

QK1823537



ISSN 0567-7351
CN 31-1320/O6
CODEN HHHPA4
<http://sioc-journal.cn>

化学学报

ACTA CHIMICA SINICA

2018 第76卷 第5期 Vol. 76 No. 5

ISSN 0567-7351



0-5>



9 770567 735189

万方数据



中国化学会 主办
中国科学院上海有机化学研究所

化学学报

Acta Chimica Sinica

(Huaxue Xuebao)

第 76 卷 第 5 期 2018 年 5 月 15 日

目 次

综述

- 单核铁-氧和锰-氧加合物研究进展 杜俊毅, 夏春谷, 孙伟*, 化学学报, **2018**, 76(5), 329-346
- 钴催化异腈参与的偶联反应研究进展 顾正洋, 纪顺俊*, 化学学报, **2018**, 76(5), 347-356
- 酰胺直接转化: 策略与近期进展 黄培强*, 化学学报, **2018**, 76(5), 357-365
- 一步碳化多孔有机材料制备多孔碳及其性能的研究 闫婷婷, 邢国龙, 贲腾*, 化学学报, **2018**, 76(5), 366-376

研究通讯

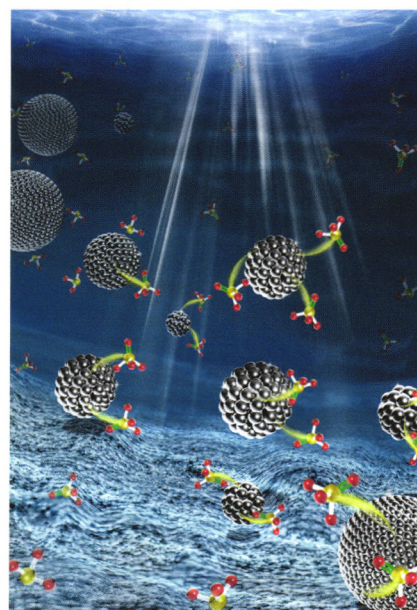
- 二芳基碘盐参与的 CO/I 交换策略构建 9-芴酮 王明, 姜雪峰*, 化学学报, **2018**, 76(5), 377-381

研究论文

- HOMO 活化的 2-吡喃酮与 2,5-二烯酮反电子需求的不对称 Diels-Alder 反应 周远春, 周志, 杜玮*, 陈应春*, 化学学报, **2018**, 76(5), 382-386
- 纳米银对水中三价砷的催化氧化研究 郭肖茹, 阴永光, 谭志强, 刘景富*, 江桂斌, 化学学报, **2018**, 76(5), 387-392
- Angiopep-2 修饰的 Ag₂S 量子点用于近红外二区脑胶质瘤成像 徐毅, 赵彦, 张叶俊, 崔之芬, 王丽华, 樊春海, 高基民*, 孙艳红*, 化学学报, **2018**, 76(5), 393-399
- 简易制备高整流比的异质纳米通道 张倩, 刘庆青, 张倩倩, 范霞, 翟锦*, 化学学报, **2018**, 76(5), 400-407
- 基于酸度诱导的 HSA 与 BDE154 的光谱和计算模拟研究 徐婕, 魏雨晨, 伍智蔚, 易忠胜*, 化学学报, **2018**, 76(5), 408-414

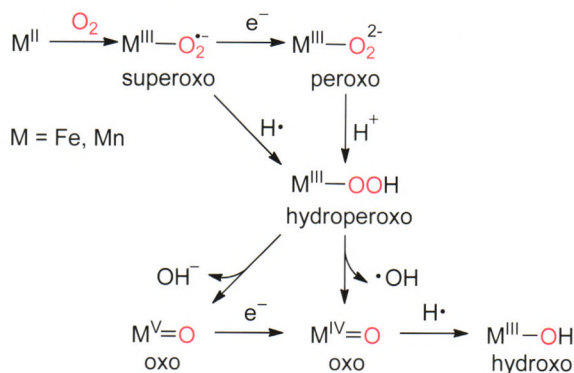
* 通信联系人.

On the cover: Silver nanoparticles is found to catalyze the oxidation of As(III) into As(V) under environmentally relevant conditions, indicating its new role of detoxification of As(III) besides sterilization. This finding provides new insights into treatment of As contamination. [Liu, Jingfu *et al.* on page 387-392.]



Review

Progress in Mononuclear Iron-Oxygen and Manganese-Oxygen Adducts

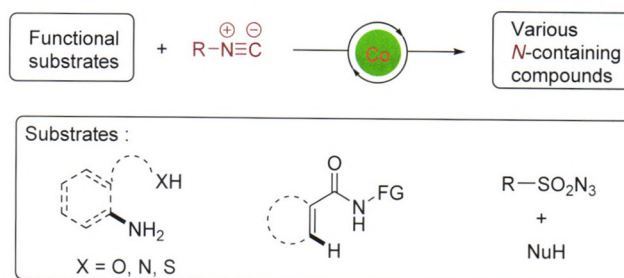


In biological system, metalloenzymes utilize dioxygen for metabolically oxidative transformations, in which organic compounds can be oxidized efficiently. Therefore, it is of great interest to unravel the enzymatic mechanism in the development of clean and efficient catalytic oxidation reactions. In the dioxygen activation by metalloenzymes, a series of metal-oxygen adducts, such as metal-superoxo, -peroxo, -hydroperoxo, -oxo and -hydroxo species, are formed as the active intermediates. In general, these intermediates are difficult to capture for further characterizations and investigations because of their unstability and the complicated enzymatic systems. Alternatively, the enzyme models, designed and synthesized by mimicking the active center and coordination environment of metalloenzymes, can be easily acquired and manipulated for further structure and reactivity studies. In this review, we briefly illustrate the active sites of metalloenzymes in biology and focus on the recent achievements in mononuclear iron-oxygen and manganese-oxygen adducts in biomimetic studies.

Du, Junyi; Xia, Chungu; Sun, Wei*

Acta Chim. Sinica **2018**, 76(5), 329-346

Recent Advances in Cobalt Catalyzed Isocyanide Coupling Reactions

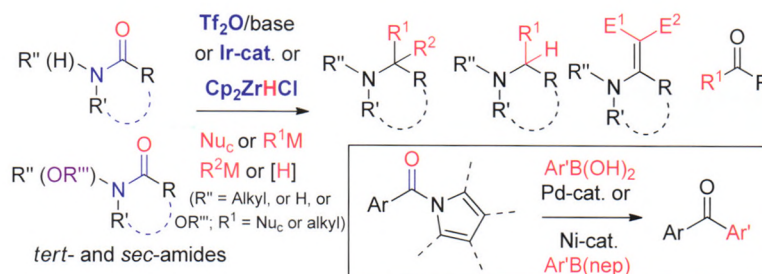


Isocyanide is an important reactive reactant containing stable divalent carbon atoms, which has been widely used in the construction of nitrogen compounds, new drugs and natural products. Cobalt as a cost efficient transition metal has great advantages in the isocyanide coupling reactions. In this review the recent advances in the cobalt-catalyzed isocyanide coupling reactions were summarized.

Gu, Zhengyang; Ji, Shunjun*

Acta Chim. Sinica **2018**, 76(5), 347-356

Direct Transformations of Amides: Tactics and Recent Progress

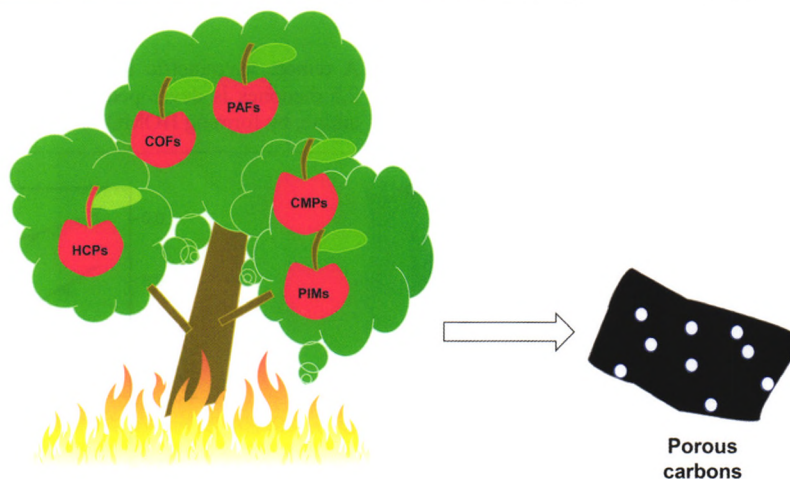


In this review, we highlight the major progresses recorded in recent years on the direct transformation of amides focusing on nucleophilic addition to amide carbonyl group that leads to a C—C bond formation. The materials are organized according to the tactic used.

Huang, Pei-Qiang*

Acta Chim. Sinica **2018**, 76(5), 357-365

One-step Strategy to Synthesize Porous Carbons by Carbonized Porous Organic Materials and Their Applications



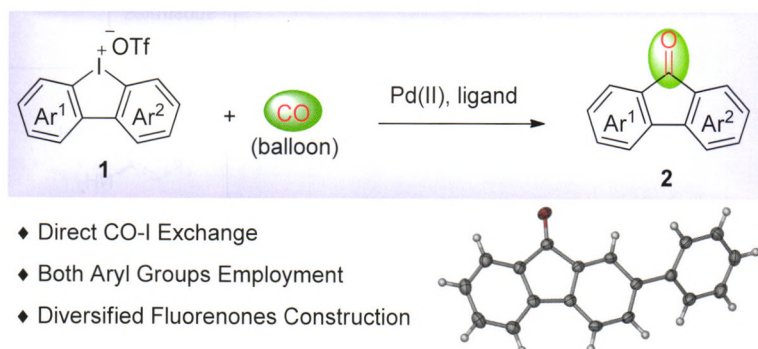
Porous carbons which prepared by carbonized porous organic materials with high carbon content, have high specific surface area, good physical and chemical stability, and excellent mechanical performance, therefore can be widely used in many fields, such as clean energy storage, energy storage and conversion, etc. This review systematically summarize the preparation methods of porous carbons derived from porous organic materials, and a brief comparison of different methods for preparing porous carbon is presented. Then, the review describes in detail about the application of porous carbons in energy storage and conversion. At the last, combination with the research status of porous carbons, the review points out the challenges for porous carbons, and also prospects the application of porous carbons.

Yan, Tingting; Xing, Guolong; Ben, Teng*

Acta Chim. Sinica **2018**, 76(5), 366-376

Communication

Efficient Fluoren-9-ones Construction through CO/I Exchange of Diaryliodonium Salts



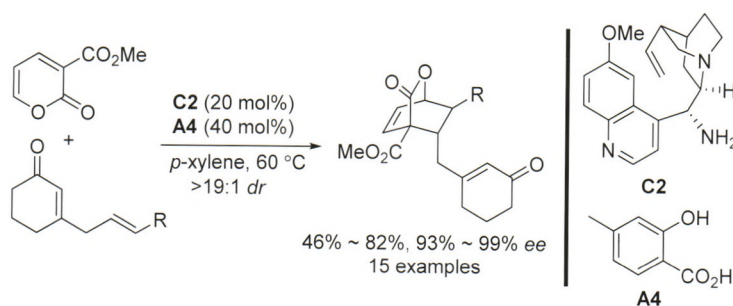
Wang, Ming; Jiang, Xuefeng*

Acta Chim. Sinica **2018**, 76(5), 377-381

An efficient CO-iodine exchange strategy between CO gas and diaryliodonium salts was developed. Both aryl groups of diaryliodonium salt were fully employed in this transformation, and diverse fluoren-9-one derivatives were systematically achieved with good functional-group compatibility in moderate to excellent yields.

Article

Asymmetric Inverse-Electron-Demand Diels-Alder Reaction of 2-Pyrone and 2,5-Dienones via HOMO-Activation

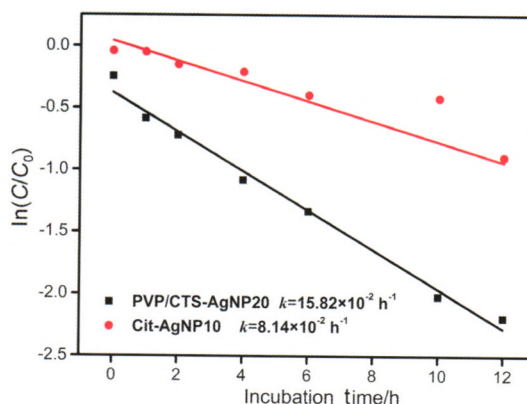


Zhou, Yuanchun; Zhou, Zhi; Du, Wei*; Chen, Yingchun*

Acta Chim. Sinica **2018**, 76(5), 382-386

A remote asymmetric inverse-electron-demand Diels-Alder reaction of 2-pyrone and 2,5-dienones is developed under the catalysis of a cinchona alkaloid derived primary amine, by forming HOMO-raised extended trienamine species.

Catalytic Oxidation of Arsenic in Water by Silver Nanoparticles

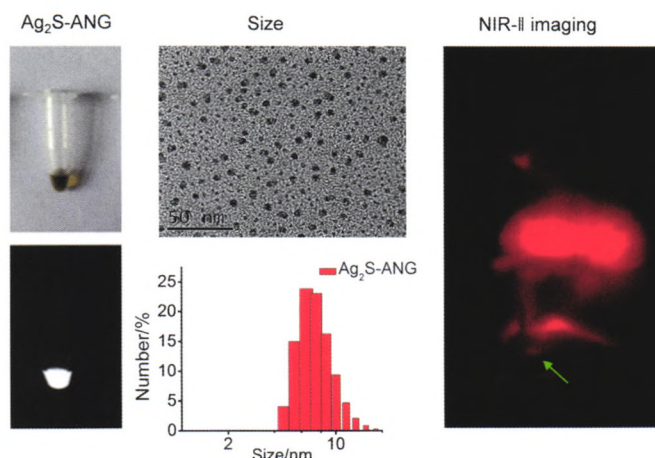


Guo, Xiaoru; Yin, Yongguang; Tan, Zhi-qiang; Liu, Jingfu*; Jiang, Guibin

Acta Chim. Sinica **2018**, 76(5), 387-392

With the development of nanoscience and nanotechnology, nanomaterials have been applied in many areas including environments. Silver nanoparticles (AgNPs) are being widely used in drinking water disinfection due to their excellent bactericidal performance. In this study, AgNPs showed significant effects on the catalytic oxidation of As(III), and this catalytic property was found to be ubiquitous in AgNPs with different coatings. In addition, there were significant differences in the catalytic oxidation rate of As(III) to As(V) by AgNPs with various coatings.

Angiopep-2-conjugated Ag₂S Quantum Dot for NIR-II Imaging of Brain Tumors

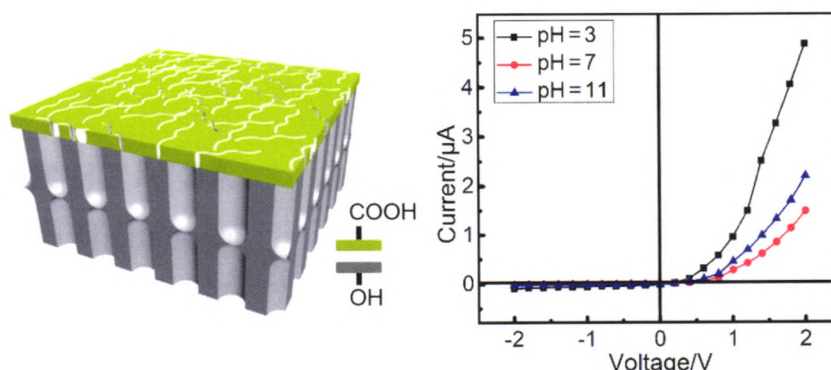


Xu, Yi; Zhao, Yan; Zhang, Yejun; Cui, Zhi-fen; Wang, Lihua; Fan, Chunhai; Gao, Jimin*; Sun, Yanhong*

Acta Chim. Sinica **2018**, 76(5), 393-399

A NIR-II probe based Ag₂S quantum dot was designed for imaging of brain tumor. Ag₂S was conjugated with Angiopep-2 (Ag₂S-ANG), which is a 19-mer peptide with brain targeting. Ag₂S-ANG had no obvious cytotoxicity and had more uptake in U87MG cells than that of Ag₂S. Ag₂S-ANG could distribute and accumulate in tumor site of U87MG tumor-bearing mice.

Facile Fabrication of Heterogeneous Nanochannels with High Ionic Rectification

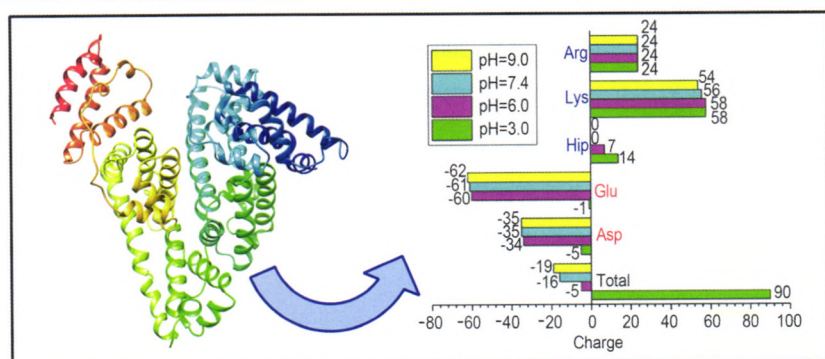


Zhang, Qian; Liu, Qingqing; Zhang, Qian-qian; Fan, Xia; Zhai, Jin*

Acta Chim. Sinica **2018**, 76(5), 400-407

Heterogeneous nanochannels were constructed based on anodic alumina oxide and transparent tape by the method of heat treatment. The heterogeneous nanochannels are composed of organic nanochannels and AAO pores containing carboxyl and hydroxyl groups, respectively. Due to the synergistic effect of the organic nanochannels and AAO nanochannels, heterogeneous nanochannels exhibit high ionic rectification with the same ion rectification direction over a wide pH range.

Spectral and Computational Simulations of HSA and BDE154 Based on Acidity Induction



Xu, Jie; Wei, Yuchen; Wu, Zhiwei; Yi, Zhongsheng*

Acta Chim. Sinica **2018**, 76(5), 408-414

In order to investigate the likely binding modes of the BDE154 onto the substrate pocket of HSA, three methods are performed including molecular docking, fluorescence spectroscopy and molecular dynamic simulation studies by means of protonation or deprotonation at four different pH levels (pH=3.0, 6.0, 7.4, 9.0).

未来科学大奖

FUTURE SCIENCE PRIZE

官网: <http://www.futureprize.org>



- 大中华区首个民间科学大奖
- 大中华区科学界的“诺贝尔”奖
- 设“生命科学”、“物质科学”及“数学与计算机科学”三大奖项
- 单项奖金100万美金

生命科学奖

- 涵盖生命科学相关的基础和应用研究

物质科学奖

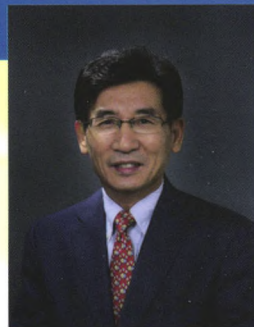
- 涵盖物质科学相关的基础和应用研究

数学与计算机科学奖

- 涵盖数学与计算机科学相关的基础和应用研究



卢煜明
2016年未来科学大奖
生命科学奖获奖者



薛其坤
2016年未来科学大奖
物质科学奖获奖者



施一公
2017年未来科学大奖
生命科学奖获奖者



潘建伟
2017年未来科学大奖
物质科学奖获奖者



许晨阳
2017年未来科学大奖
数学与计算机科学奖获奖者

2017未来科学大奖颁奖典礼

Award Ceremony of the Future Science Prize 2017



生命科学奖

董欣年 杜克大学教授
何川 芝加哥大学教授
刘勇军 赛诺菲集团全球研究部总裁
骆利群 斯坦福大学教授
饶毅 北京大学教授
王晓东 北京生命科学研究所以所长
谢晓亮 哈佛大学教授

物质科学奖

鲍哲南 斯坦福大学教授
丁洪 中国科学院物理所研究员
季向东 上海交通大学教授
毛淑德 清华大学教授
文小刚 麻省理工学院教授
杨培东 加州大学伯克利分校教授
余金权 美国Scripps研究所教授

数学与计算机科学奖

李飞飞 斯坦福大学教授
李凯 普林斯顿大学教授
励建书 上海交通大学教授
舒其望 美国布朗大学教授
田刚 北京大学教授
夏志宏 美国西北大学教授
张懋中 台湾新竹交通大学教授

科学委员会

中国标准连续出版物号: 万方数据

ISSN 0567-7351
CN 31-1320/O6

国内外公开发行

国内邮发代号: 4-209

国外发行代号: M56