

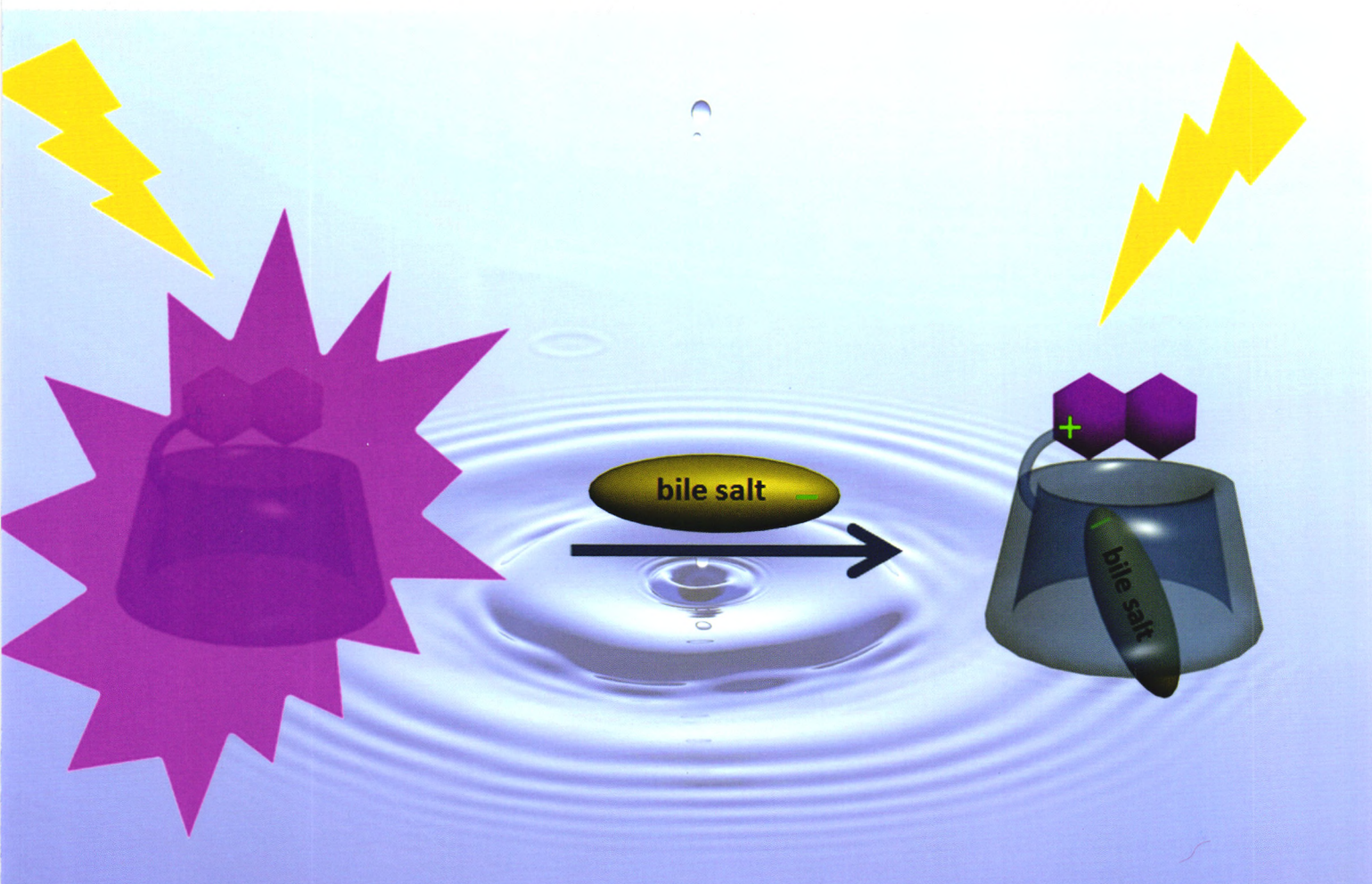
ISSN 1001-8417

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Chinese Chemical Letters

| Volume 24 | Number 6 | JUNE 2013 |



The image is provided by Prof. Yu Liu's Group.

Molecular recognition of bile salts by fluorescent-labeled β -cyclodextrin derivatives



ORIGINAL ARTICLE

Xin Zhao, Zhan-Ting Li et al.
Synthesis, properties, and
self-assembly of 2,3-bis(*n*-octyl)
hexaazatriphenylene

ORIGINAL ARTICLE

Nan-Feng Zheng et al.
Solvent effect on the synthesis of
monodisperse amine-capped
Au nanoparticles

ISSN 1001-8417



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Chinese Chemical Society



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

Review

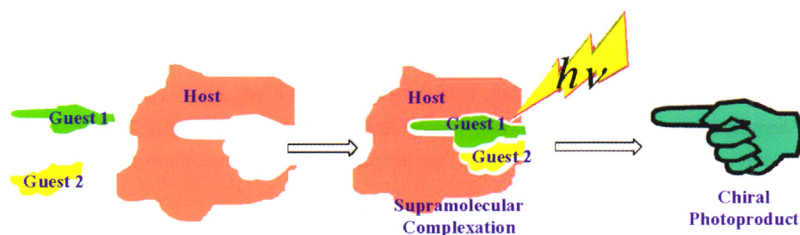
Recent progress in supramolecular chiral photochemistry

Chinese Chemical Letters 24 (2013) 437

Cheng Yang

College of Chemistry, Sichuan University, Chengdu 610064, China

This mini review summarizes recent advances in the rapidly progressing field of supramolecular chiral photochemistry.



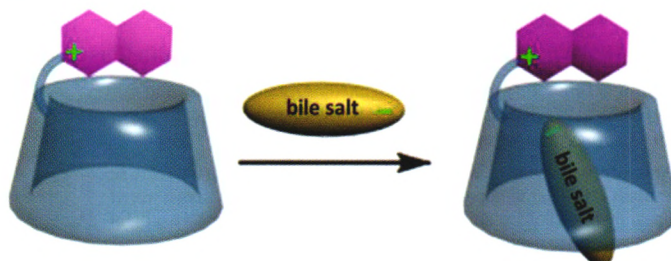
Original articles

Selective binding of bile salts by β -cyclodextrin derivatives with appended quinolyl arms

Chinese Chemical Letters 24 (2013) 442

Sha-Sha Zhai, Yong Chen, Yu Liu

Department of Chemistry, State Key Laboratory of Elemento-Organic Chemistry, Nankai University, Tianjin 300071, China

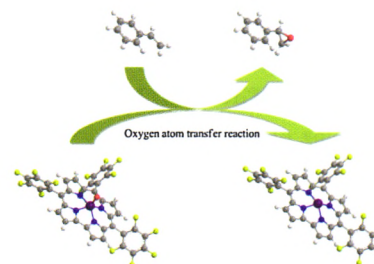
A pair of β -cyclodextrin derivatives modified with quinolyl and isoquinolyl arms were synthesized, and their binding modes and binding abilities toward bile salts were investigated to understand their molecular selective binding behaviors.

Solvent effects on oxygen atom transfer reaction between manganese(V)-oxo corrole and alkene

Chinese Chemical Letters 24 (2013) 447

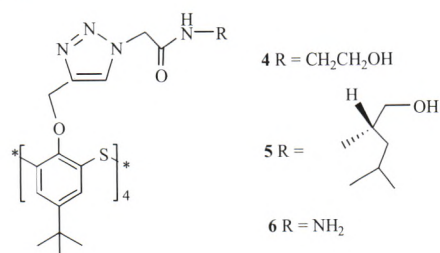
Lan Yu^a, Qi Wang^a, Lu Dai^a, Wei-Ying Li^a, Rong Chen^a, Mian HR Mahmood^a, Hai-Yang Liu^a, Chi-Kwong Chang^b^aDepartment of Chemistry, South China University of Technology, Guangzhou 510640, China^bDepartment of Chemistry, Michigan State University, E. Lansing, MI 48824, USA

The oxygen atom transfer reaction from Mn(V)-oxo corrole to alkene substrates may proceed via different mechanisms in different solvents.



Chinese Chemical Letters 24 (2013) 450

Click synthesis and dye extraction properties of novel thiacalix[4]arene derivatives with triazolyl and hydrogen bonding groups

Hong-Yu Guo^a, Fa-Fu Yang^{a,b}, Zi-Yu Jiao^b, Jian-Rong Lin^a^aCollege of Chemistry and Chemical Engineering, Fujian Normal University, Fuzhou 350007, China^bFujian Key Laboratory of Polymer Materials, Fujian Normal University, Fuzhou 350007, ChinaSeveral novel thiacalix[4]arene derivatives with triazolyl and hydrogen bonding groups **4**, **5** and **6** were synthesized and exhibited excellent extraction capability for six anionic and cationic dyes.

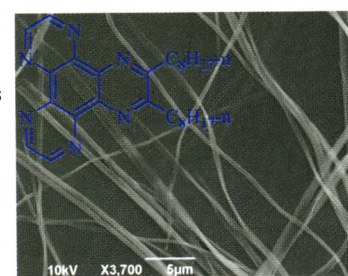
Synthesis, properties, and self-assembly of 2,3-bis(*n*-octyl) hexaazatriphenylene

Zhi-Gang Tao, Tian-Guang Zhan, Tian-You Zhou, Xin Zhao, Zhan-Ting Li

Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, Shanghai 200032, China

A novel hexaazatriphenylene derivative was synthesized and its photophysical, electrochemical, and self-assembly properties have been investigated.

Chinese Chemical Letters 24 (2013) 453



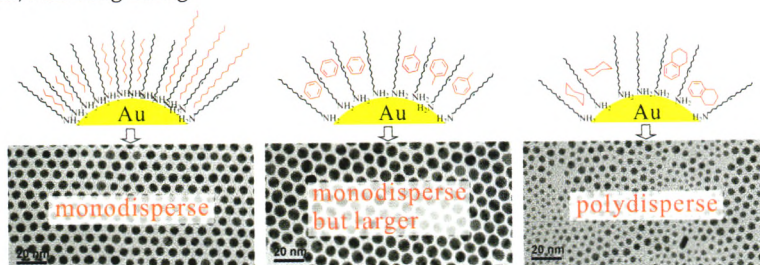
Solvent effect on the synthesis of monodisperse amine-capped Au nanoparticles

Bing-Hui Wu, Hua-Yan Yang, Hua-Qi Huang, Guang-Xu Chen, Nan-Feng Zheng

State Key Laboratory for Physical Chemistry of Solid Surfaces and Department of Chemistry, College of Chemistry and Chemical Engineering, Xiamen University, Xiamen 361005, China

A remarkable solvent effect in a single-phase synthesis of monodisperse amine-capped Au nanoparticles is demonstrated. The selective use of linear hydrocarbons or small aromatic solvents is found critical to obtain high-quality Au nanoparticles with tunable size of 3–10 nm.

Chinese Chemical Letters 24 (2013) 457



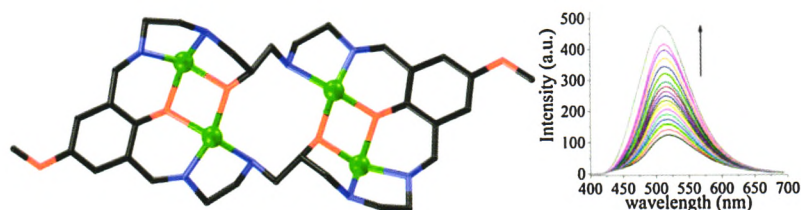
Syntheses and structures of tetranuclear Zn(II) complexes with *in situ* generated macrocyclic Schiff base ligands: Applications in Zn²⁺ sensing

Cai-Xia Ding, Chang-Hua He, Yong-Shu Xie

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

Three tetranuclear Zn(II) complexes with *in situ* generated macrocyclic Schiff base ligands have been synthesized and structurally characterized, and the macrocyclic ligands have been used in fluorescent Zn²⁺ sensing.

Chinese Chemical Letters 24 (2013) 463



Fluorescence quenching of triazatruxene-based glycocluster induced by peanut agglutinin lectin

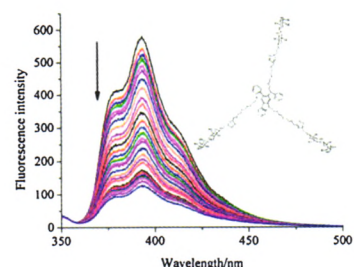
Chinese Chemical Letters 24 (2013) 467

Ke-Rang Wang^{a,b}, Hong-Wei An^{a,b}, Dan Han^{a,b}, Feng Qian^{a,b}, Xiao-Liu Li^{a,b}

^aKey Laboratory of Chemical Biology of Hebei Province, College of Chemistry and Environmental Science, Hebei University, Baoding 071002, China

^bKey Laboratory of Medicinal Chemistry and Molecular Diagnosis of Ministry of Education, Hebei University, Baoding 071002, China

A new triazatruxene-based fluorescent glycocluster has been synthesized, which exhibited fluorescence quenching upon binding with peanut agglutinin lectin.



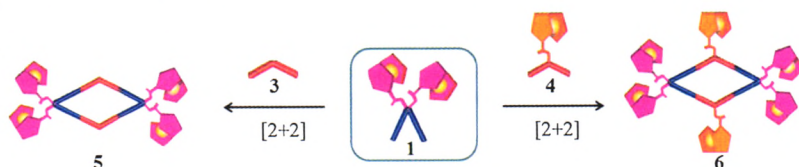
A new family of supramolecular multiferrocenyl rhomboids: Synthesis, characterization, and their electrochemical behavior

Chinese Chemical Letters 24 (2013) 471

Jiang-Kun Ou-Yang, Li-Jun Chen, Lin Xu, Cui-Hong Wang, Hai-Bo Yang

Shanghai Key Laboratory of Green Chemistry and Chemical Processes, Department of Chemistry, East China Normal University, Shanghai 200062, China

Two novel, supramolecular, multiferrocenyl rhomboids **5** and **6** have been successfully constructed from newly designed 60° ferrocenyl donor precursor **1** via coordination-driven self-assembly. The structures of all multiferrocenyl rhomboids were characterized by multinuclear NMR (¹H and ³¹P), CSI-TOF-MS, and PM6 semi-empirical molecular simulation, and their electrochemical behaviors have been investigated.



Solid state self-assembly of triptycene-based catechol derivatives by multiple O-H...O hydrogen bonds

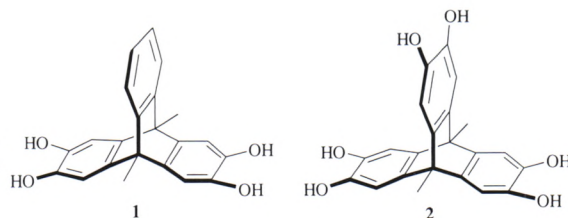
Chinese Chemical Letters 24 (2013) 475

Ying Han^{a,b}, Yi Jiang^a, Chuan-Feng Chen^a

^aBeijing National Laboratory for Molecular Sciences, CAS Key Laboratory of Molecular Recognition and Function, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China

^bUniversity of Chinese Academy of Sciences, Beijing 100049, China

Two triptycene-based catechol derivatives **1** and **2** could self-assemble into interesting networks in the solid state, in which multiple O-H...O hydrogen bonding interactions played important roles.



Design of quinoline-based fluorescent probe for the ratiometric detection of cadmium in aqueous media

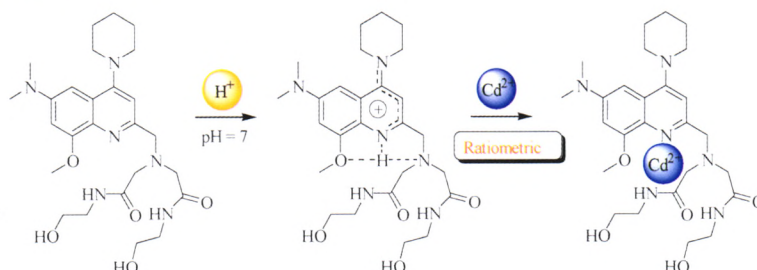
Chinese Chemical Letters 24 (2013) 479

Qing Liu^{a,b}, Guo-Ping Li^{a,b}, Dong-Jian Zhu^{a,b}, Lin Xue^a, Hua Jiang^a

^aBeijing National Laboratory for Molecular Sciences, CAS Key Laboratory of Photochemistry, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190 China

^bUniversity of Chinese Academy of Sciences, Beijing 100049, China

A new fluorescent probe is capable of responding to Cd²⁺ with a significant turn-on and ratiometric fluorescence signal output in aqueous solution.



Chinese Chemical Letters 24 (2013) 483

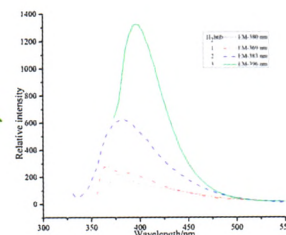
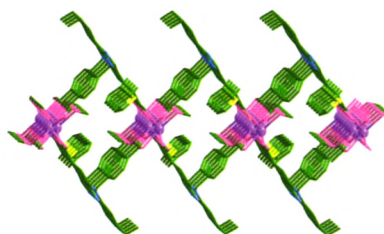
The structure and luminescence properties of three complexes based on bifunctional imidazole-dicarboxylate connector

Jin-An Zhao^a, Shu-Fang Chen^b, Dan-Dan Zhao^b, Yan Guo^b,
Kun Peng^b, Ji-Yong Hu^a

^aDepartment of Chemistry and Chemical Engineering, Henan University of Urban Construction, Pingdingshan 467036, China

^bCollege of Chemistry and Molecular Engineering, Zhengzhou University, Zhengzhou 450052, China

To study the diverse coordination modes of the H₂btib, three new coordination architectures have been synthesized. Complex **1** exhibits 1D single chain structure, while **2** shows 1D double metal chain motif, and **3** features a 2D layer topology. Also, **1**, **2** and **3** display strong emission band in the solid state at room temperature.



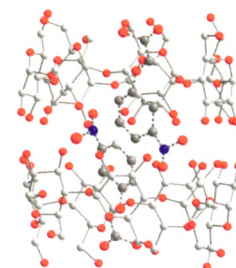
The structural analysis of the inclusion complex of β -cyclodextrin with *m*-nitrophenoxyacetic acid

Chun-Hua Diao, Zhe Xu, Min-Jie Guo, Xin Chen, Jing Liu, Zhi Fan

College of Sciences, Tianjin University of Science and Technology, Tianjin 300457, China

The inclusion behavior of β -cyclodextrin with *m*-nitrophenoxyacetic acid shows that β -cyclodextrin forms a 2:1 complex with *m*-nitrophenoxyacetic acid, in which the disordered guest molecule adjusts itself to attain the most stable accommodation into the cavity. In comparison to the inclusion complex of β -cyclodextrin with *p*-nitrophenoxyacetic acid, the host-guest stoichiometries are different, *i.e.*, 2:1 for *m*-nitrophenoxyacetic acid and 1:1 for *p*-nitrophenoxyacetic acid, while the inclusion orientation and the packing pattern of the host are similar in both complexes.

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Coupling microchip electrophoresis with MALDI-TOF-MS based on a freezing technique

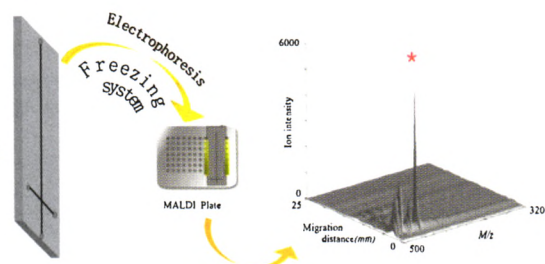
Lei Nie^a, Guo-Bin Xu^{a,b}, Xiao-Yan Wang^a, Yun Liu^a, Peng-Yuan Yang^{a,b}

^aDepartment of Chemistry, Fudan University, Shanghai 200433, China

^bInstitutes of Biomedical Sciences of Shanghai Medical College, Fudan University, Shanghai 200433, China

A freezing technique was used in coupling microfluidic chip with MALDI-TOF-MS for the first time and this protocol has been applied to peptide analyses successfully.

Chinese Chemical Letters 24 (2013) 491

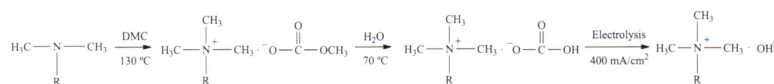


Synthesis and properties of long-chain quaternary ammonium hydroxides

Tao Geng, Xiao-Guang Teng, Qiu-Xiao Li, Ya-Jie Jiang, Guo-Jin Li

China Research Institute of Daily Chemical Industry, Taiyuan 030001, China

We herein report the synthesis of long-chain quaternary ammonium hydroxides using an electrochemical membrane reactor containing a cationic exchange membrane. The present procedure has many advantages, such as mild reaction conditions, easy operational procedures and environment friendly. The synthesized long-chain QAHS are as strongly alkaline as conventional short-chain QAHS and exhibit good surface activity.



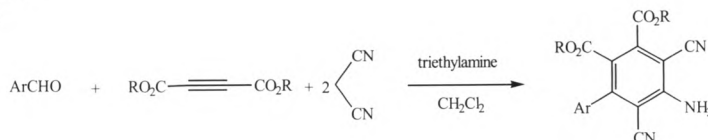
Chinese Chemical Letters 24 (2013) 494

Chinese Chemical Letters 24 (2013) 497

Pseudo four-component and regioselective synthesis of 4-amino-3,5-dicyano-6-arylphthalates using triethylamine catalyst

Bagher Mohammadi^a, Mansoor Shafieey^b, Hamed Kazemi^b, Ali Ramazani^c^aDepartment of Chemistry, Payame Noor University, P.O. Box 19395-3697, Tehran, Iran^bDepartment of Chemistry, Payame Noor University, P.O. Box 97, Abhar, Iran^cDepartment of Chemistry, University of Zanjan, P.O. Box 45195-313, Zanjan, Iran

A one-pot, triethylamine-catalyzed synthesis of 4-amino-3,5-dicyano-6-arylphthalates is described.

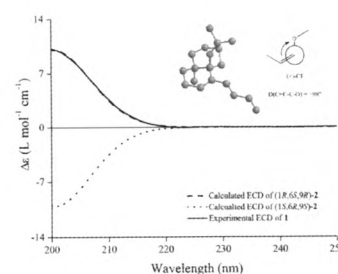


Chinese Chemical Letters 24 (2013) 500

Absolute configuration of Buagafuran: An experimental and theoretical electronic circular dichroism study

Li Li, Chun Li, Yi-Kang Si, Da-Li Yin

Beijing Key Laboratory of Active Substances Discovery and Druggability Evaluation, Institute of Materia Medica, Chinese Academy of Medical Sciences & Peking Union Medical College, Beijing 100050, China

The absolute configuration of Buagafuran has been confirmed as (1*R*,6*S*,9*R*) by a combination of experimental and theoretical electronic circular dichroism studies.

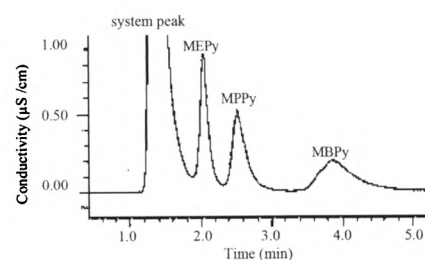
Chinese Chemical Letters 24 (2013) 503

Separation and determination of pyrrolidinium ionic liquid cations by ion chromatography with direct conductivity detection

Ren Qing Zhang, Hong Yu, Xiao Jiao Sun

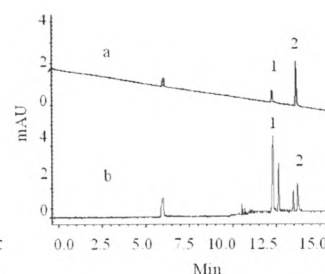
Key Laboratory of Photonic and Electronic Bandgap Materials, Ministry of Education and College of Chemistry and Chemical Engineering, Harbin Normal University, Harbin 150025, China

A method for rapid and simultaneous determination of multiple pyrrolidinium ionic liquid cations that have no ultraviolet absorption by ion chromatography with direct conductivity detection was developed.



Chinese Chemical Letters 24 (2013) 506

Chelatometric dispersive liquid-liquid microextraction followed by capillary electrophoresis for the analysis of total and water soluble copper in *Rhizoma coptidis*

Fan-Yun Meng^{a,c}, Ying-Qin Wei^{a,b,c}, Heng Lu^{a,c}, Xiao-Teng Zhou^{a,c}, Jin-Xin Liu^{a,c}, Geng Li^{a,c}, Jing-Yi Hou^{a,c}^aBeijing Key Laboratory of Protection and Utilization of Chinese Medicine, Beijing Normal University, Beijing 100875, China^bSchool of Chemical Engineering, Shandong Institute of Light Industry, Jinan 250353, China^cInstitute of Natural Medicine and Chinese Medicine Resources, Beijing Normal University, Beijing 100875, ChinaA new method for the analysis of total and water soluble copper in *Rhizoma coptidis* was proposed using chelatometric dispersive liquid-liquid microextraction (cDLLME) followed by capillary electrophoresis.

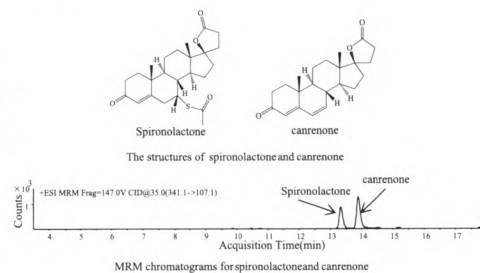
Chinese Chemical Letters 24 (2013) 509

Simultaneous determination of seven prohibited substances in cosmetic products by liquid chromatography–tandem mass spectrometry

Cai-Sheng Wu, Ying Jin, Jin-Lan Zhang, Yan Ren, Zhi-Xin Jia

Institute of Materia Medica, Chinese Academy of Medical Sciences & Peking Union Medical College, Beijing 100050, China

Spirolactone and canrenone have the same precursor ion and product ion, cannot be separated by multiple reaction monitoring (MRM) mode. After different mobile phases were tried, it was found that mobile phase consisting of 0.2% (v/v) formic acid aqueous solution and methanol containing 0.2% (v/v) formic acid could improve the separation resolution.

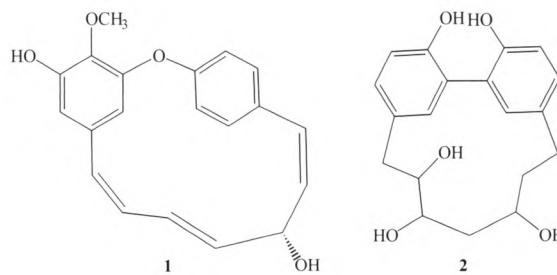


Two new cyclic diarylheptanoids from the stems of *Ostryopsis nobilis*

Yan-Xia Zhang, Bing Xia, Yan Zhou, Li-Sheng Ding, Shu-Lin Peng

Key Laboratory of Mountain Ecological Restoration and Bioresource Utilization, Chengdu Institute of Biology, Chinese Academy of Sciences, Chengdu 610041, China

Two new cyclic diarylheptanoids, ostryopsitriol (1) and ostryopsitriol (2), together with six known compounds, were isolated from the stems of endemic medicinal plant of *Ostryopsis nobilis*.

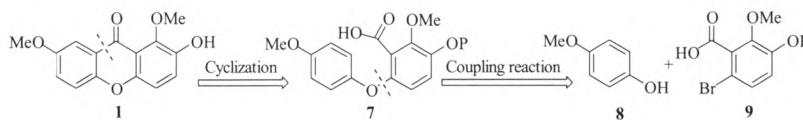


Chinese Chemical Letters 24 (2013) 512

Synthesis of 1,7-dimethoxy-2-hydroxyxanthone, a natural product with potential activity on erectile dysfunction

Wen-Jing Liu^a, De-Sheng Mei^b, Wen-Hu Duan^{a,b}^aSchool of Pharmacy, East China University of Science and Technology, Shanghai 200237, China^bDepartment of Medicinal Chemistry, Shanghai Institute of Materia Medica, Chinese Academy of Sciences, Shanghai 201203, China

In this paper, the first synthesis of 1,7-dimethoxy-2-hydroxyxanthone (1) was reported featuring two key reactions: a copper-catalyzed coupling reaction and an intramolecular cyclization.



Chinese Chemical Letters 24 (2013) 515

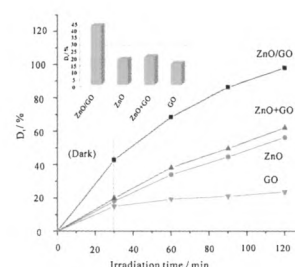
Preparation of ZnO/GO composite material with highly photocatalytic performance via an improved two-step method

Ya-Li Chen, Chun-E. Zhang, Chao Deng, Peng Fei, Ming Zhong, Bi-Tao Su

Key Laboratory of Eco-Environment-Related Polymer Materials, Ministry of Education of China, Key Laboratory of Polymer Materials of Gansu Province, College of Chemistry and Chemical Engineering, Northwest Normal University, Lanzhou 730070, China

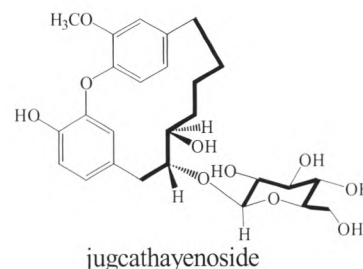
ZnO/GO composite material was successfully prepared via an improved two-step method. The photocatalytic activity of ZnO is greatly enhanced by combining with GO.

Chinese Chemical Letters 24 (2013) 518



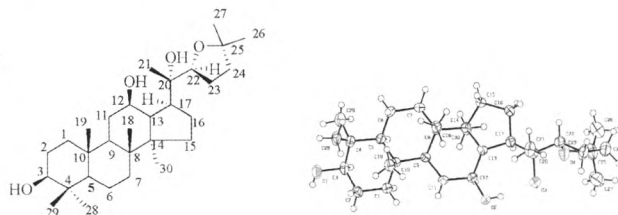
Chinese Chemical Letters 24 (2013) 521

Diarylheptanoids from the root bark of *Juglans cathayensis*

Juan Li^a, Jia-Xiang Sun^b, Heng-Yi Yu^b, Zu-Yu Chen^b, Xiao-Ya Zhao^c, Han-Li Ruan^b^aDepartment of Pharmacy, Tongji Hospital Affiliated Tongji Medical College, Huazhong University of Science and Technology, Wuhan 430030, China^bSchool of Pharmacy, Tongji Medical College of Huazhong University of Science and Technology, Wuhan 430030, China^cHubei Entry-Exit Inspection and Quarantine Bureau, Wuhan 430050, ChinaA new diarylheptanoid glucoside, named jugcathayenoside, was isolated from the root bark of *Juglans cathayensis*.

Chinese Chemical Letters 24 (2013) 524

A new ginsengenin containing an oxacyclopentane-ring isolated from the acid hydrolysate of total ginsenosides

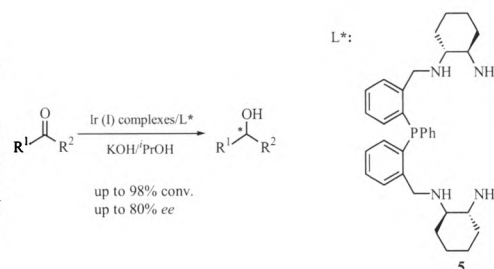
Qing-Xiang Guan^a, De-Ya Sun^a, Ji-Hua Liu^a, Wei Li^{a,b}, Qin Meng^a, Cong Geng^a, Jian-Yuan Yin^a^aSchool of Pharmacy, Jilin University, Changchun 130021, China^bBeijing Laviana Pharmactech Co., Ltd., Beijing 102206, ChinaA novel aglycone (1) with an oxacyclopentane ring in the C-17 side chain was isolated from the acid hydrolysate of *Panax ginseng*. The new structure was elucidated based on spectroscopy and single-crystal X-ray diffraction analyses.

Chinese Chemical Letters 24 (2013) 527

Novel chiral C₂-symmetric multidentate aminophosphine ligands for use in catalytic asymmetric reduction of ketones

Ya-Qing Xu, Shen-Luan Yu, Yan-Yun Li, Zhen-Rong Dong, Jing-Xing Gao

State Key Laboratory of Physical Chemistry of Solid Surfaces, National Engineering Laboratory for Green Chemical Productions of Alcohols-Ethers-Esters and Department of Chemistry, College of Chemistry and Chemical Engineering, Xiamen University, Xiamen 361005, China

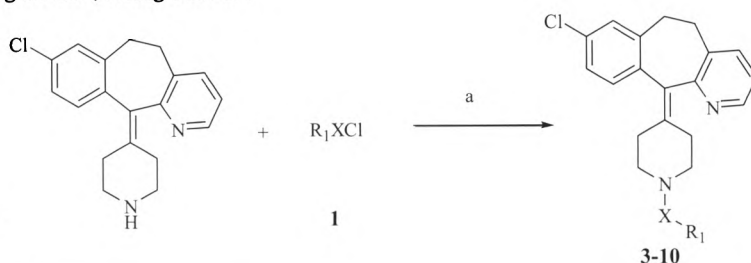
A series of novel chiral C₂-symmetric multidentate aminophosphine ligands have been successfully synthesized by Schiff-base condensation of bis(*o*-formylphenyl)phenylphosphane and easily available monoprotected (1*R*,2*R*)-diaminocyclohexane. The catalytic properties of these ligands were investigated in Ir-catalyzed asymmetric transfer hydrogenation of various aromatic ketones, giving the corresponding optical active alcohols with up to 98% conversion and good ee under mild reaction conditions.

Chinese Chemical Letters 24 (2013) 531

Synthesis and biological evaluation of novel derivatives of desloratadine

Shuai Mu^{a,b}, Xiao-Shuai Xie^c, Duan Niu^c, Da-Shuai Zhang^c, Deng-Ke Liu^d, Chang-Xiao Liu^b^aSchool of Chemical Engineering and Technology, Tianjin University, Tianjin 300072, China^bState Key Laboratory of Drug Delivery Technology and Pharmacokinetics, Tianjin Institute of Pharmaceutical Research, Tianjin 300193, China^cGraduate School of Tianjin Medical University, Tianjin 300070, China^dTianjin Key Laboratory of Molecular Design and Drug Discovery, Tianjin Institute of Pharmaceutical Research, Tianjin 300193, China

Twenty-nine derivatives of desloratadine were synthesized and evaluated. Several compounds showed promising diuretic activity.



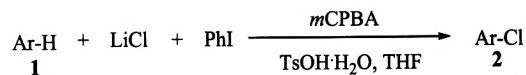
An efficient chlorination of aromatic compounds using a catalytic amount of iodobenzene

Ting-Ting Li^a, Cui Xu^b, Chang-Bin Xiang^a, Jie Yan^a

^aCollege of Chemical Engineering and Materials Sciences, Zhejiang University of Technology, Hangzhou 310032, China

^bForeign Language School, Zhejiang Shuren University, Hangzhou 310015, China

An efficient method was developed for chlorination of aromatic compounds using iodobenzene as catalyst.

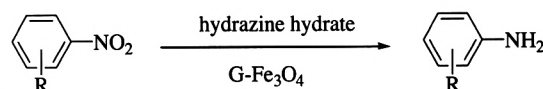


Magnetic graphene nanocomposite as an efficient catalyst for hydrogenation of nitroarenes

Cheng Feng, Hai-Yan Zhang, Ning-Zhao Shang, Shu-Tao Gao, Chun Wang

College of Sciences, Agricultural University of Hebei, Baoding 071001, China

Superparamagnetic graphene-Fe₃O₄ nanocomposite (G-Fe₃O₄) was used as an efficient catalyst for the reduction of nitroarenes with hydrazine hydrate.



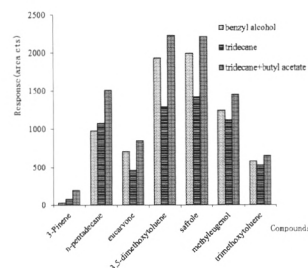
Analysis of volatile compounds in *Herba Asari* by single-drop micro-extraction gas chromatography mass spectrometry

Guan-Jie Wang^a, Mei-Ling Qi^b

^aNational Institutes for Food and Drug Control, Beijing 100050, China

^bSchool of Chemistry, Beijing Institute of Technology, Beijing 100081, China

Mixed solvent extraction based on SDME was developed for analysis of volatile components in TCM.



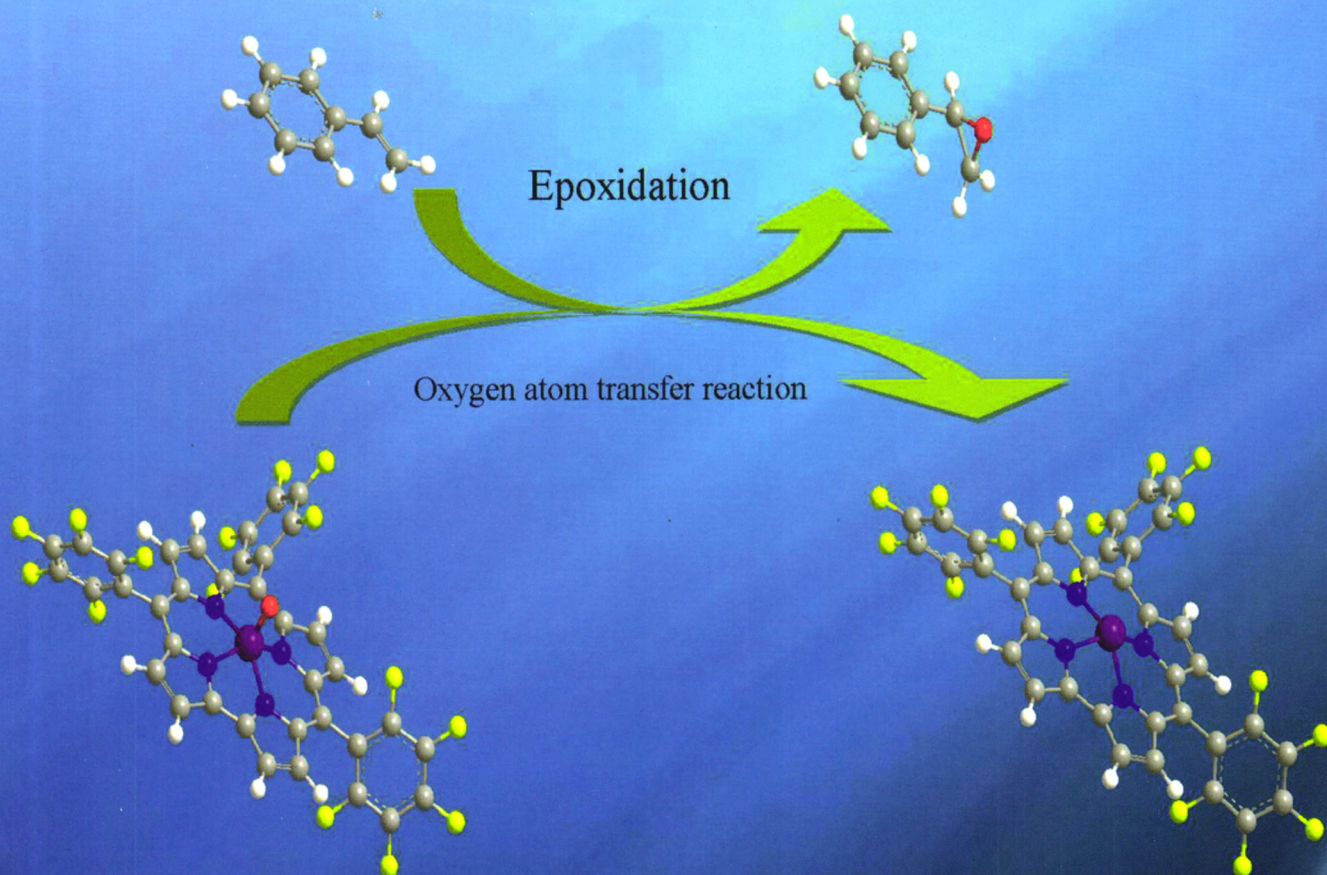
Director: China Association for Science and Technology
Sponsor: Chinese Chemical Society
Editor-in-Chief: QIAN Xu-Hong
Editor: Editorial Board of Chinese Chemical Letters
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E-mail: cclbj@imm.ac.cn
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Online Submission: http://ees.elsevier.com/cclet
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The oxygen atom transfer reaction of Mn(V)-oxo corrole and alkene substrates may proceed *via* different mechanisms in different solvents.



Provided by Prof. Haiyang Liu et al.

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