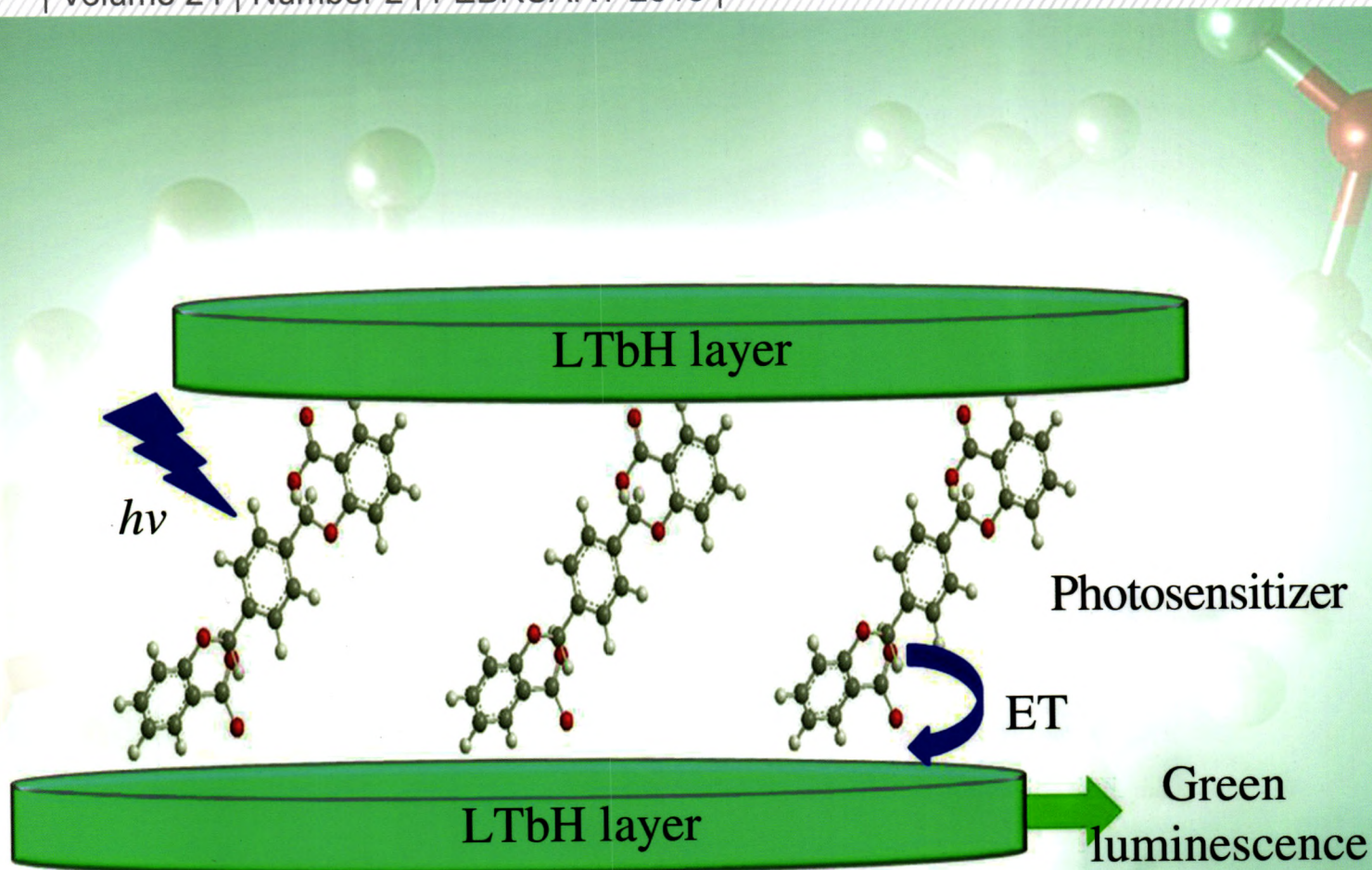


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## Chinese Chemical Letters

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### REVIEW

Zhen-Zhong Yang et al.  
Two-dimensional mesoporous  
materials: From fragile coatings to  
flexible membranes

### ORIGINAL ARTICLE

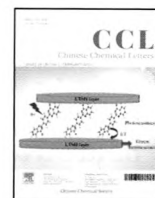
Yu Tang et al.  
Intercalation assembly of optical hybrid  
materials based on layered terbium  
hydroxide hosts and organic sensitizer  
anions guests



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Chinese Chemical Society





## Graphical Abstracts/Chin Chem Lett 24 (2013) iii-ix

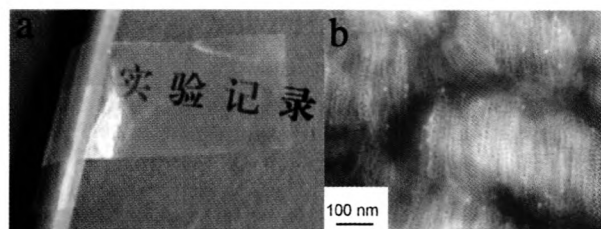
## Review

## Two-dimensional mesoporous materials: From fragile coatings to flexible membranes

Chinese Chemical Letters 24 (2013) 89

Zheng-Long Yang<sup>a,b</sup>, Jiao-Li Li<sup>b</sup>, Cheng-Liang Zhang<sup>b</sup>, Yun-Feng Lu<sup>c</sup>, Zhen-Zhong Yang<sup>b</sup><sup>a</sup>School of Chemistry and Materials Science, Ludong University, Yantai 264025, China<sup>b</sup>Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China<sup>c</sup>Department of Chemical and Biomolecular Engineering, University of California at Los Angeles, Los Angeles, CA 90095, USA

During the past two decades, two-dimensional mesoporous materials have experienced an evolution from fragile coatings to flexible membranes. Aiming at practical applications, it is significant to support mesoporous materials with proper matrices for example flexible porous membranes to form mesoporous composite membranes with designed pore size and chemistry.



## Original articles

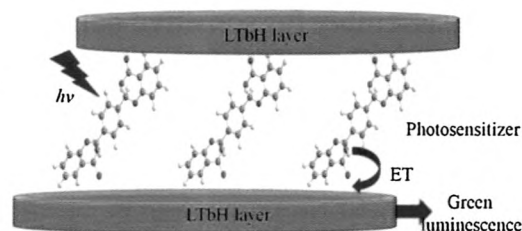
## Intercalation assembly of optical hybrid materials based on layered terbium hydroxide hosts and organic sensitizer anions guests

Chinese Chemical Letters 24 (2013) 93

Liang-Liang Liu, Qin Wang, Dan Xia, Ting-Ting Shen, Ming-Hui Yu, Wei-Sheng Liu, Yu Tang

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

Four novel optical hybrid materials LTbH-L<sup>1-4</sup> have been intercalation assembled by the layered terbium hydroxide hosts and organic sensitizing anions guests. Efficient energy transfer from the excited state of the intercalated guest anions to the Tb<sup>3+</sup> centers in the host layers can take place via effective host-guest interactions between the hydroxide layers and the carboxylate groups in the guest molecules.



## Colorimetric and fluorescent detection of biological thiols in aqueous solution

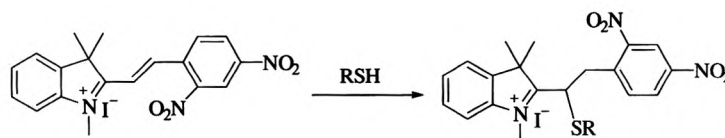
Chinese Chemical Letters 24 (2013) 96

Yin-Hui Li<sup>a</sup>, Jin-Feng Yang<sup>a,b</sup>, Chang-Hui Liu<sup>a</sup>, Ji-Shan Li<sup>a</sup>, Rong-Hua Yang<sup>a</sup>

<sup>a</sup>State Key Laboratory of Chemo/Biosensing and Chemometrics, College of Chemistry and Chemical Engineering, Hunan University, Changsha 410082, China

<sup>b</sup>Anesthesia Department, Affiliated Cancer Hospital, Xiangya School of Medicine, Central South University, Changsha 410013, China

Biological thiols could be detected in 100% aqueous solution with high selectivity and sensitivity in physiological pH conditions.

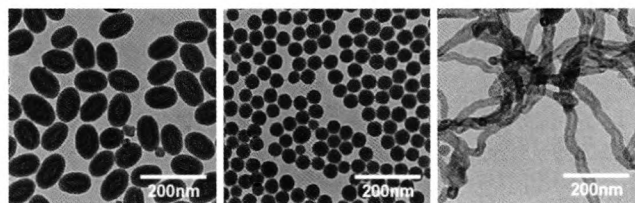


Chinese Chemical Letters 24 (2013) 99

## A facile route for shape-selective synthesis of silica nanostructures using poly-L-lysine as template

Ding-Geng He<sup>a</sup>, Xiao-Xiao He<sup>b</sup>, Ke-Min Wang<sup>a,b</sup>, Ying-Xiang Zhao<sup>b</sup><sup>a</sup>State Key Laboratory of Chemo/Biosensing and Chemometrics, College of Chemistry and Chemical Engineering, Hunan University, Changsha 410082, China<sup>b</sup>Key Laboratory for Bio-Nanotechnology and Molecule Engineering of Hunan Province, College of Biology, Hunan University, Changsha 410082, China

A facile method for the shape-selective synthesis of silica nanostructures using a reverse-microemulsion-mediated template (RMMT) technique is reported. The rod-like, spherical and tubular silica structures can be synthesized with random coil,  $\alpha$ -helix and  $\beta$ -sheet structures as template, respectively.

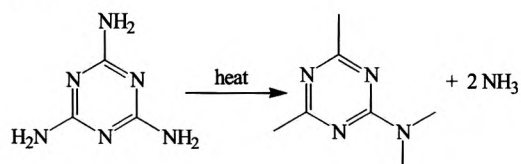


Chinese Chemical Letters 24 (2013) 103

## Synthesis of graphitic carbon nitride through pyrolysis of melamine and its electrocatalysis for oxygen reduction reaction

He-Sheng Zhai<sup>a</sup>, Lei Cao<sup>b</sup>, Xing-Hua Xia<sup>b</sup><sup>a</sup>Center for Scanning Electron Microscopy, Xiamen University, Xiamen 361005, China<sup>b</sup>State Key Laboratory of Analytical Chemistry for Life Science, School of Chemistry and Chemical Engineering, Nanjing University, Nanjing 210093, China

Graphitic carbon nitride ( $g\text{-C}_3\text{N}_4$ ) synthesized via direct pyrolysis of melamine shows electrocatalytic activity toward ORR through a two-step and two-electron process.



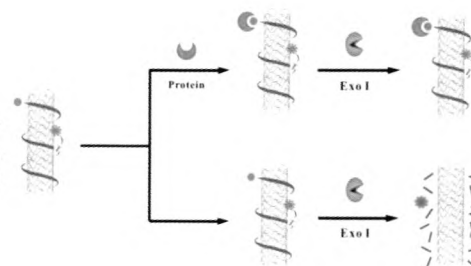
Chinese Chemical Letters 24 (2013) 107

## Terminal protection of small molecule-linked ssDNA-SWNT nanoassembly for sensitive detection of small molecule and protein interaction

Yu Wang, Dian-Ming Zhou, Zhan Wu, Li-Juan Tang, Jian-Hui Jiang

State Key Laboratory of Chemo/Bio-Sensing and Chemometrics, College of Chemistry and Chemical Engineering, Hunan University, Changsha 410082, China

This strategy mainly relies on the binding event of a target protein to a small molecule-linked ssDNA-SWNT nanoassembly, which can efficiently protect the nanoassembly from the degradation by exonuclease. By incorporating a fluorophore in the small molecule-linked ssDNA, the small molecule-protein interaction can be readily probed by the fluorescent signals of the reaction system.



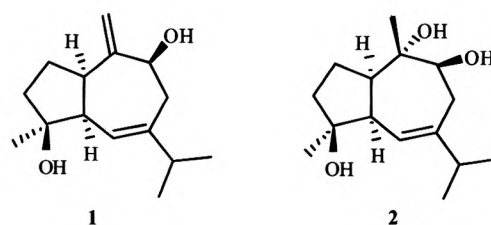
Chinese Chemical Letters 24 (2013) 111

## Two new guaianolide-type sesquiterpenoids from *Kadsura interior*

Ke Dong, Jian-Xin Pu, Xue Du, Xiao-Nian Li, Han-Dong Sun

State Key Laboratory of Phytochemistry and Plant Resources in West China, Kunming Institute of Botany, Chinese Academy of Sciences, Kunming 650204, China

This paper reported two new guaianolide-type sesquiterpenoids (**1** and **2**) and a pair of enantiomers (**3a** and **3b**) from *Kadsura interior*. Their structures and configurations were elucidated by spectroscopic methods including 2D-NMR and HR-MS techniques, and by singlecrystal X-ray analysis.



## A new pyrrole alkaloid from *Selaginella moellendorffii* Hieron

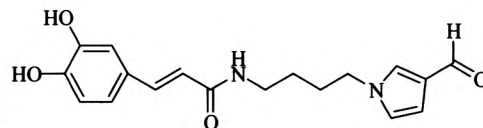
Chinese Chemical Letters 24 (2013) 114

Zhen-Xing Zou<sup>a</sup>, Kang-Ping Xu<sup>a</sup>, Fu-Shuang Li<sup>a</sup>, Hui Zou<sup>a</sup>, Min-Zhen Liu<sup>a</sup>, Qiong Zhang<sup>a</sup>, Kai Yu<sup>a</sup>, Lan-Fang Zhao<sup>a</sup>, Lei-Hong Tan<sup>a</sup>, Gui-Shan Tan<sup>a,b</sup>

<sup>a</sup>School of Pharmaceutical Sciences, Central South University, Changsha 410013, China

<sup>b</sup>Xiangya Hospital of Central South University, Changsha 410008, China

One new pyrrole alkaloid, *N*-(2*E*)-3-(3, 4-dihydroxyphenyl) prop-*N*'-(4-aminobutyl)-3-pyrrole formaldehyde, was isolated from the whole herbs of *Selaginella moellendorffii* Hieron, which exhibited potent protective effect against the injury of human umbilical vein endothelial cell (HUVECs) induced by high concentrations of glucose *in vitro*.



## Design, synthesis and preliminary biological evaluation of brain targeting L-ascorbic acid prodrugs of ibuprofen

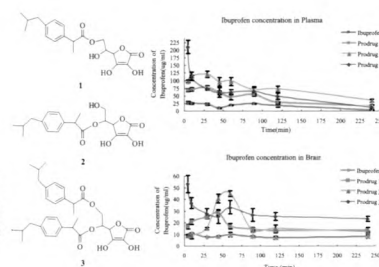
Chinese Chemical Letters 24 (2013) 117

Xue-Ying Wu<sup>a</sup>, Xiao-Cen Li<sup>b</sup>, Jie Mi<sup>b</sup>, Jing You<sup>b</sup>, Li Hai<sup>b</sup>

<sup>a</sup>College of Pharmacy, Chengdu University of Traditional Chinese Medicine, Chengdu 610075, China

<sup>b</sup>Key Laboratory of Drug Targeting and Drug Delivery System of the Education Ministry, Department of Medicinal Chemistry, West China School of Pharmacy, Sichuan University, Chengdu 610041, China

Prodrug **1**, **2** and **3** were synthesized in facile ways with good yields. And the preliminary evaluation *in vivo* illustrated that prodrug **2** had a better targeting ability than prodrug **1**. Moreover, prodrug **3**, whose C5-O & C6-O positions were both modified, had good targeting ability for brain which will provide an important evidence for our further study on C5-O- & C6-O-di-derivatives of L-ascorbic acid.



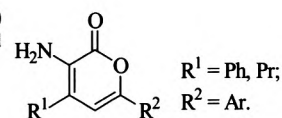
## Synthesis and biological evaluation of 3-amino-2-pyrones as selective cyclooxygenase-1 (COX-1) inhibitors

Chinese Chemical Letters 24 (2013) 120

Xue-Ping Chu, Qing-Fa Zhou, Shen Zhao, Fei-Fei Ge, Mian Fu, Jia-Peng Chen, Tao Lu

Department of Organic Chemistry, China Pharmaceutical University, Nanjing 210009, China

A group of 3-amino-2-pyrones were synthesized and their biological activities were evaluated for inhibiting cyclooxygenase (COX) activity. This study has led to the identification of COX-1-selective inhibitors. Among the tested compounds, the compound **5j** exhibited the most potent COX-1 inhibitory activity ( $IC_{50} = 19.32$  mg/mL) and COX-1 selectivity index (SI = 41.98).



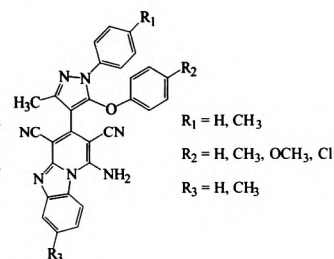
## One step synthesis of pyrido[1,2-*a*]benzimidazole derivatives of aryloxy-pyrazole and their antimicrobial evaluation

Chinese Chemical Letters 24 (2013) 123

Hardik H. Jardosh, Chetan B. Sangani, Manish P. Patel, Ranjan G. Patel

Department of Chemistry, Sardar Patel University, Vallabh Vidyanagar-388120, Gujarat, India

A new series of pyrido[1,2-*a*]benzimidazole derivatives bearing the aryloxy-pyrazole nucleus have been synthesized by base-catalyzed cyclocondensation reaction through multi-component reaction (MCR) approach. All the synthesized compounds were investigated against a representative panel of pathogenic strains using broth microdilution MIC (minimum inhibitory concentration) method for their *in vitro* antimicrobial activity.



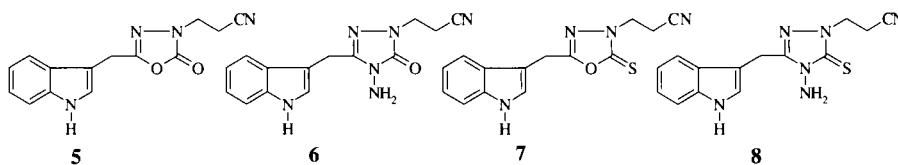
## Synthesis and screening of some novel substituted indoles contained 1,3,4-oxadiazole and 1,2,4-triazole moiety

Hemalatha Gadegoni<sup>a</sup>, Sarangapani Manda<sup>b</sup>

<sup>a</sup>Jayamukhi College of Pharmacy, Narsampet, Warangal 506332, India

<sup>b</sup>University College of Pharmaceutical Sciences, Kakatiya University, Warangal 506009, India

A series of novel indoles contained 1,3,4-oxadiazole and 1,2,4-triazole were synthesized and screened for their antimicrobial activity against Gram-positive, Gram-negative bacteria and also tested their ability toward anti-inflammatory activity.

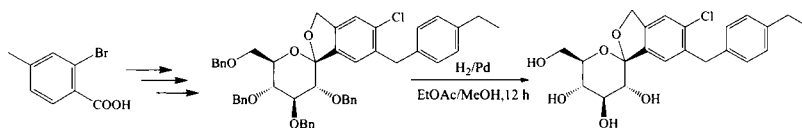


## Improved preparation of (1*S*,3'*R*,4'*S*,5'*S*,6'*R*)-5-chloro-6-[(4-ethylphenyl)methyl]-3',4',5',6'-tetrahydro-6'-(hydroxymethyl)-spiro[isobenzofuran-1(3*H*), 2'-[2*H*]pyran]-3',4',5'-triol

Yong-Hai Liu, Ting-Ming Fu, Chun-Yan Ou, Wen-Ling Fan, Guo-Ping Peng

School of Pharmacy, Nanjing University of Chinese Medicine, Nanjing 210023, China

The targeted compound was synthesized from 2-bromo-4-methylbenzoic acid in nine steps and the isomers of undesired *ortho*-products were avoided during the preparation.

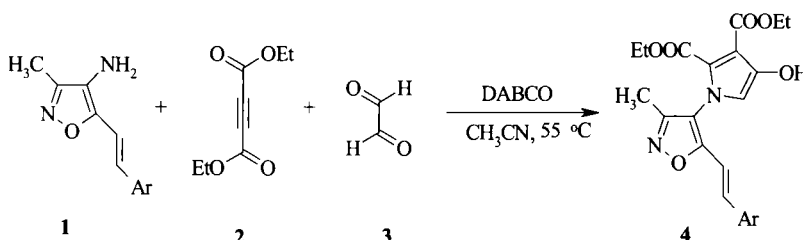


## DABCO-promoted facile and convenient synthesis of novel isoxazolyl-1*H*-2,3-pyrrole dicarboxylates

Rajanarendar Eligeti, Kishore Baireddy, Ramakrishna Saini

Department of Chemistry, Kakatiya University, Warangal 500009, A.P, India

Synthesis of biologically active isoxazolyl-1*H*-2,3-pyrrole dicarboxylates has been achieved in a one-pot procedure catalyzed by DABCO.

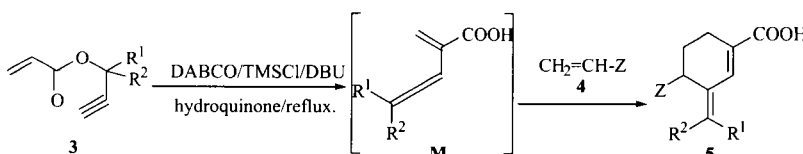


## A novel Ireland–Claisen rearrangement/Diels–Alder tandem reaction of propargylic acrylates with acyclic dienophiles

Yun-Xia Li, Yi-Lin Sheng, Bi-Song Zhang

College of Pharmaceutics and Material Engineering, Jinhua College of Profession and Technology, Jinhua 321007, China

A novel DABCO-catalyzed Ireland–Claisen rearrangement/Diels–Alder tandem reaction of propargylic acrylates **3** with dienophiles **4** was developed. This protocol gave cyclic  $\alpha,\beta$ -unsaturated carboxylic acids **5** with complete regioselectivity.



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## PEG-SO<sub>3</sub>H as an efficient and reusable catalyst for chemoselective synthesis of 1,1-diacetates

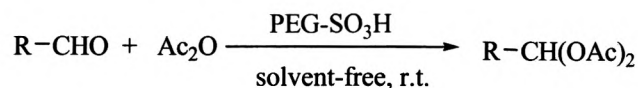
Ying-Xiao Zong<sup>a</sup>, Jun-Ke Wang<sup>a,c</sup>, Yu-Ying Niu<sup>a</sup>, Zheng-Liang Li<sup>a</sup>, Zheng-En Song<sup>a</sup>, Zheng-Jun Quan<sup>b</sup>, Xi-Cun Wang<sup>b</sup>, Guo-Ren Yue<sup>a</sup>, Yi Pan<sup>c</sup>

<sup>a</sup>Key Laboratory of Hexi Corridor Resources Utilization of Gansu Universities, College of Chemistry and Chemical Engineering, Hexi University, Zhangye 734000, China

<sup>b</sup>Gansu Key Laboratory of Polymer Materials, College of Chemistry and Chemical Engineering, Northwest Normal University, Lanzhou 730070, China

<sup>c</sup>School of Chemistry and Chemical Engineering, Nanjing University, Nanjing 210093, China

The synthesis of 1,1-diacetates from aromatic aldehydes and acetic anhydride in the presence of PEG-SO<sub>3</sub>H as efficient catalyst is described. The catalyst can be recovered and reused eight times.



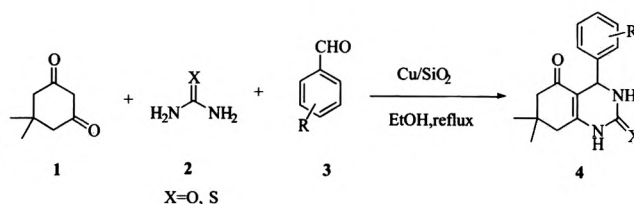
Chinese Chemical Letters 24 (2013) 143

## Cu/SiO<sub>2</sub>: A recyclable catalyst for the synthesis of octahydroquinazolinone

Majid M. Heravi, Narges Karimi, Hoda Hamidi, Hossein A. Oskooie

Department of Chemistry, School of Sciences, Alzahra University, Vanak, Tehran 1993893973, Iran

A simple and one-pot method for the synthesis of octahydroquinazolinone is reported. Cu/SiO<sub>2</sub> in refluxing ethanol catalyzes this three-component condensation reaction to afford the corresponding quinazolinones in good yields.



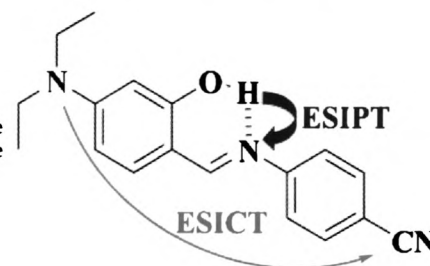
Chinese Chemical Letters 24 (2013) 145

## Excited-state charge coupled proton transfer reaction via the dipolar functionality of salicylideneaniline

Tzu-Chien Fang, Hsing-Yang Tsai, Ming-Hui Luo, Che-Wei Chang, Kew-Yu Chen

Department of Chemical Engineering, Feng Chia University, Taichung 40724, Taiwan

Based on design and synthesis of salicylideneaniline derivatives, we demonstrate a prototypical system to investigate the excited-state intramolecular charge transfer coupled excited-state intramolecular proton transfer reaction via the dipolar functionality of the molecular framework.



Chinese Chemical Letters 24 (2013) 149

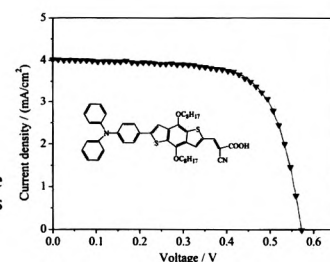
## Synthesis and photoelectric properties of an organic dye containing benzo[1,2-b:4,5-b']dithiophene for dye-sensitized solar cells

Yu-Rong Gao<sup>a</sup>, Ling-Ling Chu<sup>b</sup>, Wei Guo<sup>b</sup>, Ting-Li Ma<sup>b</sup>

<sup>a</sup>Dalian Research and Design Institute of Chemical Industry, Dalian 116023, China

<sup>b</sup>State Key Laboratory of Fine Chemicals, School of Chemical Engineering, Dalian University of Technology, Dalian 116024, China

A novel benzodithiophene-containing organic dye BDT was synthesized and characterized as a sensitizer for a nanocrystalline TiO<sub>2</sub>-based dye-sensitized solar cell. Under simulated AM1.5G solar light (100 mW/cm<sup>2</sup>) illumination, the DSC based on BDT gives a power conversion efficiency of 1.78%.



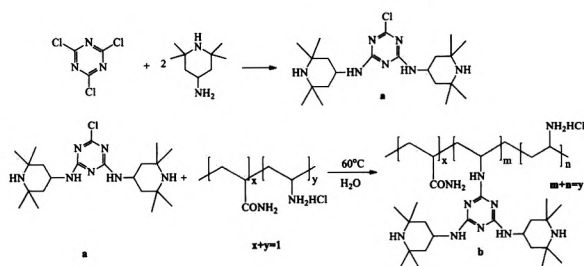
Chinese Chemical Letters 24 (2013) 153

## Synthesis of a water-soluble macromolecular light stabilizer containing hindered amine structures

Wei Ma, Mei Meng, Xue Jiang, Bing-Tao Tang, Shu-Fen Zhang

State Key Laboratory of Fine Chemicals, Dalian University of Technology, Dalian 116023, China

A novel water-soluble macromolecular light stabilizer was synthesized by grafting 2-chloro-4,6-bis-[(2,2,6,6-tetramethylpiperidin-4-yl)-amino]-1,3,5-triazine onto polyvinylamine, and application of the light stabilizer as finishing agent improved the lightfastness of the reactive dyes on cotton.

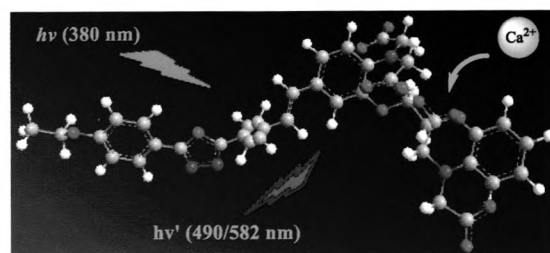


Chinese Chemical Letters 24 (2013) 156

## Synthesis of a new ratiometric emission $\text{Ca}^{2+}$ indicator for *in vivo* bioimaging

Qiao-Ling Liu<sup>a,b</sup>, Meng Fan<sup>a</sup>, Wei Bian<sup>a</sup>, Shao-Min Shuang<sup>a</sup>, Chuan Dong<sup>a</sup><sup>a</sup>Research Center of Environmental Science and Engineering, Shanxi University, Taiyuan 030006, China<sup>b</sup>Department of Chemistry, Taiyuan Normal University, Taiyuan 030031, China

A new ratiometric emission  $\text{Ca}^{2+}$  indicator was developed and its ability to detect changes of  $\text{Ca}^{2+}$  in live cells was demonstrated by confocal laser scanning microscope.



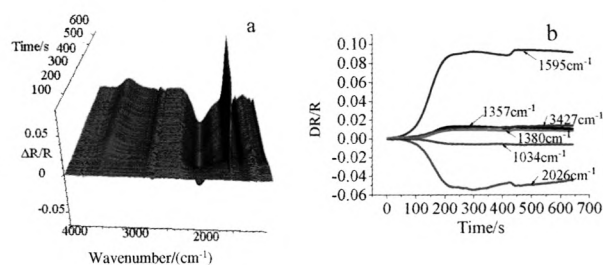
Chinese Chemical Letters 24 (2013) 159

## Study of the electrochemical oxidation mechanism of formaldehyde on gold electrode in alkaline solution

Rui-Wen Yan, Bao-Kang Jin

Department of Chemistry, Anhui University, Hefei 230039, China

The formaldehyde molecule formed gem-diol in alkaline solution and was absorbed on the electrode surface; then gem-diol anion was oxidized to formate ions and water.

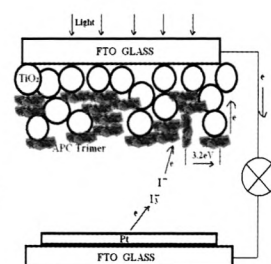


Chinese Chemical Letters 24 (2013) 163

## Photocurrent generation by recombinant allophycocyanin trimer multilayer on $\text{TiO}_2$ electrode

Yang Pu<sup>a,c</sup>, Guo-Liang Zhu<sup>b</sup>, Bao-Sheng Ge<sup>b</sup>, Dao-Yong Yu<sup>b</sup>, Yi-Peng Wang<sup>a</sup>, Song Qin<sup>a</sup><sup>a</sup>Yantai Institute of Coastal Zone Research, Chinese Academy of Sciences, Yantai 264003, China<sup>b</sup>Center for Bioengineering and Biotechnology, China University of Petroleum (East China), Qingdao 266580, China<sup>c</sup>University of Chinese Academy of Sciences, Beijing 100049, China

This article shows an enhanced photocurrent production by recombinant allophycocyanin trimers immobilized on a mesoporous  $\text{TiO}_2$  electrode.





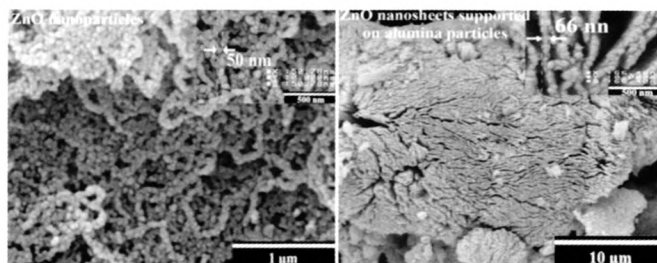
## Novel ZnO–Al<sub>2</sub>O<sub>3</sub> composite particles as sorbent for low temperature H<sub>2</sub>S removal

Hamid Tajizadegan<sup>a</sup>, Mehdi Rashidzadeh<sup>b</sup>, Majid Jafari<sup>a</sup>,  
Reza Ebrahimi-Kahrizangi<sup>a</sup>

<sup>a</sup>Department of Materials Engineering, Najafabad Branch, Islamic Azad University, P.O. Box 517, Isfahan, Iran

<sup>b</sup>Catalysis & Nanotechnology Research Division, Research Institute of Petroleum Industry (RIPI), P.O. Box 14665-137, Tehran, Iran

ZnO sorbents supported on alumina particles showed greater sulfur adsorption capacity than pure agglomerated ZnO sorbents.



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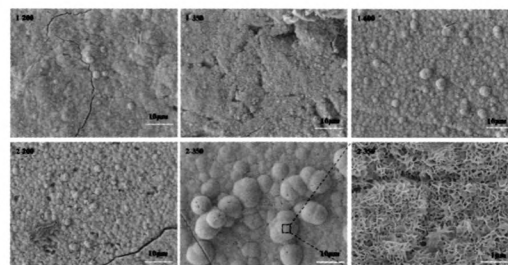
## A low-temperature sol-gel route for the synthesis of bioactive calcium silicates

Yong-Sen Sun<sup>a</sup>, Ai-Ling Li<sup>a</sup>, Fu-Jian Xu<sup>b</sup>, Dong Qiu<sup>a</sup>

<sup>a</sup>Beijing National Laboratory for Molecular Sciences, State Key Laboratory of Polymer Physics and Chemistry, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China

<sup>b</sup>Key Laboratory of Chemical Resource Engineering, College of Materials Science & Engineering, Beijing University of Chemical Technology, Beijing 100029, China

A low-temperature sol-gel route combined with an ideal calcium precursor was created to prepare bioactive calcium silicates.



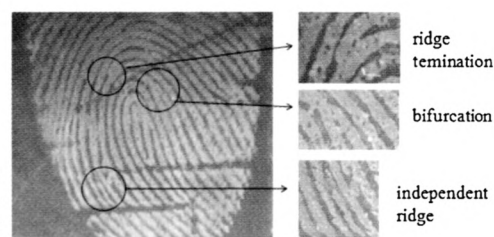
Chinese Chemical Letters 24 (2013) 170

## Visualization of latent fingerprints using Prussian blue thin films

Gang Qin, Mei-Qin Zhang, Yang Zhang, Yu Zhu, Shou-Liang Liu, Wen-Jin Wu,  
Xue-Ji Zhang

Research Center for Bioengineering and Sensing Technology, University of Science and Technology Beijing, Beijing 100083, China

A facile and effective strategy for visualizing latent fingerprints on conductive surfaces has been demonstrated by spatially selective electrochemical deposition of Prussian blue thin films. It presented the great advantage of being a relatively simple, rapid, high resolution and non-hazardous technique for the enhancement of latent fingerprints.



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