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Aggregation-induced emission enhancement of yellow photoluminescent carbon nanodots

Provide by Prof. Chengzhi Huang's group, SWU, China



REVIEW

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COMMUNICATION

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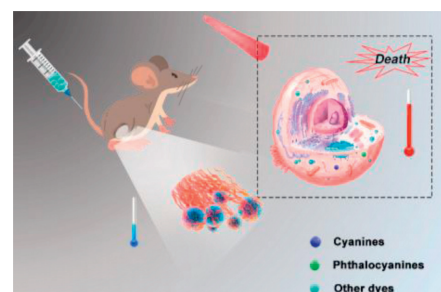
Reviews

Near-infrared small molecular fluorescent dyes for photothermal therapy

Yisha Chen^a, Li Li^a, Weijie Chen^b, Haiyan Chen^a, Jun Yin^b^a Department of Biomedical Engineering, School of Engineering, State Key Laboratory of Natural Medicines, China Pharmaceutical University, Nanjing 210009, China^b 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

This review aims to provide a summary of the progress in fluorescent dyes for photothermal therapy in recent years and it is classified according to the structure of organic molecules including cyanines, phthalocyanines, rhodamine analogues and BODIPYs.

Chinese Chemical Letters 30 (2019) 1353

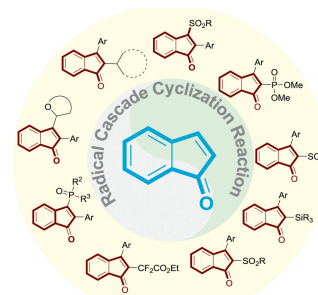


Recent applications of radical cascade reaction in the synthesis of functionalized 1-indenones

Yinli Zhang^a, Kai Sun^a, Qiyun Lv^{a,b}, Xiaolan Chen^a, Lingbo Qu^a, Bing Yu^{a,b}^a College of Chemistry and Molecular Engineering, Zhengzhou University, Zhengzhou 450001, China^b Henan Nonferrous Metals Geological Exploration Institute, Zhengzhou 450052, China

1-Indenones are important scaffolds in natural products, biologically active molecules as well as functional materials. Recently, radical cascade cyclization has emerged as an efficient and powerful strategy for the construction of valuable and versatile functionalized 1-indenones. In this review, the recent advances of this rapidly growing area were summarized. The selected examples have been classified according to the type of reaction substrates such as 1,3-diarylpropynones, 2-alkynylbenzonitriles, arylpropynols, 1,5-enynes and 2-alkynylated bromocinnamates.

Chinese Chemical Letters 30 (2019) 1361

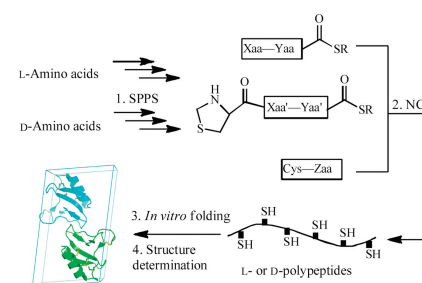


Chemical synthesis and structure determination of venom toxins

Bobo Dang^{a,b}^a School of Life Sciences, Westlake University, Hangzhou 310024, China^b Institute of Biology, Westlake Institute for Advanced Study, Hangzhou 310024, China

Venom toxins are receiving growing interests as novel therapeutics and biophysical probes. This review briefly discusses recent advances in the chemical synthesis and structure determination of venom toxins.

Chinese Chemical Letters 30 (2019) 1369



Communications

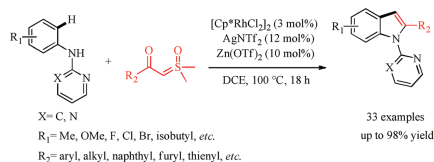
Rhodium(III)-catalyzed intermolecular cyclization of anilines with sulfoxonium ylides toward indoles

Zhihao Shen, Chao Pi, Xiuling Cui, Yangjie Wu

Department of Chemistry, Henan Key Laboratory of Chemical Biology and Organic Chemistry, Key Laboratory of Applied Chemistry of Henan Universities, Zhengzhou University, Zhengzhou 450052, China

C2-substituted indoles were efficiently prepared with excellent regio-selectivity from *N*-phenylpyridin-2-amines and sulfoxonium ylides via cascade reaction of C–H alkylation/nucleophilic cyclization.

Chinese Chemical Letters 30 (2019) 1374



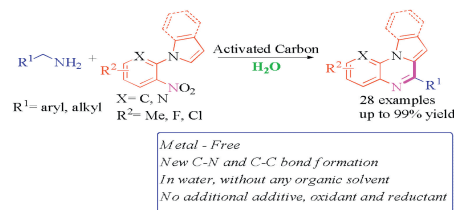
Unexpected activated carbon-catalyzed pyrrolo[1,2-*a*]quinoxalines synthesis in water

Qi Sun, Liyan Liu, Yu Yang, Zhenggen Zha, Zhiyong Wang

Hefei National Laboratory for Physical Sciences at Microscale, CAS Key Laboratory of Soft Matter Chemistry & Center for Excellence in Molecular Synthesis of Chinese Academy of Sciences, Collaborative Innovation Center of Suzhou Nano Science and Technology & School of Chemistry and Materials Science in University of Science and Technology of China, Hefei 230026, China

In this manuscript, an efficient method for the synthesis of pyrrolo[1,2-*a*]quinoxaline derivatives was developed. By virtue of the activated carbon/water system, a facile protocol was established to construct the intramolecular C–N and C–C bond at the same time. Meanwhile, this reaction has a wide substrate scope and good functional group tolerance. All these transformations can be performed smoothly under mild conditions without any transition metal, additive, oxidant and reductant.

Chinese Chemical Letters 30 (2019) 1379



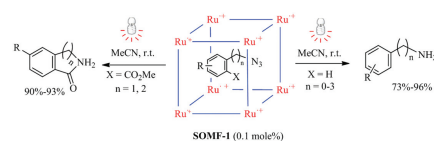
Ruthenium(II)-cored supramolecular organic framework-mediated recyclable visible light photoreduction of azides to amines and cascade formation of lactams

Yi-Peng Wu, Meng Yan, Zhong-Zheng Gao, Jun-Li Hou, Hui Wang, Dan-Wei Zhang, Junliang Zhang, Zhan-Ting Li

Department of Chemistry, Shanghai Key Laboratory of Molecular Catalysis and Innovative Materials, Collaborative Innovation Centre of Chemistry for Energy Materials (iChEM), Fudan University, Shanghai 200433, China

Porous [Ru(bpy)₃]²⁺-cored supramolecular metal organic framework can efficiently catalyze visible light photoreduction of various azides to afford amines and, through cascade reactions, lactams.

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Pure organic room-temperature phosphorescent *N*-allylquinolinium salts as anti-counterfeiting materials

Qingxia Xiong^{a,b}, Chao Xu^d, Nianming Jiao^{a,b}, Xiang Ma^d, Yanqiang Zhang^{a,c}, Suojian Zhang^a

^a Beijing Key Laboratory of Ionic Liquids Clean Process, CAS Key Laboratory of Green Process and Engineering, State Key Laboratory of Multiphase Complex Systems, Institute of Process Engineering, Chinese Academy of Sciences, Beijing 100049, China

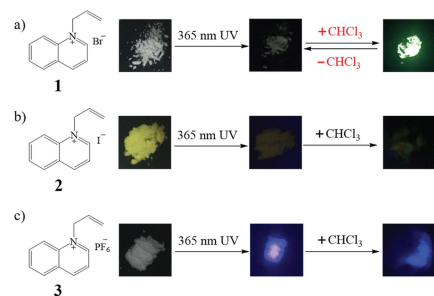
^b School of Chemical Engineering, University of Chinese Academy of Sciences, Beijing 100049, China

^c Zhengzhou Institute of Emerging Industrial Technology, Zhengzhou 450000, China

^d Key Laboratory for Advanced Materials and Institute of Fine Chemicals, School of Chemistry and Molecular Engineering, East China University of Science and Technology, Shanghai 200237, China

Pure organic room-temperature phosphorescence (RTP) materials have been attracting much attention recently. Herein, we report a facile approach combining heavy atom effect and external solvent stimuli to realize RTP. *N*-Allylquinolinium bromide under 365 nm UV exhibited intense green RTP emission with response upon adding chloroform. This interesting phenomenon endowed *N*-allylquinolinium bromide great potential as an anticounterfeiting material.

Chinese Chemical Letters 30 (2019) 1387



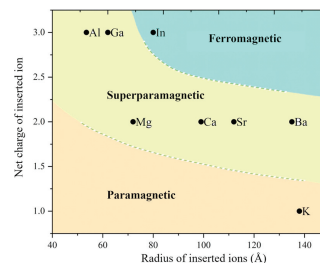
Magnetism tuned by intercalation of various metal ions in coordination polymer

Chengfei Wang, Wei Zhang, Wenwu Li, Yuanyuan Zhang, Xiaodong Tang, Ming Hu

State Key Laboratory of Precision Spectroscopy, Key Laboratory of Polar Materials and Devices (MOE), School of Physics and Materials Science, East China Normal University, Shanghai 200241, China

Insertion of various metal ions have changed the ferromagnetic coordination frameworks into paramagnetic, superparamagnetic, or ferromagnetic. The net charge and radius of the ions determined the magnetism of the host frameworks.

Chinese Chemical Letters 30 (2019) 1390



Photostable lysosomal imaging of living cell with hyperspectral stimulated Raman scattering microscopy using a probe based on bisarylbutadiyne

Cong Ding^a, Yage Chen^{b,c}, Haozheng Li^{b,c}, Bingyao Wang^a, Qi Wei^a, Huajun Tang^{b,c}, Shaokang Jia^a, Zhiyong He^a, Ping Wang^{b,c}, Xiang Zhou^a

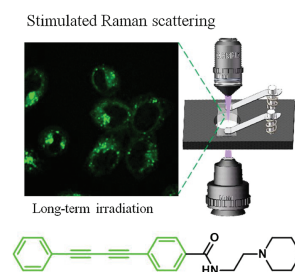
^a College of Chemistry and Molecular Sciences, Key Laboratory of Biomedical Polymers of the Ministry of Education, Wuhan University, Wuhan 430072, China

^b Britton Chance Center for Biomedical Photonics, Wuhan National Laboratory for Optoelectronics—Huazhong University of Science and Technology, Wuhan 430074, China

^c MoE Key Laboratory for Biomedical Photonics, Collaborative Innovation Center for Biomedical Engineering, School of Engineering Sciences, Huazhong University of Science and Technology, Wuhan 430074, China

Lysosome-selective Raman probe, Lyso-BADY, was created with improved Raman signal intensity, stability as well as specificity under the visualization of hyperspectral stimulated Raman scattering (SRS) microscopy. Prolonged exposure to irradiation further proved its photostability and potentiality for continuous imaging.

Chinese Chemical Letters 30 (2019) 1393



Biomimetic nanochannel membrane for cascade response of borate and cis-hydroxyl compounds: An IMP logic gate device

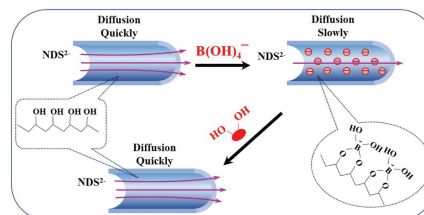
Meitao Deng^a, Meng Yang^{a,b}, Yaqing Xu^a, Yuqiong Sun^a, Qing Wang^a, Jianbo Liu^a, Jin Huang^a, Xiaohai Yang^a, Kemin Wang^a

^a State Key Laboratory of Chemo/Biosensing and Chemometrics, College of Chemistry and Chemical Engineering, Key Laboratory for Bio-Nanotechnology and Molecular Engineering of Hunan Province, Hunan University, Changsha 410082, China

^b College of Chemistry Biology and Environment, Yuxi Normal University, Yuxi 653100, China

Biomimetic cascade response of borate and cis-hydroxyl compounds in nanochannels, acted as IMP logic gates.

Chinese Chemical Letters 30 (2019) 1397



In situ real-time study buckling behavior of boron nitride nanotubes with axial compression by TEM

Guoxin Chen^{a,b}, Huanming Lu^a, Junfeng Cui^a, Haitao Yu^a, Bo Wang^a, Yan Liu^a, He Li^{a,c}, Nan Jiang^{a,b,c}

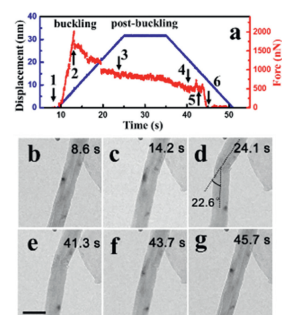
^a Key Laboratory of Marine Materials and Related Technologies, CAS, Zhejiang Key Laboratory of Marine Materials and Protective Technologies, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo 315201, China

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

^c Center of Materials Science and Optoelectronics Engineering, University of Chinese Academy of Sciences, Beijing 100049, China

The real time analysis structure evolution of BNNT with compression showed that the formation of V-shape in the post-buckling before BNNT fracture was reversible.

Chinese Chemical Letters 30 (2019) 1401



Design optimized intermixed phase by tuning polymer-fullerene intercalation for free charge generation

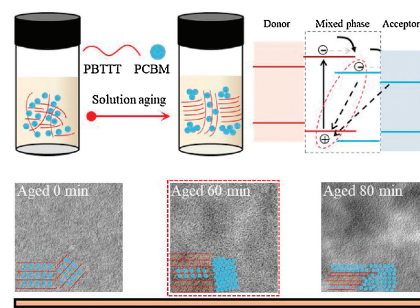
Qiang Zhang^{a,b}, Jiangang Liu^a, Xinhong Yu^a, Yanchun Han^a

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

^b University of the Chinese Academy of Sciences, Beijing 100049, China

The content of the polymer/PCBM intermixed phase was tuned through the polymer solution conformation by aging. Furthermore, the quantitative relationship between the charge separation and the content of intermixed phase was established.

Chinese Chemical Letters 30 (2019) 1405



Aggregation-induced emission enhancement of yellow photoluminescent carbon dots for highly selective detection of environmental and intracellular copper(II) ions

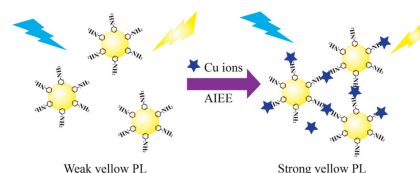
Wenyi Lv^a, Min Lin^a, Rongsheng Li^a, Qianqian Zhang^b, Hui Liu^a, Jian Wang^a, Chengzhi Huang^{a,b}

^a Key Laboratory of Luminescent and Real-Time Analytical Chemistry (Southwest University), Ministry of Education, College of Pharmaceutical Science, Southwest University, Chongqing 400715, China

^b Chongqing Key Laboratory of Biomedical Analysis (Southwest University), Chongqing Science & Technology Commission, College of Chemistry and Chemical Engineering, Southwest University, Chongqing 400715, China

Photoluminescent (PL) carbon nanodots (CDs) are prepared through a simple one-step hydrothermal treatment of *o*-phenylenediamine (OPD), and the as-prepared OPD-CDs show yellow PL emission under the ultraviolet excitation, which can be further enhanced by Cu²⁺ ions owing to Cu²⁺ ions induced aggregation of OPD-CDs through the coordination of Cu²⁺ with amino groups on the surface of OPD-CDs.

Chinese Chemical Letters 30 (2019) 1410



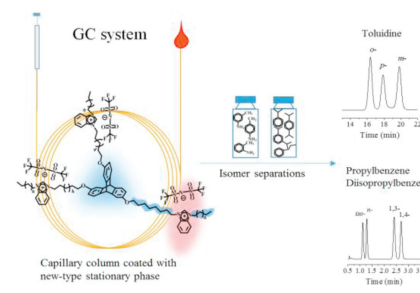
A new type of triptycene-based stationary phases with alkylated benzimidazolium cations for gas chromatographic separations

Jun He, Meiling Qi

Key Laboratory of Cluster Science, Ministry of Education of China, School of Chemistry and Chemical Engineering, Analysis & Testing Center, Beijing Institute of Technology, Beijing 100081, China

The new type of triptycene-based stationary phases with alkylated benzimidazolium cations shows high selectivity towards aromatic isomers.

Chinese Chemical Letters 30 (2019) 1415



Novel 1,3,5-thiadiazine-2-thione derivatives containing a hydrazide moiety: Design, synthesis and bioactive evaluation against phytopathogenic fungi *in vitro* and *in vivo*

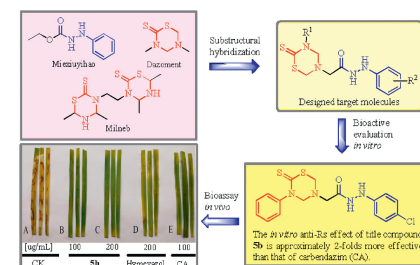
Xiaobin Wang^{a,b}, Xincan Fu^a, Min Chen^{a,b}, An Wang^a, Jinghua Yan^a, Yudong Mei^a, Mengqi Wang^a, Chunlong Yang^{a,b}

^a Jiangsu Key Laboratory of Pesticide Science, Nanjing Agricultural University, Nanjing 210095, China

^b Department of Chemistry, College of Sciences, Nanjing Agricultural University, Nanjing 210095, China

A series of novel 1,3,5-thiadiazine-2-thione derivatives bearing a hydrazide moiety were designed, synthesized and evaluated for their biological activities against phytopathogenic fungi. The antifungal bioassays indicated that the title compound **5b** impressively displayed the obvious selectivity and specificity against *Rhizoctonia solani* (Rs) *in vitro* and *in vivo*. The above researches provide a significant reference for the further structural optimization of 1,3,5-thiadiazine-2-thione derivatives bearing a hydrazide moiety as potential fungicides.

Chinese Chemical Letters 30 (2019) 1419



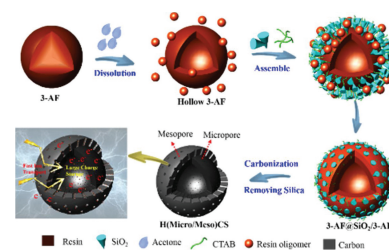
“Dissolution-reassembly” for N-doped hollow micro/meso-carbon spheres with high supercapacitor performance

Juan Du, Lei Liu, Yifeng Yu, Yue Zhang, Aibing Chen

College of Chemical and Pharmaceutical Engineering, Hebei University of Science and Technology, Shijiazhuang 050018, China

N-Doped hollow carbon spheres with mesoporous/microporous shells and outstanding performance in supercapacitor has been prepared by “dissolution-reassembly” method.

Chinese Chemical Letters 30 (2019) 1423



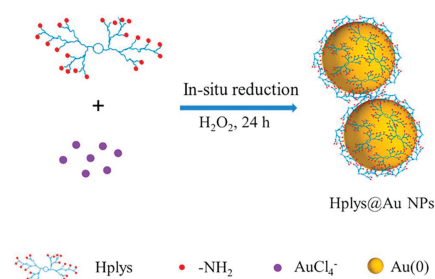
Hyperbranched polylysine: Synthesis, mechanism and preparation for NIR-absorbing gold nanoparticles

Yiying Ge, Pan Li, Yanfei Guan, Chang-Ming Dong

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

The hyperbranched polylysine fluoroborate was synthesized by NH_3BF_4 -Lys NCA ROP in triethylamine at 15 °C, during which the cyclic dimer mainly initiated ROP as the secondary initiating species. The hyperbranched polylysine can be used as a stabilizer to prepare the NIR-absorbing HPlys@Au NPs.

Chinese Chemical Letters 30 (2019) 1428



Oxidative C—H alkynylation of 3,6-dihydro-2H-pyrans

Ran Zhao^a, Guidong Feng^b, Xiaodong Xin^c, Honghao Guan^c, Jing Hua^d, Renzhong Wan^b, Wei Li^a, Lei Liu^c

^a Department of Pharmaceutical Analysis, School of Pharmacy, Shandong University of Traditional Chinese Medicine, Ji'nan 250355, China

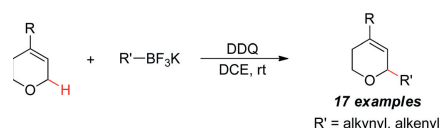
^b College of Animal Science and Veterinary Medicine, Shandong Agricultural University, Taian 271018, China

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

^d State Key Laboratory for Chemistry and Molecular Engineering of Medicinal Resources, School of Chemistry and Pharmaceutical Sciences of Guangxi Normal University, Guilin 541004, China

Current synthesis of α -substituted 3,6-dihydro-2H-pyrans dominantly relies on functional group transformation. Herein, a direct and practical oxidative C—H alkynylation and alkenylation of 3,6-dihydro-2H-pyran skeletons with a range of potassium trifluoroborates is developed. The metal-free process is well tolerated with a wide variety of 3,6-dihydro-2H-pyrans, rapidly providing a library of 2,4-disubstituted 3,6-dihydro-2H-pyrans with diverse patterns of α -functionalities for further diversification and bioactive small molecule identification.

Chinese Chemical Letters 30 (2019) 1432



A novel mitochondria-targeting tetrapeptide for subcellular delivery of nanoparticles

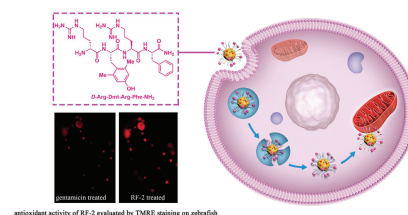
Yanhui Sun^a, Aiyun Zhan^b, Shuang Zhou^b, Xiao Kuang^b, Hongyan Shen^a, Hongzhuo Liu^b, Youjun Xu^a

^a School of Pharmaceutical Engineering, Key Laboratory of Structure-Based Drug Design & Discovery (Ministry of Education), Shenyang Pharmaceutical University, Shenyang 110016, China

^b Wuya College of Innovation, Shenyang Pharmaceutical University, Shenyang 110016, China

A novel mitochondrial-targeting tetrapeptide, RF-2 (D-Arg-Dmt-Arg-Phe-NH₂) had been developed, which showed controlled toxicity and excellent protection against gentamicin-induced hair cell damage, and more importantly, exhibited superior guidance towards mitochondrion achieved by its modified nanoparticles.

Chinese Chemical Letters 30 (2019) 1435



Two alkynyl functionalized Co(II)-MOFs as fluorescent sensors exhibiting selectivity and sensitivity for Fe³⁺ and nitroaromatic compounds

Yue Li^a, Xia Wang^a, Chengyong Xing^a, Xiurong Zhang^a, Zelong Liang^b, Xiaokang Wang^a, Kai Zhang^a, Yutong Wang^a, Di Liu^c, Weidong Fan^a, Fangna Dai^a

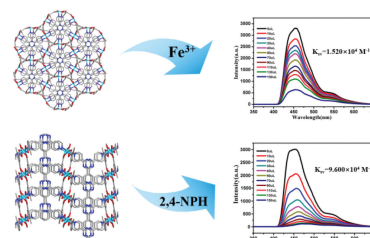
^a School of Materials Science and Engineering, College of Science, China University of Petroleum (East China), Qingdao 266580, China

^b College of Chemical Engineering, China University of Petroleum (East China), Qingdao 266580, China

^c College of Chemical and Environmental Engineering, Shandong University of Science and Technology, Qingdao 266590, China

Two alkynyl functionalized 3D frameworks with different structures were successfully synthesized for selective and sensitive detection of Fe³⁺ ions and nitroaromatic compounds through fluorescence quenching.

Chinese Chemical Letters 30 (2019) 1440



From interpenetrating polymer networks to hierarchical porous carbons for advanced supercapacitor electrodes

Ling Miao^a, Xiaoyu Qian^a, Dazhang Zhu^a, Ting Chen^a, Guchuan Ping^a, Yaokang Lv^b, Wei Xiong^c, Yafei Liu^a, Lihua Gan^a, Mingxian Liu^a

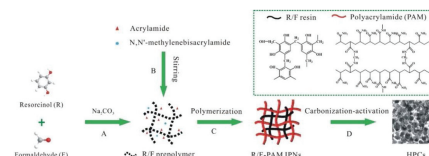
^a Shanghai Key Lab of Chemical Assessment and Sustainability, School of Chemical Science and Engineering, Tongji University, Shanghai 200092, China

^b College of Chemical Engineering, Zhejiang University of Technology, Hangzhou 310014, China

^c School of Chemistry and Environmental Engineering, Wuhan Institute of Technology, Wuhan 430073, China

A novel and effective strategy to fabricate hierarchical porous carbons for supercapacitors is developed via *in-situ* activation of interpenetrating polymer networks obtained from simultaneous polymerization of the monomers for two polymeric networks.

Chinese Chemical Letters 30 (2019) 1445



Significant enhancement in water resistance of Pd/Al₂O₃ catalyst for benzene oxidation by Na addition

Shunyu Kang^{a,b}, Meng Wang^{a,b}, Na Zhu^{a,b}, Chunying Wang^{a,b}, Hua Deng^a, Hong He^{a,b,c}

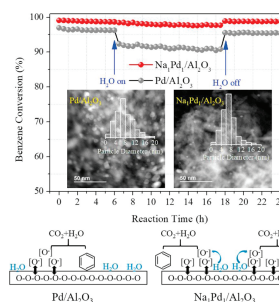
^a Center for Excellence in Regional Atmospheric Environment, Key Laboratory of Urban Pollutant Conversion, Institute of Urban Environment, Chinese Academy of Sciences, Xiamen 361021, China

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

^c State Key Joint Laboratory of Environment Simulation and Pollution Control, Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, Beijing 100085, China

Appropriate Na addition led to the formation of well-dispersed metallic Pd particles, which facilitated oxygen adsorption. Proper Na addition further promoted the transformation of absorbed water into liable surface oxygen species and improved the mobility of the lattice oxygen species, which contributed to enhanced catalytic activity and water resistance.

Chinese Chemical Letters 30 (2019) 1450



Sonochemical synthesis of silver nanoparticles coated copper wire for low-temperature solid state bonding on silicon substrate

Qiang Hu, Chen Zhao, Zhejuan Zhang, Jun Guo, Chenlu Yu, Zhuo Sun, Xianqing Piao

School of Physics & Material Science, Engineering Research Center for Nanophotonics & Advanced Instrument, Ministry of Education, East China Normal University, Shanghai 200062, China

The rapid and efficient preparation of silver-copper wire by sonochemical assisted reduction method for high antioxidant performance and low melting temperature. Good ohmic contact between Ag-Cu wire and Si substrate can be achieved at temperature as low as 320 °C.

Chinese Chemical Letters 30 (2019) 1455

