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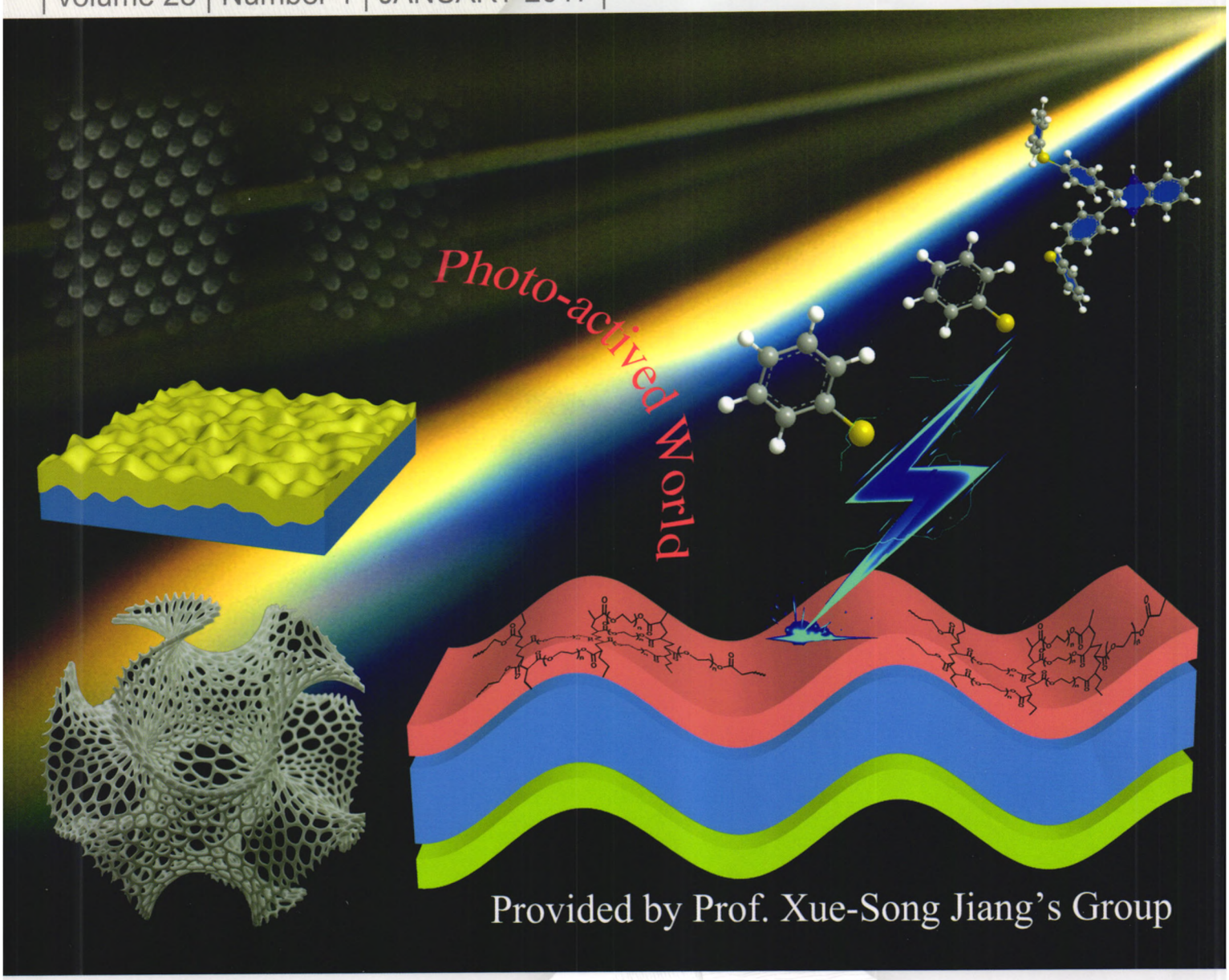

Provided by Prof. Xue-Song Jiang's Group

ORIGINAL ARTICLE
Bai Yang et al.
Controlling coffee ring structure on hydrophobic polymer surface by manipulating wettability with O_2 plasma

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Graphical Abstracts/Chin Chem Lett 28 (2017) iii-x

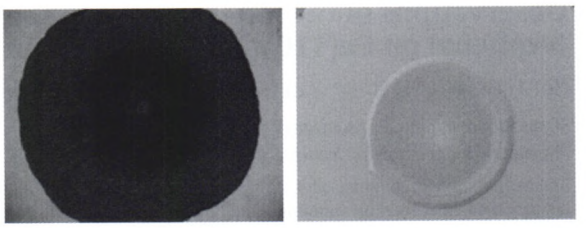
Original Articles

Chinese Chemical Letters 28 (2017) 1

Controlling coffee ring structure on hydrophobic polymer surface by manipulating wettability with O_2 plasma

Li-Ying Cui[a,b], Yu Yan[b], Xin-Yu Zhao[a], Cun-Long Yu[a], Ying Ma[c], Bai Yang[b]

[a]*College of Resources and Environment, Jilin Agricultural University, Changchun 130118, China*
[b]*State Key Laboratory of Supramolecular Structure and Materials, College of Chemistry, Jilin University, Changchun 130012, China*
[c]*School of Materials Science and Engineering, Shenyang Jianzhu University, Shenyang 110168, China*



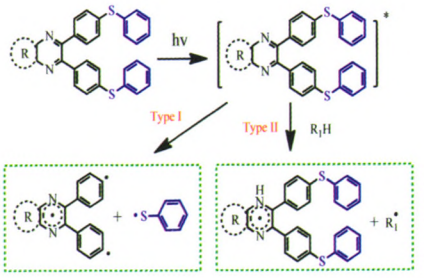
A simple and novel method is reported for controlling coffee ring structure on polystyrene (PS) film surface by O_2 plasma. This method provides a new way to tune coffee ring structure with smart surface and may be potentially useful for a range of application at material deposition and diagnosing diseases.

Chinese Chemical Letters 28 (2017) 6

Combining photo-cleavable and hydrogen-abstracting groups in quinoxaline with thioether bond as hybrid photoinitiator

Ji-Yuan Yao, Hong-Hao Hou, Xiao-Dong Ma, Hong-Jie Xu, Zi-Xing Shi, Jie Yin, Xue-Song Jiang

School of Chemistry and Chemical Technology, State Key Lab of Metal Matrix Composite, Shanghai Jiao Tong University, Shanghai 200240, China



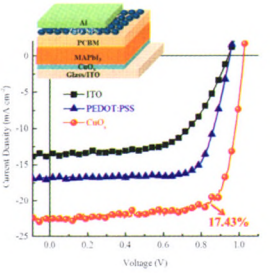
A series of high efficient photoinitiators combining photo-cleavable and hydrogen-abstracting groups in quinoxaline with thioether bond were synthesized, and their photointiation properties were investigated.

Chinese Chemical Letters 28 (2017) 13

Solution-processed CuO_x as an efficient hole-extraction layer for inverted planar heterojunction perovskite solar cells

Zhi-Kai Yu, Wei-Fei Fu, Wen-Qing Liu, Zhong-Qiang Zhang, Yu-Jing Liu, Jie-Lin Yan, Tao Ye, Wei-Tao Yang, Han-Ying Li, Hong-Zheng Chen

State Key Laboratory of Silicon Materials, MOE Key Laboratory of Macromolecular Synthesis and Functionalization, Department of Polymer Science and Engineering, Zhejiang University, Hangzhou 310027, China



A high power conversion efficiency of 17.43% is achieved by integrating a solution-processed CuO_x film as the hole-transporting layer for inverted planar heterojunction perovskite solar cells.

doi:10.1016/S1001-8417(16)30423-5

万方数据

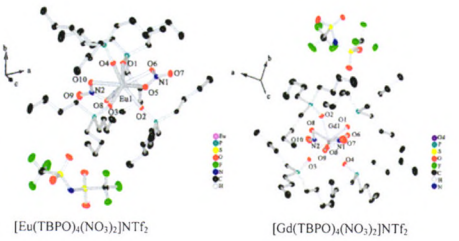
Chinese Chemical Letters 28 (2017) 19

Preparation and characterization of single crystals $[Ln(TBPO)_4(NO_3)_2]NTf_2$ (Ln = Eu, Gd)

Chuan-Dong Deng, Yu-Jia Qiao, Qing-De Chen, Xing-Hai Shen

Beijing National Laboratory for Molecular Sciences (BNLMS), Fundamental Science on Radiochemistry and Radiation Chemistry Laboratory, College of Chemistry and Molecular Engineering, Peking University, Beijing 100871, China

We prepared two single crystals $[Ln(TBPO)_4(NO_3)_2]NTf_2$ (Ln = Eu, Gd) which are the focus on 8-coordinate complexes of lanthanide nitrates with tetra-TRPO molecules. The two compounds have similar coordinate structure, in which four TBPO molecules and two bidentate nitrates coordinate with the central metal ion and constitute the cation, while NTf_2^- acts as the anion counterpart.



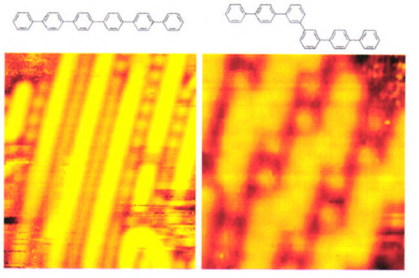
Chinese Chemical Letters 28 (2017) 24

Observations of carbon–carbon coupling of 4,4″ -dibromo-*p*-terphenyl on Cu(110) surface at molecular level

Xin-Li Leng[a], Li-Li Song[b], Yan Lu[a], Xiao-Qing Liu[a], Li Wang[a]

[a]*Department of Physics, Nanchang University, Nanchang 330031, China*
[b]*Department of Chemistry, Nanchang University, Nanchang 330031, China*

The carbon–carbon couplings of 4,4″-dibromo-p-terphenyl (DBTP) on Cu(110) surface have been investigated at a single molecular level by scanning tunneling microscopy (STM), demonstrating that the direct carbon–carbon coupling coexists with Ullmann coupling after annealing.



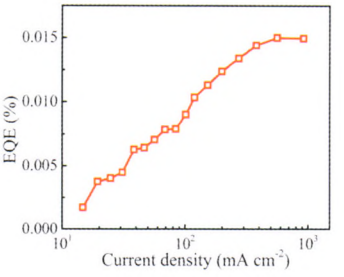
Chinese Chemical Letters 28 (2017) 29

Sky-blue perovskite light-emitting diodes based on quasi-two-dimensional layered perovskites

Lu Cheng[a], Yu Cao[a], Rui Ge[a], Ying-Qiang Wei[a], Na-Na Wang[a], Jian-Pu Wang[a], Wei Huang[a,b]

[a]*Key Laboratory of Flexible Electronics & Institute of Advanced Materials, Jiangsu National Synergetic Innovation Center for Advanced Materials, Nanjing Tech University, Nanjing 211816, China*
[b]*Key Laboratory for Organic Electronics and Information Displays & Institute of Advanced Materials Jiangsu National Synergetic Innovation Center for Advanced Materials, Nanjing University of Posts & Telecommunications, Nanjing 210023, China*

Perovskite light-emitting diodes based on quasi-two-dimensional layered perovskites exhibit a sky-blue emission with maximum external quantum efficiency of 0.015% at brightness of 186 cd/m².



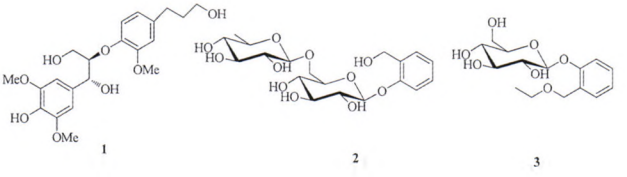
Chinese Chemical Letters 28 (2017) 32

Phenolic constituents from the roots of *Alangium chinense*

Yan Zhang, Yun-Bao Liu, Yong Li, Shuang-Gang Ma, Li Li, Jing Qu, Dan Zhang, Jian-Dong Jiang, Shi-Shan Yu

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 new phenolics (**1–3**), and twenty-eight known compounds (**4–31**), were isolated from an ethanolic extract of ro`ots of *Alangium chinense*. Compounds **1, 10–17, 19–21,** and **23** showed strong antioxidant activity with IC_{50} values of 0.14–8.18 μmol/L.



万方数据

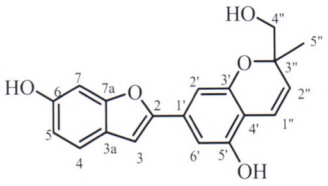
New phenolic compounds from the leaves of *Artocarpus heterophyllus*

Chinese Chemical Letters 28 (2017) 37

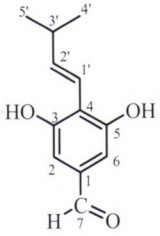
Xiao-Ling Wang[a], Xia-Xia Di[b], Tao Shen[b], Shu-Qi Wang[b], Xiao-Ning Wang[b]

[a]*The Second Hospital of Shandong University, Jinan 250033, China*
[b]*Department of Natural Product Chemistry, Key Laboratory of Chemical Biology (Ministry of Education), School of Pharmaceutical Sciences, Shandong University, Jinan 250012, China*

Twenty compounds including two new ones, artocarstilbene B (**1**) and (*E*)-3,5-dihydroxy-4-(3-methylbut-1-enyl)benzaldehyde (**2**), were isolated from *Artocarpus heterophyllus*. Some showed inhibitory activity against the proliferation of the PC-3, NCI-H460, and A549 cancer cells.



1



2

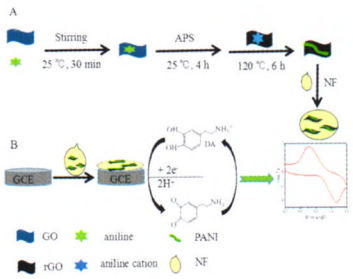
A highly sensitive dopamine sensor based on a polyaniline/reduced graphene oxide/Nafion nanocomposite

Chinese Chemical Letters 28 (2017) 41

Li-Qing Xie[a], Yan-Hui Zhang[a], Fei Gao[a,b], Quan-An Wu[a], Piao-Yang Xu[a], Shan-Shan Wang[a], Ning-Ning Gao[a], Qing-Xiang Wang[a,b]

[a]*College of Chemistry and Environment, Minnan Normal University, Zhangzhou 363000, China*
[b]*Fujian Provincial Key Laboratory of Modern Analytical Science and Separation Technology, Minnan Normal University, Zhangzhou 363000, China*

A highly conductive nanocomposite of polyaniline/reduced graphene oxide (PANI-rGO) was prepared using one-pot solvethermal method, and then a hybrid material of PANI-rGO and Nafion (PANI-rGO-NF) was obtained upon ultrasonication, and used to modify glassy carbon electrode for the trace determination of dopamine (DA).



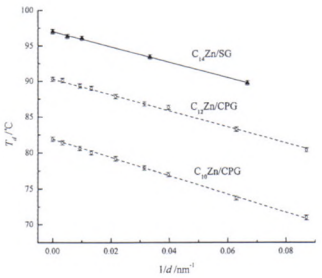
Solid-solid phase transition of $(1\text{-}C_{14}H_{29}NH_3)_2ZnCl_4$ in nanopores of silica gel for thermal energy storage

Chinese Chemical Letters 28 (2017) 49

Qi-Feng Li, Chao Wang, Xiao-Zheng Lan

College of Chemistry and Materials, Shandong Agricultural University, Taian 271018, China

Phase change transition temperatures (T_d) of $C_{14}Zn$ confined in silica gel (15, 30,100 and 200 nm) show dependence on pore size.



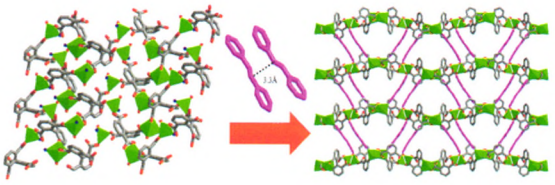
Impact of the flexibility of pillar linkers on the structure and CO_2 adsorption property of "pillar-layered" MOFs

Chinese Chemical Letters 28 (2017) 55

Yue-Ling Xu[a,b], Qiang Gao[a,b], Meng Zhao[a,b], Huan-Jun Zhang[a,b], Ying-Hui Zhang[a,b], Ze Chang[a,b]

[a]*School of Materials Science and Engineering, National Institute for Advanced Materials, TKL of Metal and Molecule-Based Material Chemistry, Nankai University, Tianjin 300350, China*
[b]*Collaborative Innovation Center of Chemical Science and Engineering (Tianjin), Nankai University, Tianjin 300071, China*

A pillar-layered MOFs based on non-flexible 1,2-bis(4-pyridyl)ethylene linker shows distinct structure as well as CO_2 adsorption behaviors in comparison with other "pillar-layered" MOFs based on flexible pillar linker.



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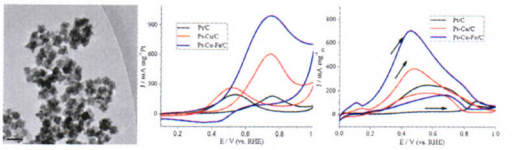
Concave Pt-Cu-Fe ternary nanocubes: One-pot synthesis and their electrocatalytic activity of methanol and formic acid oxidation

Chinese Chemical Letters 28 (2017) 60



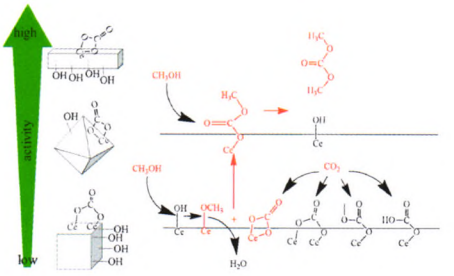
Ying-Xia Wang[a,b], Chuan-Fei Liu[a], Man-Li Yang[b], Xi-Hui Zhao[a], Zhi-Xin Xue[a], Yan-Zhi Xia[a,c]

[a]*Collaborative Innovation Center for Marine Biomass Fibers, Materials and Textiles of Shandong Province, Qingdao University, Qingdao 266071, China*
[b]*Materials Science and Engineering College, Qingdao University, Qingdao 266071, China*
[c]*State Key Laboratory Cultivating Base for New Materials and Modern Textiles, Qingdao University, Qingdao 266071, China*

Pt-Cu-Fe NCs was prepared as catalysts in methanol and formic acid electro-oxidation, and it exhibited higher catalytic activity and durability than Pt-Cu/C, and Pt/C catalysts.

An *in situ* infrared study of dimethyl carbonate synthesis from carbon dioxide and methanol over well-shaped CeO_2

Chinese Chemical Letters 28 (2017) 65



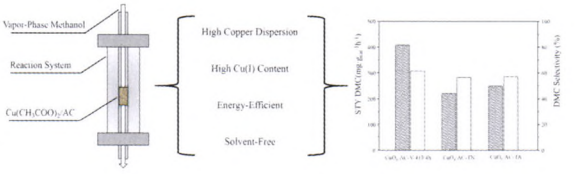
Shu-Yang Zhao, Sheng-Ping Wang, Yu-Jun Zhao, Xin-Bin Ma

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

The number of –OH groups and bidentate carbonates formed from CO_2 adsorption is closely related to ceria crystal planes, further leading to the different activity of ceria in the formation of dimethyl carbonate.

Novel fabrication of copper oxides on AC and its enhanced catalytic performance on oxidative carbonylation of methanol

Chinese Chemical Letters 28 (2017) 70



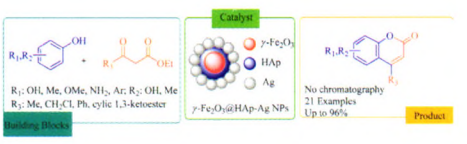
Ke Shi, Shou-Ying Huang, Zhong-Yao Zhang, Sheng-Ping Wang, Xin-Bin Ma

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

A novel approach is developed *via* vapor-phase methanol reduction to fabricate cooper oxides on AC, which is both energy-efficient and solvent-free. The catalyst as prepared exhibited an enhanced catalytic activity in the oxidative carbonylation of methanol to dimethyl carbonate owing to the better copper dispersion and higher Cu^+ content.

Preparation of a novel, efficient, and recyclable magnetic catalyst, γ-Fe_2O_3@HAp-Ag nanoparticles, and a solvent- and halogen-free protocol for the synthesis of coumarin derivatives

Chinese Chemical Letters 28 (2017) 75



Zahra Abbasi[a], Sobhan Rezayati[a], Maryam Bagheri[a], Rahimeh Hajinasiri[b]

[a]*Young Researchers and Elite Club, Ilam Branch, Islamic Azad University, Ilam, Islamic Republic of Iran*
[b]*Chemistry Department, Qaemshahr Branch, Islamic Azad University, PO BOX 163, Qaemshahr, Islamic Republic of Iran*

A catalyst of Ag supported on hydroxyapatite (HAp)-core–shell magnetic γ-Fe_2O_3 nanoparticles was prepared and characterized by FT-IR, XRD, TEM, SEM, and VSM analysis for use with the Pechmann condensation reaction. The nanomagnetic catalyst could be readily separated from solution via application of an external magnet allowing for straightforward recovery and reuse.

万方数据

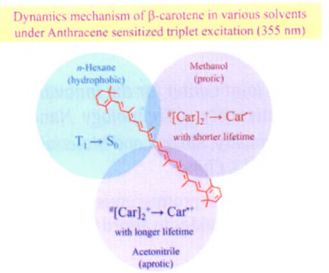
Chinese Chemical Letters 28 (2017) 83

Triplet excitation dynamics of β-carotene studied in three solvents by *ns* flash photolysis spectroscopy

Ying Jia, Ying Shi, Peng Wang, Jian-Ping Zhang

Department of Chemistry, Renmin University of China, Beijing 100872, China

The dynamic mechanisms of β-carotene in *n*-hexane, in methanol and in acetonitrile were studied by *ns* photolysis spectroscopy under anthracene-sensitized triplet excitation. The cationic species generated in various polar solvents have different kinetics.



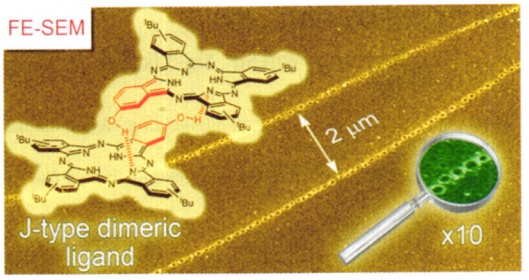
Chinese Chemical Letters 28 (2017) 89

Unusual self-assembled nanoaggregation of the thermally stable metal-free *slipped-cofacial* J-type phthalocyanine dimer

Alexander Yu. Tolbin[a], Larisa G. Tomilova[a,b]

[a]*Institute of Physiologically Active Compounds, Russian Academy of Sciences, Chernogolovka 142432, Russian Federation*
[b]*Department of Chemistry, M. V. Lomonosov Moscow State University, Moscow 119991, Russian Federation*

Nanoaggregation of the thermally stable *tert*-butyl substituted phthalocyanine dimer of J-type was observed by the field emission scanning electron microscopy. The "coffee"-type ordered ensembles are represented as threads.



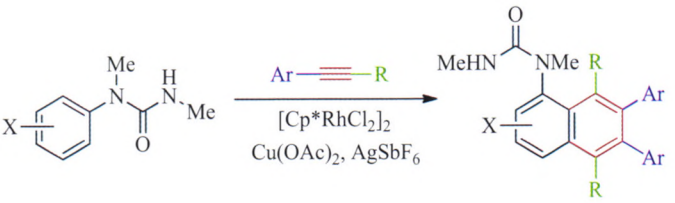
Chinese Chemical Letters 28 (2017) 92

Rhodium catalyzed regioselective arene homologation of aryl urea *via* double C–H bond activation and migratory insertion of alkyne

Yan Wang, Hao Zhou, Ke Xu, Mei-Hua Shen, Hua-Dong Xu

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

Regioselective arene homologation with symmetric or unsymmetric alkynes using urea as directing group has been achieved successfully *via* Rhodium catalyzed oxidative cyclization.



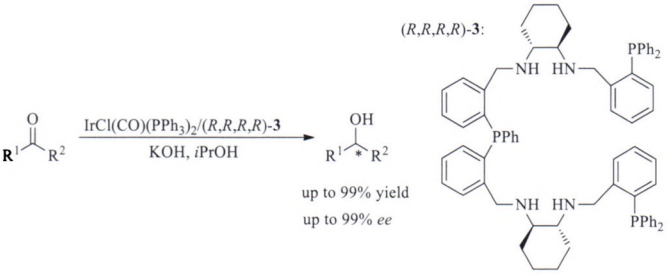
Chinese Chemical Letters 28 (2017) 97

Novel chiral multidentate P_3N_4-type ligand for asymmetric transfer hydrogenation of aromatic ketones

Meng Tao, Fang Wu, Teng Li, Yan-Yun Li, Jing-Xing Gao

College of Chemistry and Chemical Engineering, and National Engineering Laboratory for Green Chemical Production of Alcohols-Ethers-Esters, Xiamen University, Xiamen 361005, China

Novel chiral multidentate ligand has been synthesized and characterized, which exhibited highly catalytic activity and enantioselectivity for the asymmetric transfer hydrogenation of various ketones under mild conditions.



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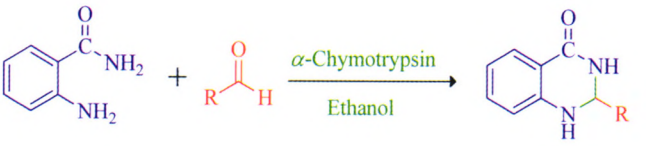
Chinese Chemical Letters 28 (2017) 101

Synthesis of 2,3-dihydroquinazolin-4(1*H*)-ones catalyzed by α-chymotrypsin

Shi-Guo Zhang[b], Zong-Bo Xie[a,b], Lian-Sheng Liu[b], Meng Liang[b], Zhang-Gao Le[a,b]

[a]*Jiangxi 2011 Joint Center for the Innovative Mass Spectrometry and Instrumentation, East China University of Technology, Nanchang 330013, China*
[b]*School of Chemistry, Biology and Material Science, East China University of Technology, Nanchang 330013, China*



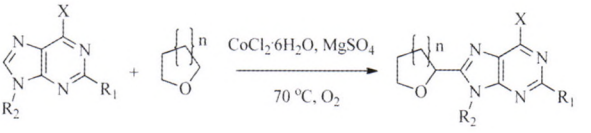
α-Chymotrypsin has a promiscuous ability to catalyze the cyclocondensation of aldehydes with 2-aminobenzamides to afford the corresponding 2,3-dihydroquinazolin-4(1*H*)-ones.

Chinese Chemical Letters 28 (2017) 105

Synthesis of C8-alkyl-substituted purine analogues by direct alkylation of 8-*H* purines with tetrahydrofuran catalyzed by $CoCl_2 \cdot 6H_2O$

Hong-Ying Niu[a], Ling-Yun Su[b], Shi-Xia Bai[b], Jian-Ping Li[b], Xi-Lan Feng[a], Hai-Ming Guo[b]

[a]*School of Chemistry and Chemical Engineering, Henan Institute of Science and Technology, Xinxiang 453003, China*
[b]*School of Chemistry and Chemical Engineering, Henan Normal University, Xinxiang 453007, China*



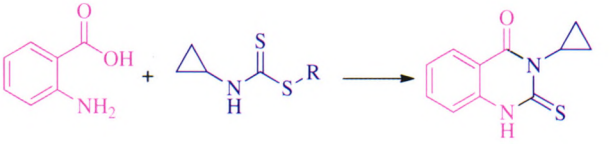
C8-Alkyl-substituted purine analogues were synthesized through direct alkylation of 8-*H* purine with tetrahydrofuran in the presence of Co catalyst in one step. The reactions gave a series of novel C8-oxygen heterocyclic alkyl purine compounds in good yields under mild reaction conditions by the readily available alkylating reagents, providing a complementary route to the classical coupling reactions for the synthesis of C8-alkyl-substituted purine analogues.

Chinese Chemical Letters 28 (2017) 109

Practical approach to 2-thioxo-2,3-dihydroquinazolin-4(1*H*)-one *via* dithiocarbamate–anthranilic acid reaction

Najmedin Azizi, Mahtab Edrisi

Department of Green Chemistry, Chemistry & Chemical Engineering Research Center of Iran, P.O. Box 14335-186, Tehran, Iran



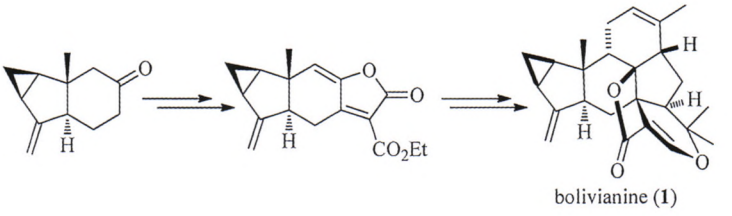
An efficient and straightforward method for the synthesis of 2-thioxo-2,3-dihydroquinazolin-4(1*H*)-one derivatives from the reaction of anthranilic acid derivatives with various dithiocarbamate derivatives has been successfully developed.

Chinese Chemical Letters 28 (2017) 113

An alternative total synthesis of bolivianine

Jin-Peng Li, Chang-Chun Yuan, Biao Du, Bo Liu

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



An alternative total synthesis of bolivianine in twelve steps is herein reported on the basis of our bioinspired total synthesis reported previously. The present total synthesis features straightforward transformation from an aldol product to the butenolide of the target molecule, and stereoselective Diels-Alder cycloaddition to construct ring E, as well as the final spontaneous IMHDA process.

万方数据

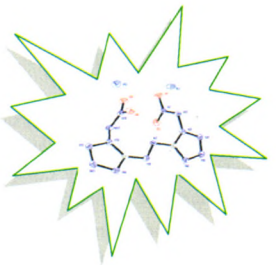
Chinese Chemical Letters 28 (2017) 117

Synthesis and properties of potassium 5,5′-azobis (1-nitraminotetrazolate): A green primary explosive with superior initiation power

Ya-Nan Li[a], Bo-Zhou Wang[a], Yuan-Jie Shu[a], Lian-Jie Zhai[a], Sheng-Yong Zhang[a], Fu-Qiang Bi[a], Yu-Chuan Li[b]

[a]*Key Laboratory of Fluorine & Nitrogen Chemicals, Xi'an Modern Chemistry Research Institute, Xi'an 710065, China*
[b]*School of Material Science & Engineering, Beijing Institute of Technology, Beijing 100081, China*

Potassium 5,5′-azobis(1-nitraminotetrazolate) was obtained *via* a safe and convenient synthetic procedure. Its high sensitivity, high nitrogen and oxygen content, high positive heat of formation and superior detonation properties showed it could serve as a green replacement for lead(II) azide.



Chinese Chemical Letters 28 (2017) 121

Design, synthesis and insecticidal activities of novel 1-substituted-5-(trifluoromethyl)-1*H*-pyrazole-4-carboxamide derivatives

Zhi-Bing Wu[a], Xiang Zhou[a], Yi-Qiang Ye[a], Pei-Yi Wang[a], Song Yang[a,b]

[a]*State Key Laboratory Breeding Base of Green Pesticide and Agricultural Bioengineering, Key Laboratory of Green Pesticide and Agricultural Bioengineering, Ministry of Education, Research and Development Center for Fine Chemicals, Guizhou University, Guiyang 550025, China*
[b]*College of Pharmacy, East China University of Science & Technology, Shanghai 200237, China*

A series of novel 5-(trifluoromethyl)-1*H*-pyrazole-4-carboxamide derivatives were synthesized, which were found having broad-spectrum insecticidal activities against dipterous insects including *Culex pipiens pallens*.

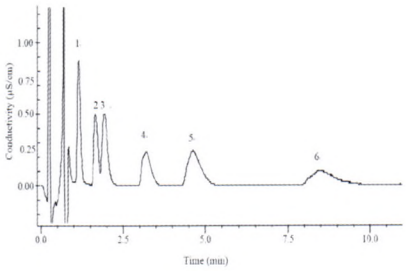
Chinese Chemical Letters 28 (2017) 126

Rapid and simultaneous determination of piperidinium and pyrrolidinium ionic liquid cations by ion pair chromatography coupled with direct conductivity detection

Xin-Xin Zhang, Yong-Qiang Liu, Hong Yu, Ren-Qing Zhang

College of Chemistry and Chemical Engineering, Harbin Normal University, Harbin 150025, China

A method of fast and simultaneous determination of *N*-methyl-*N*-ethyl piperidinium, *N*-methyl-*N*-propyl piperidinium, *N*-methyl-*N*-butyl piperidinium and *N*-methyl-*N*-ethyl pyrrolidinium, *N*-methyl-*N*-propyl pyrrolidinium, *N*-methyl-*N*-butyl pyrrolidinium cations by ion-pair chromatography with direct conductivity detection was described.



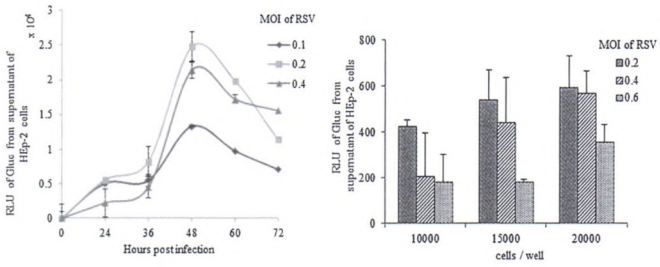
Chinese Chemical Letters 28 (2017) 131

An RNA polymerase I-driven human respiratory syncytial virus minigenome as a tool for quantifying virus titers and screening antiviral drug

Yuan-Hui Fu, Ya-Ru Liu, Yan-Peng Zheng, Nan Jiang Yue-Ying-Jiao, Wei Li, Xiang-Lei Peng, Jin-Sheng He

College of Life Sciences and Bioengineering, Beijing Jiaotong University, Beijing 100044, China

The feasibility of using an RNA polymerase I-driven RSV minigenome as a tool for quantifying virus titers and screening anti-RSV drug was investigated and a rapid, sensitive and quantitative method to quantitate RSV replication and screen anti-RSV drugs was developed.



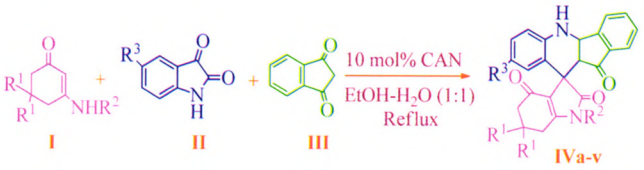
万方数据

Chinese Chemical Letters 28 (2017) 136

One pot three component synthesis of spiro [indolo-3,10′-indeno[1,2-*b*] quinolin]-2,4,11′-triones as a new class of antifungal and antimicrobial agents

Kalawati Meena[a], Sudesh Kumari[a], Jitender M. Khurana[a], Amita Malik[b], Chetan Sharma[c], Harsh Panwar[c]

[a]*Department of Chemistry, University of Delhi, Delhi 110007, India*
[b]*Dyal Singh College, University of Delhi, Lodhi Road, Delhi 110003, India*
[c]*Department of Dairy Microbiology, College of Dairy Science and Technology, Guru Angad Dev Veterinary and Animal Science University, Ludhiana 141004, India*



A simple and efficient three component procedure has been developed for the synthesis of highly substituted spiro[indolo-3,10′-indeno[1,2-*b*]quinolin]-2,4,11′-triones by one pot three component condensation of enaminones, isatin and indane-1,3-dione in ethanol:water (1:1) in presence of ceric ammonium nitrate (CAN) as catalyst.

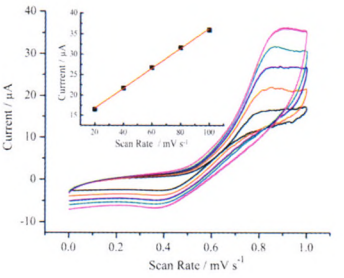
Chinese Chemical Letters 28 (2017) 143

Graphene oxide–MnO_2 nanocomposite-modified glassy carbon electrode as an efficient sensor for H_2O_2

Hui-Li Xu, Wei-De Zhang

School of Chemistry and Chemical Engineering, South China University of Technology, Guangzhou 510640, China

A GO/MnO_2 nanocomposite electrode consisting of graphene oxide and mesoporous manganese dioxide displays excellent electrocatalytic performance for determination of hydrogen peroxide with low detection limit, high sensitivity and stability.



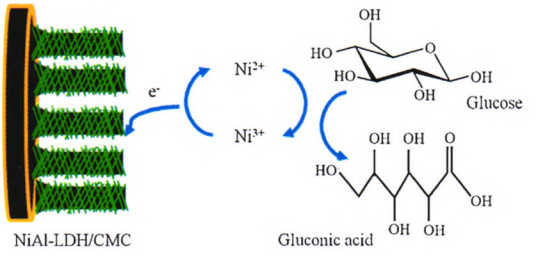
Chinese Chemical Letters 28 (2017) 149

A novel strategy to prepare LDH networks loaded carbon structure by C-MEMS techniques for glucose detection

Bo Hai[a], Ying-Quan Zou[b], Gui-Bao Guo[a], Zheng-De Wang[a], Yun-Ying Liu[a], Xiao-Xia Wang[a], Hui Yan[a], Li-Tong Ma[a], Yu-Chen Bai[a]

[a]*School of Chemistry and Chemical Engineering, Inner Mongolia University of Science & Technology, Baotou 014010, China*
[b]*College of Chemistry, Beijing Normal University, Beijing 100875, China*

NiAl-LDH decorated carbon microcylinder (CMC) was synthesized by combining C-MEMS technology with *in situ* growth progress. NiAl-LDH/CMC modified glass carbon electrodes (GCE) exhibited great electrical performance towards glucose.



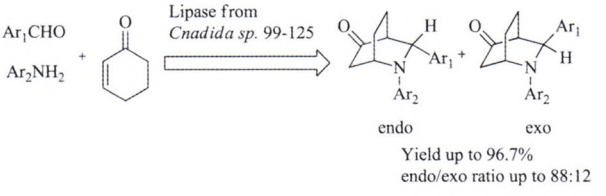
Chinese Chemical Letters 28 (2017) 153

Enzyme-catalyzed direct three-component aza-Diels–Alder reaction using lipase from *Candida* sp. 99–125

Dong-Hang Yin, Wei Liu, Zhi-Xiang Wang, Xin Huang, Jing Zhang, De-Chun Huang

[a]*Department of Pharmaceutical Engineering, China Pharmaceutical University, Nanjing 210009, China*
[b]*Department of Energy and Mechanical Engineering, Nanjing Normal University, Nanjing 210042, China*

The direct three-component aza-Diels–Alder reaction was conducted using lipase from *Candida* sp. 99–125 as a catalyst for the first time.



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