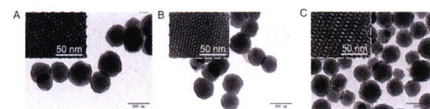
^c School of Chemical Engineering, University of Chinese Academy of Sciences, Beijing 100049, China

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

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

A facile approach was presented to synthesize MSNs with three different pore diameters for encapsulating eugenol.

Chinese Chemical Letters 32 (2021) 1755



Ultrasound augmenting injectable chemotaxis hydrogel for articular cartilage repair in osteoarthritis

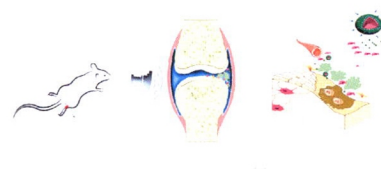
Hui Liu^{a,b}, Xi Xiang^a, Jianbo Huang^a, Bihui Zhu^a, Liyun Wang^a, Yuanjiao Tang^a, Fangxue Du^a, Ling Li^a, Feng Yan^a, Lang Ma^a, Li Qiu^a

^a Department of Ultrasound, Laboratory of Ultrasound Imaging Drug, West China Hospital, Sichuan University, Chengdu 610041, China

^b Department of Ultrasound, The Affiliated Hospital of Southwest Medical University, Luzhou 646000, China

We designed and fabricated a novel injectable chemotaxis hydrogel, which was composed of chitosan-based injectable hydrogel and embedding SDF-1 α -loaded nanodroplets (PFP@NDs-PEG-SDF-1 α). Then, the ultrasound was used to augment the injectable chemotaxis hydrogel and promote the homing migration of BMSCs for OA cartilage repair. The effect of ultrasound augmenting injectable PFP@NDs-PEG-SDF-1 α /hydrogel on the migration of BMSCs was verified *in vitro* and *in vivo*, which can extremely promote stem cell homing and the repair of cartilage in the OA model.

Chinese Chemical Letters 32 (2021) 1759



Glutathione-triggered non-template synthesized porous carbon nanospheres serve as low toxicity targeted delivery system for cancer multi-therapy

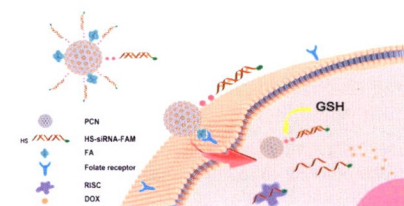
Haoyuan Lv^a, Shuai Ma^a, Zhenbo Wang^a, Xiaoting Ji^a, Shaoping Lv^b, Caifeng Ding^{a,b}

^a Key Laboratory of Optic-Electric Sensing and Analytical Chemistry for Life Science, Ministry of Education, Shandong Key Laboratory of Biochemical Analysis, Key Laboratory of Analytical Chemistry for Life Science in Universities of Shandong, College of Chemistry and Molecular Engineering, Qingdao University of Science and Technology, Qingdao 266042, China

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Here in, a glutathione-triggered drug delivery system by low bio-toxicity carbon nanospheres have been constructed, aimed to solve the nanomaterial toxicity and achieve target multi-therapy, by cell membrane receptors and intracellular environment double response strategy.

Chinese Chemical Letters 32 (2021) 1765



In situ vaccination and gene-mediated PD-L1 blockade for enhanced tumor immunotherapy

Yingying Hu^{a,b,c}, Lin Lin^{a,b,c}, Zhaopei Guo^{a,c}, Jie Chen^{a,b,c}, Atsushi Maruyama^d, Huayu Tian^{a,b,c}, Xuesi Chen^{a,b,c}

^a Key Laboratory of Polymer Ecomaterials, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, Changchun 130022, China

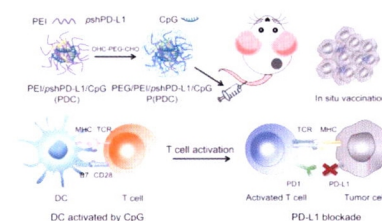
^b University of Science and Technology of China, Hefei 230026, China

^c Jilin Biomedical Polymers Engineering Laboratory, Changchun 130022, China

^d Department of Life Science and Technology, Tokyo Institute of Technology, Nagatsuta, Midori, Yokohama 226-8501, Japan

CpG activates dendritic cells (DCs) to drive T cell responses in accompany with gene-mediated PD1/PD-L1 pathway blockade to improve antitumor efficacy.

Chinese Chemical Letters 32 (2021) 1770



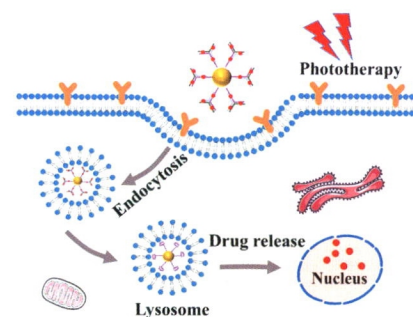
Facile construction of targeted pH-responsive DNA-conjugated gold nanoparticles for synergistic photothermal-chemotherapy

Bo Chen, Lan Mei, Rangrang Fan, Yuelong Wang, Chunlai Nie, Aiping Tong, Gang Guo

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

Targeted pH-responsive i-motif DNA nanostructure was modified on gold nanoparticles via a facile and time-saving freeze-thaw method and this multifunctional nanocarrier was applied for synergistic photothermal-chemotherapy.

Chinese Chemical Letters 32 (2021) 1775



Self-assembled all-inclusive organic-inorganic nanoparticles enable cascade reaction for the detection of glucose

Ximei Sun^a, Yan Li^a, Qian Yang^b, Yunwei Xiao^c, Yuting Zeng^a, Jindi Gong^a, Ziyu Wang^a, Xiaofeng Tan^{a,d}, He Li^a

^a College of Optoelectronics Technology, Chengdu University of Information Technology, Chengdu 610225, China

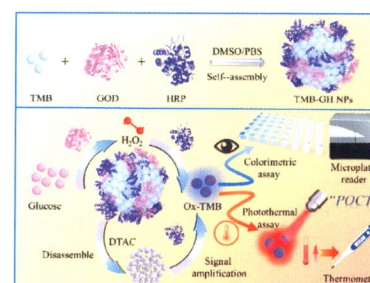
^b School of Pharmacy, Chengdu Medical College, Chengdu 610500, China

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^d School of Chemistry and Chemical Engineering, University of Ji'nan, Ji'nan 250022, China

An all-inclusive substrates/enzymes nanoparticle realize the tandem colorimetric reactions without unnecessary steps for colorimetric and photothermal bioassay of glucose, and have higher stability and activity than that of a free GOx/HRP system.

Chinese Chemical Letters 32 (2021) 1780



Fast-response fluorescent probe with favorable water solubility for highly sensitive imaging of endogenous tyrosinase in living cells and zebrafish model

Zheng Li^a, Xiaofeng Xia^a, Yu You^a, Cuifen Lu^a, Guichun Yang^a, Chao Ma^a, Junqi Nie^a, Qi Sun^b, Shuilin Wu^a, Jun Ren^a, Feiyi Wang^a

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^b Key Laboratory for Green Chemical Process of Ministry of Education and School of Chemistry and Environmental Engineering, Wuhan Institute of Technology, Wuhan 430205, China

In vivo imaging of endogenous tyrosinase in living cells and zebrafish model via a high feedback fluorescent probe was studied in this work.

Chinese Chemical Letters 32 (2021) 1785



Aggregation-induced emission or aggregation-caused quenching? Impact of covalent bridge between tetraphenylethene and naphthalimide

Xiaoxie Ma^a, Weijie Chi^b, Xie Han^{a,c}, Chao Wang^b, Shenghua Liu^a, Xiaogang Liu^b, Jun Yin^a

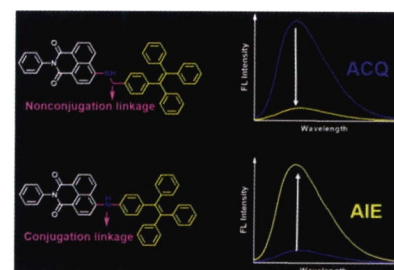
^a Key Laboratory of Pesticide and Chemical Biology, Ministry of Education, Hubei International Scientific and Technological Cooperation Base of Pesticide and Green Synthesis, International Joint Research Center for Intelligent Biosensing Technology and Health, College of Chemistry, Central China Normal University, Wuhan 430079, China

^b Singapore University of Technology and Design, Singapore 487372, Singapore

^c School of Chemistry and Chemical Engineering, Wuhan University of Science and Technology, Wuhan 430081, China

A systematic analysis of the AIE/ACQ characteristics of sixteen TPE-NI derivatives showed that the covalent bridges between the TPE and NI moieties played an important role in controlling the AIE/ACQ properties of the resulted compounds.

Chinese Chemical Letters 32 (2021) 1790



Revealing HOCl burst from endoplasmic reticulum in cisplatin-treated cells via a ratiometric fluorescent probe

Shan Wang^{a,d}, Beitong Zhu^b, Bingya Wang^d, Xinhua Cao^d, Lei Zhu^a, Ji-Ting Hou^{c,d}, Lintao Zeng^{a,b}

^a Institute of Biomedical Materials Industry Technology, Hubei Engineering University, Xiaogan 432000, China

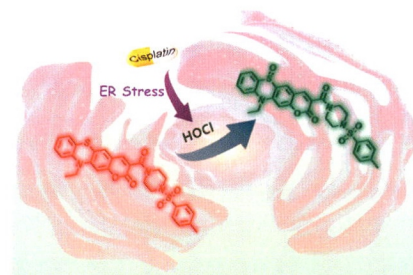
^b College of Light Industry and Food Engineering, Guangxi University, Nanning 530004, China

^c Key Laboratory of Emergency and Trauma, Ministry of Education, Key Laboratory of Hainan Trauma and Disaster Rescue, College of Emergency and Trauma, Hainan Medical University, Haikou 571199, China

^d College of Chemistry and Chemical Engineering, Xinyang Normal University, Xinyang 464000, China

An ER-targeted fluorescent probe was presented for the HOCl detection in cisplatin-stimulated cancer cells.

Chinese Chemical Letters 32 (2021) 1795



A mitochondrial-targeted ratiometric probe for detecting intracellular H₂S with high photostability

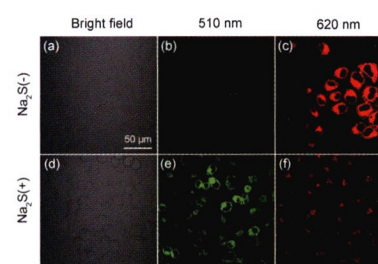
Dandan Bu^a, Yuying Wang^a, Na Wu^b, Wei Feng^b, Donghui Wei^a, Zhanxian Li^a, Mingming Yu^a

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

^b Department of Chemistry, State Key Laboratory of Molecular Engineering of Polymers, Institutes of Biomedical Sciences & Collaborative Innovation Center of Chemistry for Energy Materials, Fudan University, Shanghai 200433, China

Based on 4-bromo-1,8-naphthalic anhydride, one novel ratiometric fluorescence H₂S-probe (IDNA) was designed and synthesized. Further studies indicate that IDNA can sensitively recognize H₂S (detection limit of 7 μmol/L) with good selectivity and anti-interference ability. In addition, IDNA has satisfactory photostability in HeLa cells, ability of mitochondrial colocalization, and can be utilized in fluorescence imaging of H₂S.

Chinese Chemical Letters 32 (2021) 1799



A lysosomal polarity-specific two-photon fluorescent probe for visualization of autophagy

Zixiang Yuan^a, Jun Chen^a, Qin Zhou^c, Ao Liu^a, Zeming Qiang^d, Min Fang^a, Man Chen^a, Yan Feng^a, Haizhu Yu^a, Xiuli Yang^b, Xiangming Meng^{a,c}

^a School of Chemistry and Chemical Engineering & Anhui Province Key Laboratory of Chemistry for Inorganic/Organic Hybrid Functionalized Materials, Anhui University, Hefei 230601, China

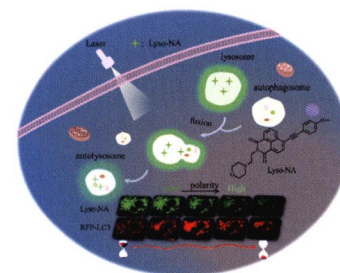
^b Key Laboratory for Advanced Technology in Environmental Protection of Jiangsu Province, Yancheng Institute of Technology, Yancheng 224051, China

^c Institute of Physical Science and Information Technology, Anhui University, Hefei 230601, China

^d Anhui Golden Sun Biochemical Pharmaceuticals Limited Company, Fuyang 236000, China

A lysosomal polarity-specific two-photon fluorescent probe Lyso-NA displayed its ability for real-time long-term visualization of autophagy better than that of plasmid transfection.

Chinese Chemical Letters 32 (2021) 1803



Effects of the molluscicide candidate PPU06 on alkaline phosphatase in the golden apple snails determined using a near-infrared fluorescent probe

Changxiaoxi Liu^a, Suo Yang^a, Yimu Qiao^a, Yuqiang Zhao^a, Weisi Wang^b, Mingxuan Jia^a, Yanqi He^a, Ying Zhou^a, Liping Duan^{b,c}

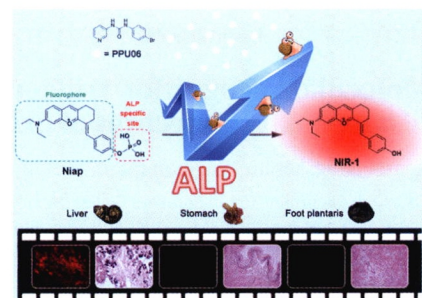
^a College of Chemical Science and Technology, Yunnan University, Kunming 650091, China

^b National Institute of Parasitic Diseases, Chinese Center for Disease Control and Prevention, WHO Collaborating Centre for Malaria, Schistosomiasis, and Filariasis, Key Laboratory of Parasitology and Vector Biology of the Chinese Ministry of Health, Shanghai 200025, China

^c Qinghai Provincial People's Hospital, Xining 810007, China

A near-infrared fluorescent probe was used to study the ALP enrichment and variation in golden apple snails exposed to the molluscicide candidate PPU06. This ALP fluorescent identification method proved that PPU06 caused liver injury and stimulated the ALP increase in the liver of golden apple snails.

Chinese Chemical Letters 32 (2021) 1809



High active amorphous $\text{Co}(\text{OH})_2$ nanocages as peroxymonosulfate activator for boosting acetaminophen degradation and DFT calculation

Juanjuan Qi^{a,b}, Juzhe Liu^c, Fengbin Sun^{b,d}, Taobo Huang^{b,d}, Jun Duan^{b,d}, Wen Liu^{b,d}

^a The Key Laboratory of Resources and Environmental Systems Optimization, Ministry of Education, College of Environmental Science and Engineering, North China Electric Power University, Beijing 102206, China

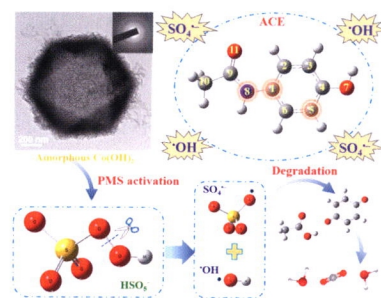
^b The Key Laboratory of Water and Sediment Sciences, Ministry of Education, College of Environmental Sciences and Engineering, Peking University, Beijing 100871, China

^c School of Chemistry and Beijing Advanced Innovation Center for Biomedical Engineering, Beihang University, Beijing 100191, China

^d State Environmental Protection Key Laboratory of All Material Fluxes in River Ecosystems, Peking University, Beijing 100871, China

Amorphous $\text{Co}(\text{OH})_2$ nanocages were synthesized by using Cu_2O as templates and combining etching and precipitation process, which exhibit excellent activation of peroxymonosulfate (PMS) for efficient acetaminophen (ACE) removal.

Chinese Chemical Letters 32 (2021) 1814



Zn-based metal organic framework derivative with uniform metal sites and hierarchical pores for efficient adsorption of formaldehyde

Junjie Yang^a, Junxian Qin^a, Ziyang Guo^a, Yun Hu^{a,b,c}, Xia Zhang^d

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

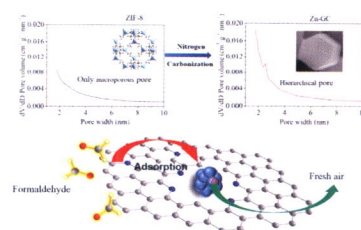
^b Guangdong Provincial Key Laboratory of Atmospheric Environment and Pollution Control, Guangzhou 510006, China

^c The Key Lab of Pollution Control and Ecosystem Restoration in Industry Clusters, Ministry of Education, Guangzhou 510006, China

^d Zhejiang Tianchuan Environmental Science & Technology Co., Ltd. Hangzhou 310015, China

A metal organic framework (MOF) derivative composite material is synthesized, using ZIF-8 as a precursor. Benefiting from the uniform metal sites and hierarchical pore structure, the composite exhibited an excellent adsorption performance for formaldehyde.

Chinese Chemical Letters 32 (2021) 1819



Synthesis of sponge-like TiO_2 with surface-phase junctions for enhanced visible-light photocatalytic performance

Yue Jiang^{a,b}, Yao Qin^c, Tianyu Yu^{a,b}, Sijie Lin^{a,b}

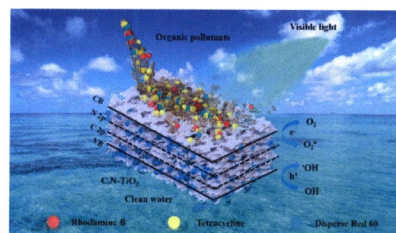
^a College of Environmental Science and Engineering, The Institute for Translational Nanomedicine, Shanghai East Hospital, Tongji University, Shanghai 200092, China

^b Key Laboratory of Yangtze River Water Environment, Shanghai Institute of Pollution Control and Ecological Security, Tongji University, Shanghai 200092, China

^c Institute for Regenerative Medicine, The Institute for Translational Nanomedicine, Shanghai East Hospital, Tongji University School of Medicine, Shanghai 200123, China

A facile strategy was developed to create a highly efficient visible-light reactive C,N-TiO₂ with sponge-like structure and surface-phase junctions.

Chinese Chemical Letters 32 (2021) 1823



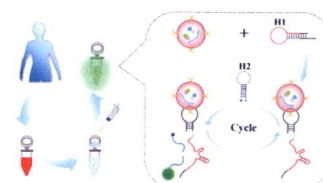
Molecular recognition triggered aptazyme cascade for ultrasensitive detection of exosomes in clinical serum samples

Kemei Jiang, Yanan Wu, Juan Chen, Mingqing Shi, Hong-Min Meng, Zhaohui Li

College of Chemistry, Green Catalysis Center, Henan Joint International Research Laboratory of Green Construction of Functional Molecules and Their Bioanalytical Applications, Zhengzhou Key Laboratory of Functional Nanomaterial and Medical Theranostic, Zhengzhou University, Zhengzhou 450001, China

An aptazyme-based fluorescence nanoprobe was developed for ultrasensitive detection of exosomes via target-triggered cascade.

Chinese Chemical Letters 32 (2021) 1827



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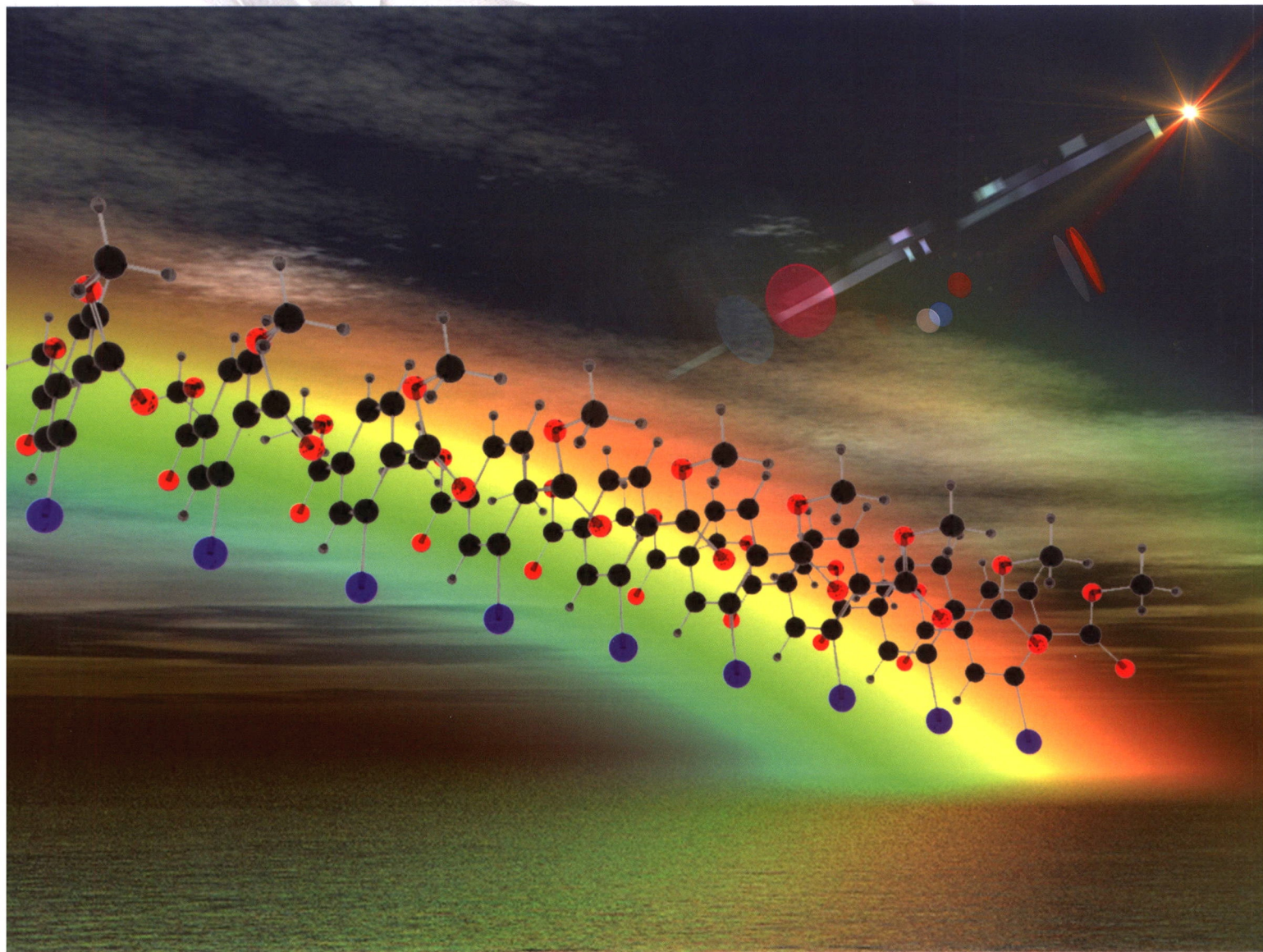
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