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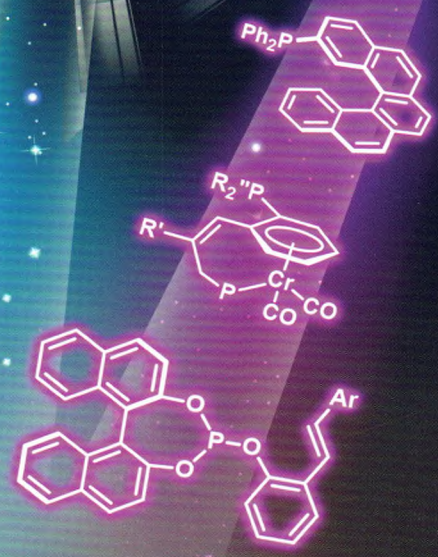
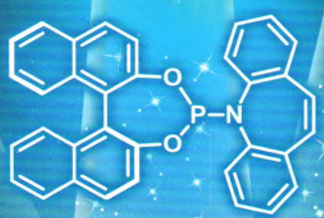
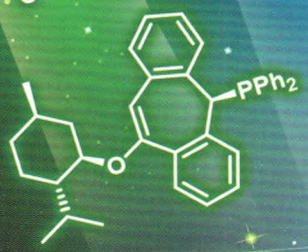
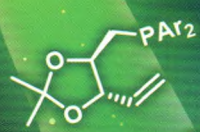
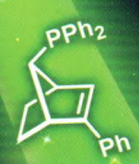


ISSN 0567-7351
CN 31-1320/O6
CODEN HHHPA4
http://sioc-journal.cn

化学学报

ACTA CHIMICA SINICA

2017 第75卷 第7期 Vol. 75 No. 7



Chiral Phosphorus-Olefin

ISSN 0567-7351



中国化学会
中国科学院上海有机化学研究所

主办

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万方数据

化学学报

Acta Chimica Sinica

(Huaxue Xuebao)

第 75 卷 第 7 期 2017 年 7 月 15 日

目 次

综述

手性磷-烯配体在不对称催化领域的研究进展 于月娜, 徐明华*, 化学学报, 2017, 75(7), 655-670

研究通讯

纳米电极上单个银纳米颗粒氧化电流分辨能力的研究 杨哲曜, 马巍, 应伏伦, 龙亿涛*, 化学学报, 2017, 75(7), 671-674

单个体矢量性特征的固体纳米孔道分析研究 林瑶, 应伏伦*, 高瑞, 王慧锋*, 龙亿涛, 化学学报, 2017, 75(7), 675-678

研究论文

水热条件下 Y 型沸石的转晶行为 胡成玉, 闫文付*, 徐如人, 化学学报, 2017, 75(7), 679-685

温和条件下钨/氮掺杂碳纳米笼的苯乙酮选择性催化加氢性能 蔡跃进, 刘晨霞, 卓欧, 吴强*, 杨立军, 陈强, 王喜章*, 胡征, 化学学报, 2017, 75(7), 686-691

锌配体化合物选择性诱导、稳定、荧光检测 G-四联体 王雅芬, 张雄, 刘朝兴, 周翔*, 化学学报, 2017, 75(7), 692-698

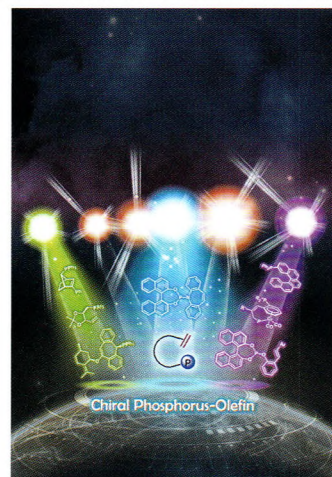
Ni 离子替位掺杂 TiO₂ 增强光热化学循环还原 CO₂ 研究 许辰宇, 林伽毅, 潘富强, 邓博文, 王智化, 周俊虎, 陈云, 马京程, 顾志恩, 张彦威*, 化学学报, 2017, 75(7), 699-707

H₂ 分子在 Mg₃N₂ 表面吸附的第一性原理研究 陈玉红*, 刘婷婷, 张梅玲, 元丽华, 张材荣, 化学学报, 2017, 75(7), 708-714

酚氧基修饰的 AIPS-PVPA 固载手性 Salen Mn(III) 催化剂的合成及催化烯烃不对称环氧化研究 王一帆, 范益梅, 蹇君, 潘雨民, 赵亮, 敬雪平, 周圣家, 谌晓洪*, 杜泉*, 王玲, 吴小菊, 傅相锴, 化学学报, 2017, 75(7), 715-722

* 通信联系人.

On the cover: Since the first report of chiral phosphine-olefins for asymmetric hydrogenation by Grützmacher in 2004, phosphorus-based hybrid olefins have emerged as a conceptually new and particularly interesting class of chiral ligands for asymmetric catalysis. Over the past few years, a diverse range of structurally different phosphorus-olefin ligands have been designed and developed, and many of them have proved to be highly effective for various transition metal-catalyzed enantioselective transformations. This paper highlights the recent progress and remarkable advances in the use of various P-olefins in asymmetric catalysis. [Xu, Ming-Hua *et al.* on page 655-670.]



Review

Chiral Phosphorus-Olefin Ligands for Asymmetric Catalysis

Yu, Yue-Na; Xu, Ming-Hua*

Acta Chim. Sinica 2017, 75(7), 655-670

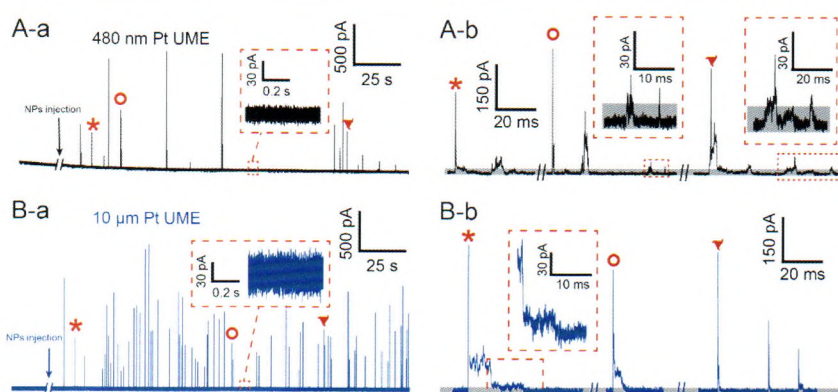


Communication

Study on the Resolution of Single Silver Nanoparticles Electrochemical Behavior at Nanoelectrode

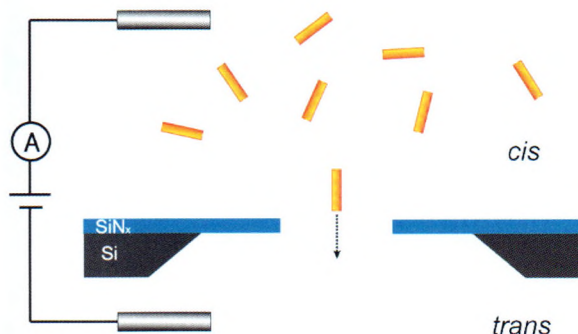
Yang, Zheyao; Ma, Wei; Ying, Yilun; Long, Yitao*

Acta Chim. Sinica 2017, 75(7), 671-674



A 480 nm (diameter) nanoelectrode and a 10 μm (diameter) microelectrode were employed as working electrode in the experiments of single AgNPs collision/oxidation. The data demonstrated that the collision frequency at varying size of electrode are in reasonable agreement with Fick's Law. In such cases, a single current peak was as a result of single collision. Result revealed that more detail information was detected by nanoelectrode with the reducing of the noise. Our findings explored that employing nanoelectrode as working electrode can enhance the current resolution of single entity electrochemistry.

Analysis of Single-entity Anisotropy with a Solid-state Nanopore



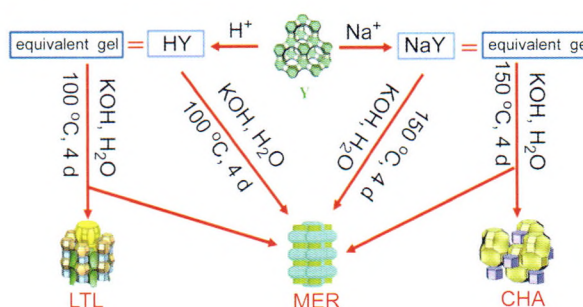
To analyze the single-entity anisotropy effects on nanopore translocation, here, we employ gold nanorods (GNRs) as a model for single entities with anisotropy, investigating its translocation behavior through a silicon nitride solid-state nanopore. Due to the electrochemical confined space of the solid-state nanopore, two types of characteristic current blockades were observed when single GNRs translocate through the pore. These two types of blockades are related to the translocation orientation of GNRs due to its anisotropy. Further, we incorporate a simple model based on conductance blockade to verify our observation.

Lin, Yao; Ying, Yilun*; Gao, Rui; Wang, Huifeng*; Long, Yitao

Acta Chim. Sinica 2017, 75(7), 675-678

Article

Phase Transition Behavior of Zeolite Y under Hydrothermal Conditions

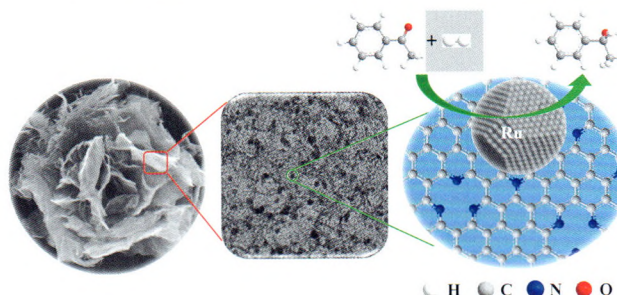


With phase transition of zeolite Y (HY and NaY) in the KOH solution under hydrothermal treatment, highly crystalline zeolite MER can be obtained within 2 d. Phase transition of HY can be conducted at either 100 or 150 °C, whereas that of NaY can only be conducted at 150 °C. KOH/SiO₂ and H₂O/SiO₂ have significant influence on the phase transition behavior of zeolite Y.

Hu, Chengyu; Yan, Wenfu*; Xu, Ruren

Acta Chim. Sinica 2017, 75(7), 679-685

Ruthenium Nanoparticles Supported on Hierarchical Nitrogen-Doped Carbon Nanocages for Selective Hydrogenation of Acetophenone in Mild Conditions

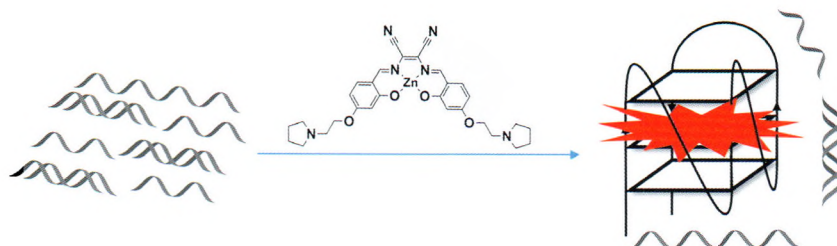


Ruthenium nanoparticles (≈ 3 nm) supported on hierarchical nitrogen-doped carbon nanocages (hNCNC) exhibit excellent catalytic performance for hydrogenation of acetophenone to 1-phenylethanol in mild conditions, which is attributed to the highly dispersed Ru nanoparticles owing to the high specific surface area and nitrogen dopants of hNCNC, the tuned electron structure of Ru by nitrogen incorporation, and the facile mass transportation throughout the porous hNCNC.

Cai, Yuejin; Liu, Chenxia; Zhuo, Ou; Wu, Qiang*; Yang, Lijun; Chen, Qiang; Wang, Xizhang*; Hu, Zheng

Acta Chim. Sinica 2017, 75(7), 686-691

Induction Stabilization and Fluorescence-based Switch-on Detection of G-Quadruplex by Zinc(II)-salen Complex

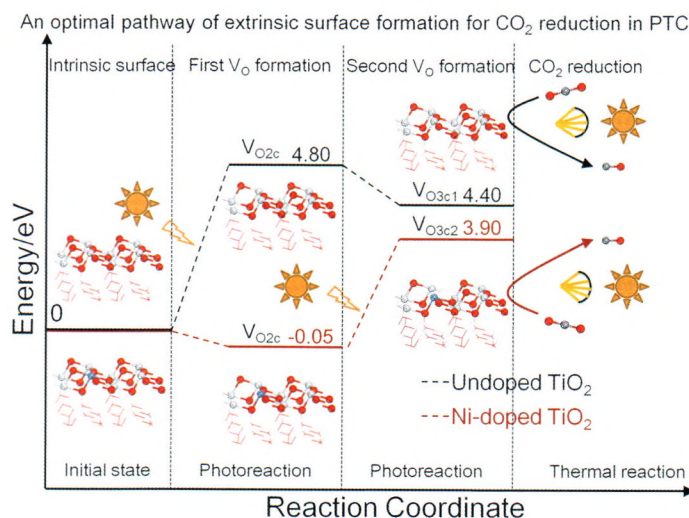


Wang, Yafen; Zhang, Xiong; Liu, Chaoxing; Zhou, Xiang*

Acta Chim. Sinica **2017**, 75(7), 692-698

Zinc(II)-salen Complex is excellent G-quadruplex DNA stabilizer, which can both selectively induce and fluorescence-based switch-on detect G-quadruplex DNA.

Photo-thermochemical Cycle for CO₂ Reduction based on Effective Ni ion Substitute-doped TiO₂

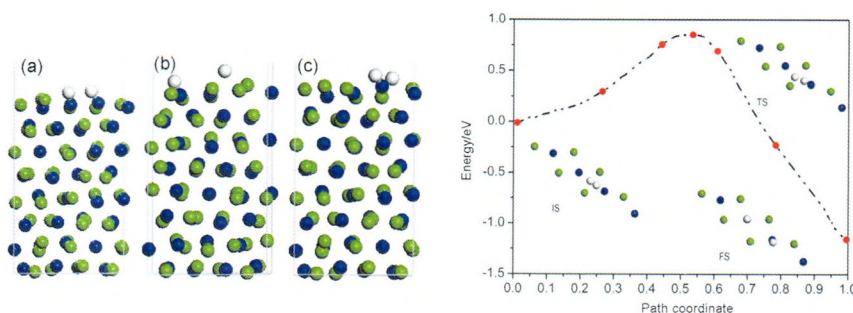


Xu, Chenyu; Lin, Jiayi; Pan, Fuqiang; Deng, Bowen; Wang, Zhihua; Zhou, Junhu; Chen, Yun; Ma, Jingcheng; Gu, Zhien; Zhang, Yanwei*

Acta Chim. Sinica **2017**, 75(7), 699-707

Photo-thermochemical cycle (PTC) is an innovation to dissociate carbon dioxide (CO₂) utilizing both solar luminous energy and thermal energy, and the photo-induced oxygen vacancy is regarded as an important reaction core in the extrinsic surface formation step of PTC. An optimal pathway of extrinsic surface formation has been proposed by a DFT calculation. Ni substituted doping could reduce the V_O formation energy in TiO₂, and CO₂ reduction has been enhanced based on Ni doped TiO₂ in PTC.

First Principles Study on the Adsorption of H₂ Molecules on Mg₃N₂ Surface



Chen, Yuhong*; Liu, Tingting; Zhang, Meiling; Yuan, Lihua; Zhang, Cairong

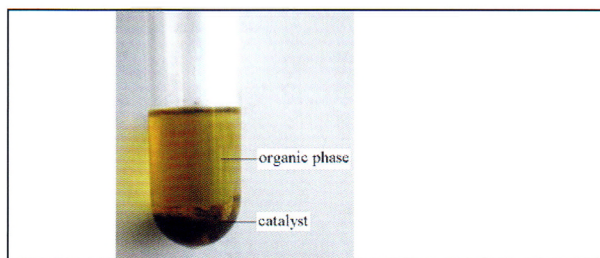
Acta Chim. Sinica **2017**, 75(7), 708-714

The study found that the first mode is double NH formed by two H adsorbed on the two N. The second mode is that H₂ completely dissociated to form NH + MgH. The third mode is that H₂ dissociated partly and then two H are adsorbed onto the same N forming one NH₂. There are no competition among the three adsorption models and the lowest reaction energy barrier of forming double NH, which is the easiest pathway.

Synthesis of Chiral Salen Mn(III) Complex Immobilized on Phenoxy-modified AIPS-PVPA as Catalysts for Epoxidation of Olefins

Wang, Yifan; Fan, Yimei; Jian, Jun; Pan, Yuming; Zhao, Liang; Jing, Xueping; Zhou, Shenjia; Chen, Xiaohong*; Du, Quan*; Wang, Ling; Wu, Xiaoju; Fu, Xiangkai

Acta Chim. Sinica **2017**, 75(7), 715-722



Chiral salen Mn(III) complex immobilized on phenoxy-modified AIPS-PVPA as catalysts display superior performance in the epoxidations of olefins.



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