

QK2103219

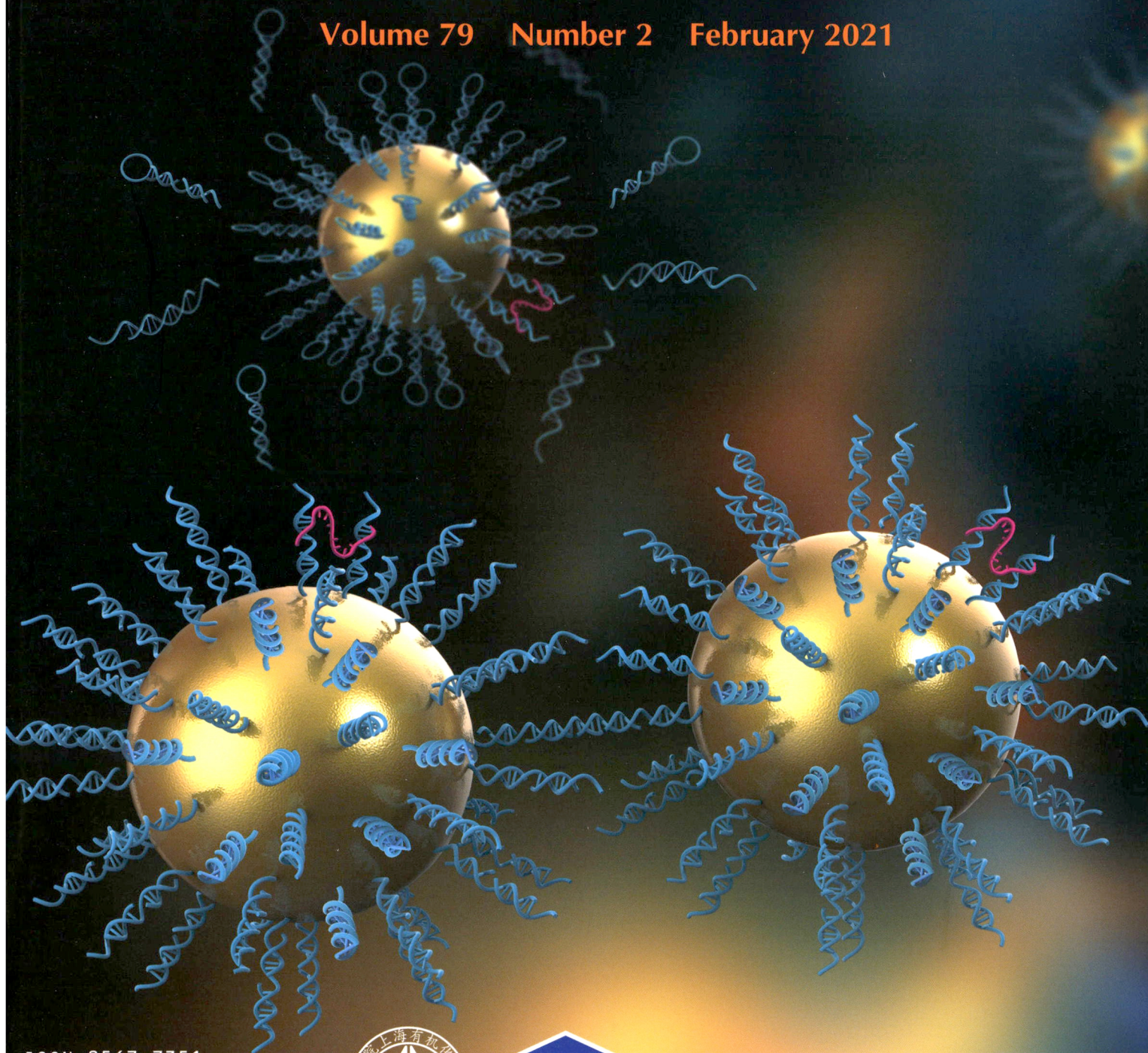


ISSN 0567-7351
CN 31-1320/O6
CODEN HHHPA4
<http://sioc-journal.cn>

化学学报

ACTA CHIMICA SINICA

Volume 79 Number 2 February 2021



ISSN 0567-7351

02>



9 770567 735219



中国化学会
中国科学院上海有机化学研究所

主办

化学学报

Acta Chimica Sinica

(Huaxue Xuebao)

第 79 卷 第 2 期 2021 年 2 月 15 日

目 次

研究评论

桥连对嵌段共聚物自组装的调控 李卫华*, 化学学报, 2021, 79(2), 133-138

研究展望

金属有机框架(MOFs)材料在锂离子电池及锂金属电池电解液中的应用 常智, 乔羽, 杨慧军, 邓瀚, 朱星宇, 何平, 周豪慎*, 化学学报, 2021, 79(2), 139-145

综述

常温常压电催化合成氨的研究进展 詹溯, 章福祥*, 化学学报, 2021, 79(2), 146-157
水系锌离子电池研究进展和挑战 张璐, 王文凤, 张洪明, 韩树民*, 王利民*, 化学学报, 2021, 79(2), 158-175

研究通讯

钯催化吡咯环内共轭双键的 Heck 反应 周波, 梁仁校, 曹中艳, 周平海, 贾义霞*, 化学学报, 2021, 79(2), 176-179

研究论文

基于超分子晶体制备超细铂纳米颗粒用于催化加氢硝基苯 张晓萌, 李希雅, 熊晚枫, 李红芳*, 曹荣, 化学学报, 2021, 79(2), 180-185
一种新型酰胺功能化的共价有机框架用于选择性染料吸附 方婧, 赵文娟, 张明浩, 方千荣*, 化学学报, 2021, 79(2), 186-191
DNA 步行器调控的纳米粒子超晶格 郭宜君, 魏冰, 周翔, 姚东宝*, 梁好均*, 化学学报, 2021, 79(2), 192-199
 α -MnO₂ 纳米棒/多孔碳正极材料的制备及水系锌离子电池性能研究 李燕丽, 于丹丹, 林森, 孙东飞*, 雷自强, 化学学报, 2021, 79(2), 200-207
生物质液流催化燃料电池运行环境优化机制分析 江珊, 李欢*, 化学学报, 2021, 79(2), 208-215
双金属氢氧化物催化析氧反应的协同机制研究 王思, 马嘉苓, 陈利芳, 张欣*, 化学学报, 2021, 79(2), 216-222

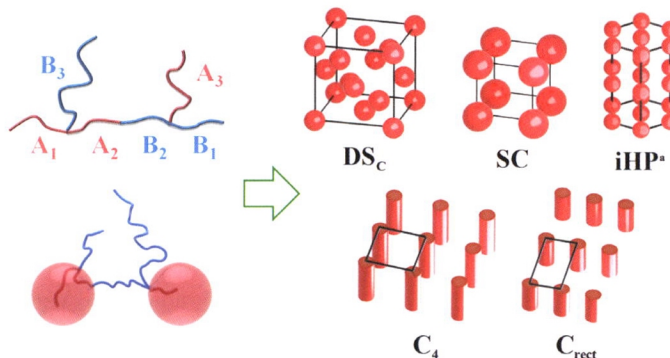
* 通信联系人.

On the cover: DNA walker is a programmable and sophisticated DNA nanomachine with dynamic behaviors. By integrating the bipedal DNA walker with the DNA-functionalized gold nanoparticle assembly system, a time-dependent orderly assembly strategy of gold nanoparticles has been developed. This strategy may have potential in the fabrication of functional superlattice nanomaterials at a constant temperature. [Haojun Liang *et al.* on page 192-199.]



Account

“Bridge” Make Differences to the Self-Assembly of Block Copolymers



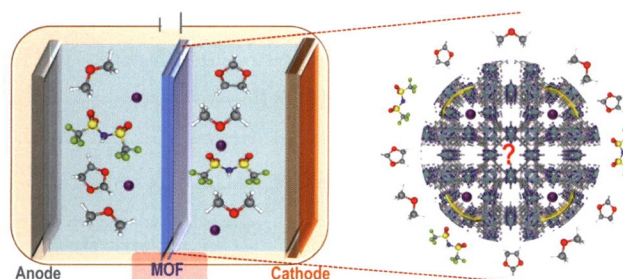
Weihua Li*

Acta Chim. Sinica **2021**, 79(2), 133-138

Synergistic effect of stretched bridging block and released packing frustration stabilizes a number of nonclassical low-coordinated spherical phases.

Perspective

Applications of Metal-organic Frameworks (MOFs) Materials in Lithium-ion Battery/Lithium-metal Battery Electrolytes



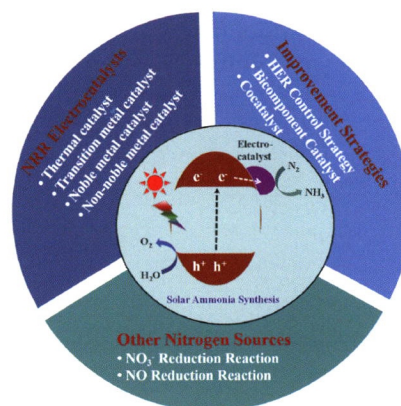
Zhi Chang, Yu Qiao, Huijun Yang, Han Deng, Xingyu Zhu, Ping He, Haoshen Zhou*

Acta Chim. Sinica **2021**, 79(2), 139-145

Benefit from their metal sites and nano/subnano channels, metal-organic frameworks (MOFs) were employed in lithium-ion batteries/lithium-metal batteries to regulate the configurations of various electrolytes and finally improve the electrochemical performances of battery systems.

Review

Recent Progress on Electrocatalytic Synthesis of Ammonia Under Ambient Conditions

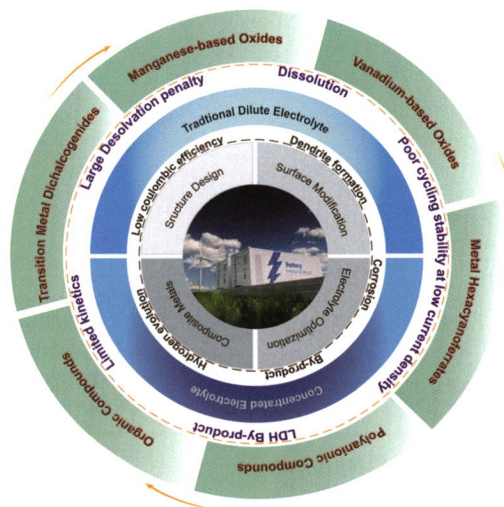


The research progress of electrocatalytic N_2 reduction reaction (NRR) from the perspective of solar energy conversion is introduced in this review, including different NRR electrocatalyst, performance improvement strategies and other nitrogen sources for ammonia synthesis.

Su Zhan, Fuxiang Zhang*

Acta Chim. Sinica **2021**, 79(2), 146-157

Research Progress and Challenge of Aqueous Zinc Ion Battery



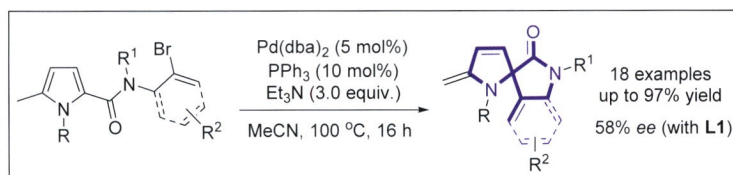
Aqueous zinc ion batteries (AZIBs) as an emerging battery energy storage technology show good application value and prospect in large-scale energy storage. The currently important progress in cathode and anode materials and electrolyte used in AZIBs is presented, and the scientific challenges and corresponding strategies are summarized in this review.

Lu Zhang, Wenfeng Wang, Hongming Zhang, Shumin Han*, Limin Wang*

Acta Chim. Sinica **2021**, 79(2), 158-175

Communication

Palladium-Catalyzed Heck Reaction of Endocyclic Conjugated C=C Bonds of Pyrroles



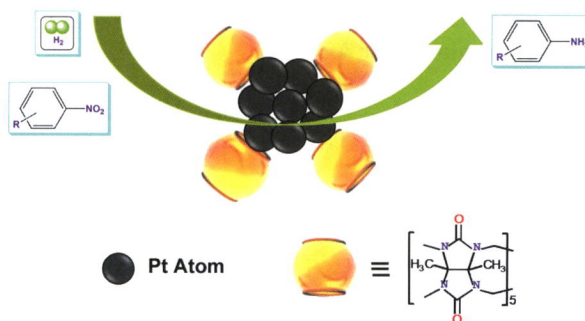
Bo Zhou, Renxiao Liang, Zhongyan Cao, Pinghai Zhou, Yixia Jia*

Acta Chim. Sinica **2021**, 79(2), 176-179

A palladium-catalyzed intramolecular Heck reaction of the endocyclic conjugated C=C bonds of pyrroles is developed, which accessed a range of 3,2'-spiropyrrolidine-2-oxindole derivatives in good to excellent yields. A preliminary asymmetric reaction leads to product **2b** in 58% *ee* under the help of (*S*)-H₈-BINOL-based phosphoramidite ligand **L1**.

Article

Ultrafine Platinum Nanoparticles Derived from Supramolecular Crystal for Catalytic Hydrogenation of Nitroarenes

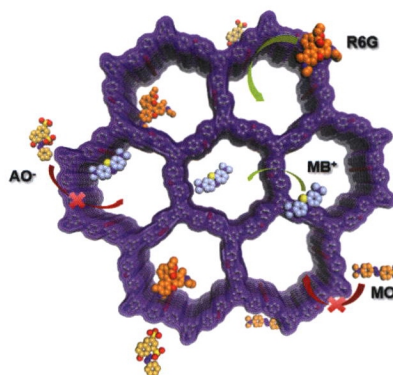


Xiaomeng Zhang, Xiya Li, Wanfeng Xiong, Hongfang Li*, Rong Cao

Acta Chim. Sinica **2021**, 79(2), 180-185

Ultrafine Pt nanoparticles (NPs) have been successfully synthesized through *in-situ* reduction of crystalline supramolecular assemblies constructed by Me₁₀CB[5] and [PtCl₆]²⁻. The Pt NPs exhibit high activity, stability and chemoselectivity towards catalytic hydrogenation of nitroarenes.

A Novel Amide-functionalized Covalent Organic Framework for Selective Dye Adsorption

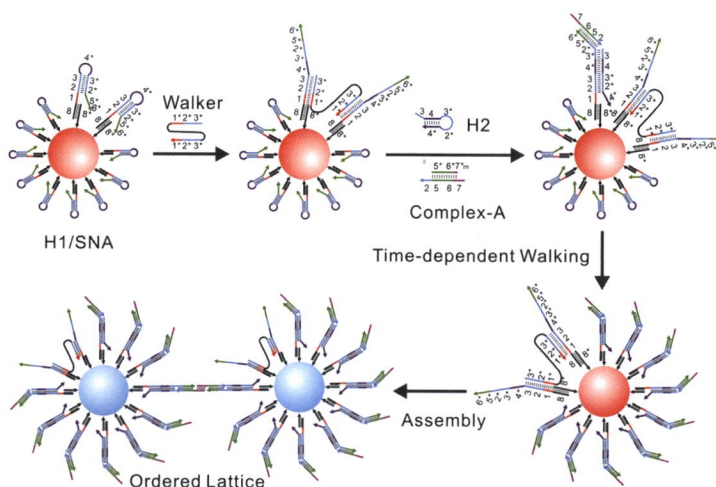


Jing Fang, Wenjuan Zhao, Minghao Zhang, Qianrong Fang*

Acta Chim. Sinica **2021**, 79(2), 186-191

A novel amide-functionalized two-dimensional covalent organic framework (2D COF, JUC-578) with high crystallinity, uniform morphology and 1D mesoporous channels can selectively adsorb cationic dyes, and these results were attributed to the electrostatic interaction between the electron donor nitrogen in the skeleton and the electron-deficient dyes as well as other weak interactions (hydrogen bonding, coupling, *etc.*).

DNA Walker-Programmed Nanoparticle Superlattice

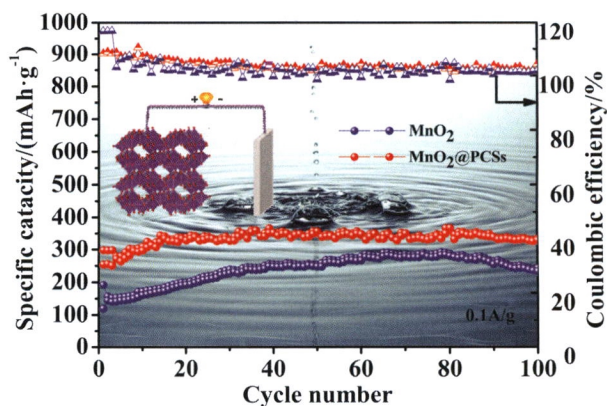


Yijun Guo, Bing Wei, Xiang Zhou, Dongbao Yao*, Haojun Liang*

Acta Chim. Sinica **2021**, 79(2), 192-199

The time-dependent bipedal DNA walker can continuously walk on the spherical nucleic acid (SNA) surface under programming of the catalytic hairpin assembly reaction, accompanied by the generation of active sticky ends on SNA surface to induce the assembly of SNAs to form ordered superlattices synchronously.

Preparation of α -MnO₂ Nanorods/Porous Carbon Cathode for Aqueous Zinc-ion Batteries

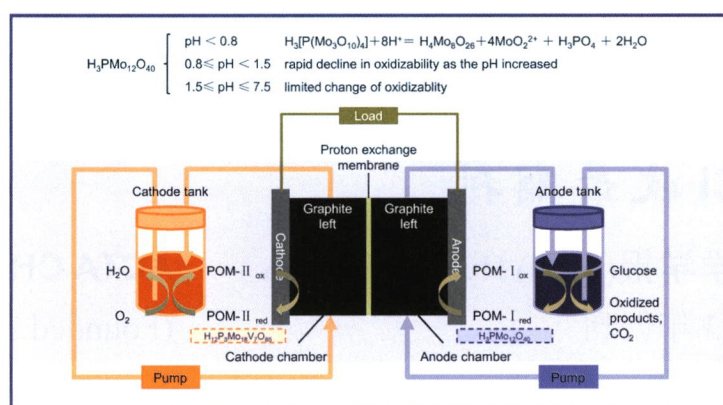


Yanli Li, Dandan Yu, Sen Lin, Dongfei Sun*, Ziqiang Lei

Acta Chim. Sinica **2021**, 79(2), 200-207

α -MnO₂ nanorods/porous carbon nanosheets composite were prepared by a simple hydrothermal/dispersion strategy. The composite with a three-dimensional network structure and high conductivity exhibits high capacity, excellent rate performance and long cycle-life in aqueous zinc-ion batteries.

Optimization Mechanism for Operational Conditions of Biomass Liquid-Catalyst Fuel Cell

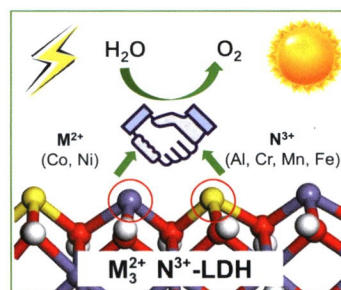


Shan Jiang, Huan Li*

Acta Chim. Sinica **2021**, 79(2), 208-215

When the pH of anolyte was less than 1.5, a moderate anolyte acidification improved the oxidizability of heteropoly acid greatly and accordingly enhanced the power density of liquid-catalyst fuel cell significantly.

Role of Synergistic Effect in Oxygen Evolution Reaction over Layered Double Hydroxide



Si Wang, Jialing Ma, Lifang Chen, Xin Zhang*

Acta Chim. Sinica **2021**, 79(2), 216-222

“《化学学报》2019 年度最有影响力论文奖”揭晓

为推动促进国内外化学期刊发展、加强化学工作者交流,根据《化学学报》编委会决议,设立“《化学学报》XX 年度最有影响力论文奖”。该奖对获奖人的国籍、居住地、单位、年龄等没有任何限制,由《化学学报》编委会根据文章年度 SCI 引用情况评出(参考影响因子计算规则,兼顾当年发表当年引用情况,按第 $n-2$ 年至第 n 年发表的文章在第 n 年引用情况排序),奖励通信作者荣誉证书、文章第一作者荣誉证书和奖金 1000 元。奖励 10 篇左右。已获奖的论文次年不再重复奖励。

“《化学学报》2019 年度最有影响力论文奖”获奖列表:

23 次:

黄培强

酰胺直接转化:策略与近期进展

化学学报 2018, 76 (5), 357-365.

DOI: 10.6023/A18020054

16 次:

苏莹莹, 彭天欢, 邢菲菲, 李迪, 樊春海

纳米等离子体生物传感及成像

化学学报 2017, 75 (11), 1036-1046.

DOI: 10.6023/A17060289

10 次:

陈栋, 吉梅山, 姚英明, 朱晨

通过远端碳氮双键迁移实现非活化烯烃
的三氟甲磺基化反应

化学学报 2018, 76 (12), 951-955.

DOI: 10.6023/A18080313

张依, 陈湧, 李晶晶, 梁璐, 刘育

白光发射超分子水凝胶的构筑和发光性能研究

化学学报 2018, 76 (8), 622-626.

DOI: 10.6023/A18040171

赵婧, 龚俊伟, 李一举, 程魁, 叶克, 朱

凯, 闫俊, 曹殿学, 王贵领

自掺杂氮多孔交联碳纳米片在超级电容

器中的应用

化学学报 2018, 76 (2), 107-112.

DOI: 10.6023/A17090422

9 次:

李猛, 林伟彬, 房蕾, 陈传峰

手性有机小分子圆偏振发光的研究进展

化学学报 2017, 75 (12), 1150-1163.

DOI: 10.6023/A17090440

裴朋昆, 张凡, 易红, 雷爱文

可见光促进的苜位 Csp³-H 键活化官能团
化反应

化学学报 2017, 75 (1), 15-21.

DOI: 10.6023/A16080417

张贺, 李国良, 张可刚, 廖春阳

金属有机骨架材料在吸附分离研究中的
应用进展

化学学报 2017, 75 (9), 841-859.

DOI: 10.6023/A17040168

郝永佳, 余金生, 周英, 王欣, 周剑

C—F…H—X 相互作用在有机反应中的
影响

化学学报 2018, 76 (12), 925-939.

DOI: 10.6023/A18080360