



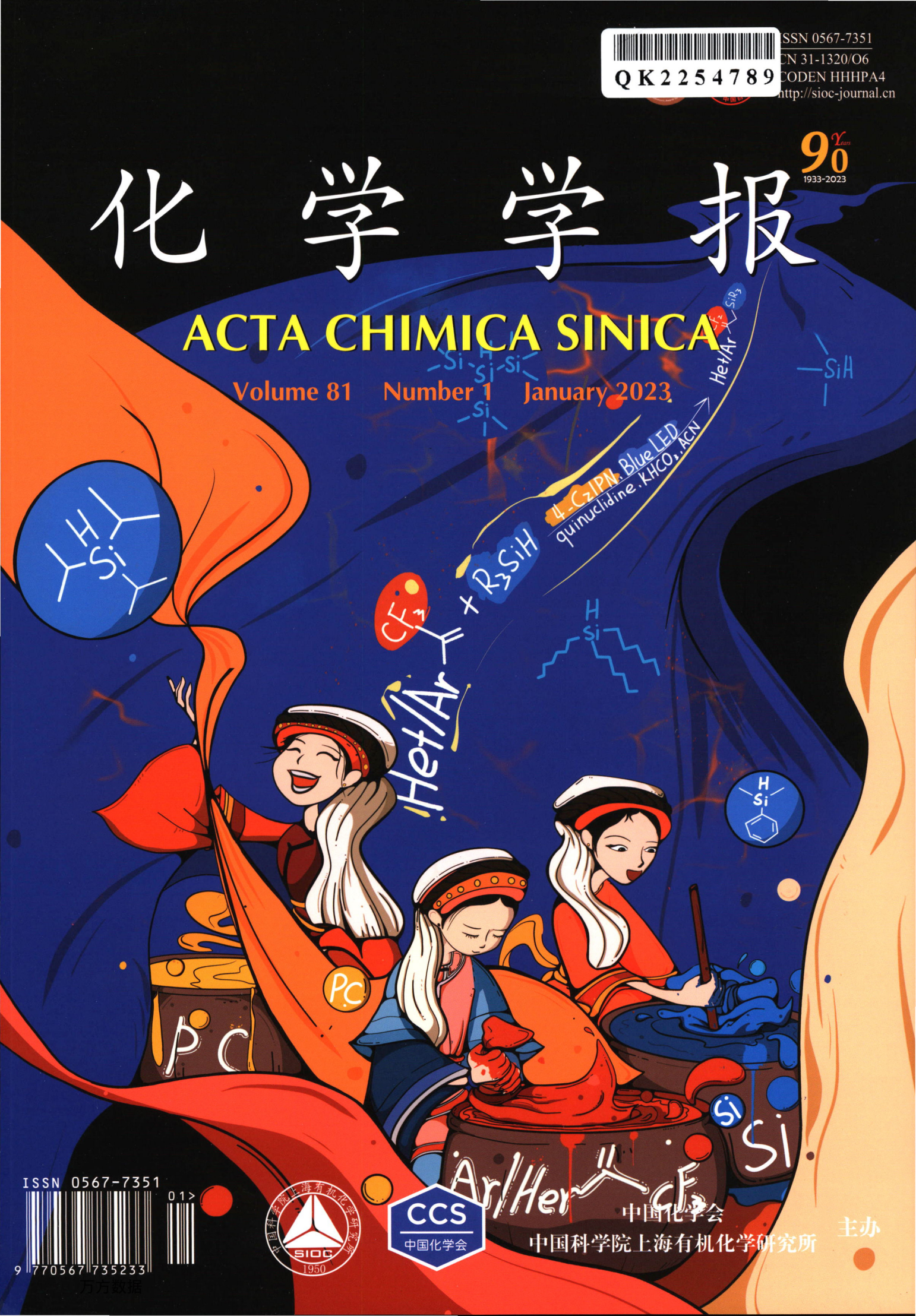
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# 化学学报

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主办

# 化学学报

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## 目次

### 研究通讯

可见光催化的硅烷二氟烯丙基化反应 ..... 杨春晖, 陈景超\*, 李新汉, 孟丽, 王凯民, 孙蔚青, 樊保敏\*, 化学学报, 2023, 81(1), 1-5

### 研究论文

基于 P 掺杂 TiO<sub>2</sub>/C 纳米管负极的高性能锂离子电容器 ..... 张国强, 霍京浩\*, 王鑫, 郭守武, 化学学报, 2023, 81(1), 6-13

Fe@Si/S-34 催化剂的制备及其合成气制烯烃性能 ..... 陈治平\*, 孟永乐, 卢静, 周文武\*, 杨志远, 周安宁, 化学学报, 2023, 81(1), 14-19

手性单 Schiff 碱大环对青霉胺对映体识别研究 ..... 田小茂, 林悦群, 朱茵, 黄超\*, 朱必学\*, 化学学报, 2023, 81(1), 20-28

### 综述

水系锌离子电池负极集流体关键问题及设计策略 ..... 姬慧敏, 谢春霖, 张旗, 李熠鑫, 李欢欢, 王海燕\*, 化学学报, 2023, 81(1), 29-41

捕捉环加成反应中的有机亚铜中间体构筑氮杂环化合物研究进展 ..... 邱孔茜, 李杰, 马浩文, 周伟\*, 蔡倩\*, 化学学报, 2023, 81(1), 42-63

硫酯参与的有机催化不对称反应研究进展 ..... 王晓晨, 季泽尧, 刘健, 王炳福, 金辉\*, 张立新\*, 化学学报, 2023, 81(1), 64-83

三核过渡金属配合物在催化反应中的研究进展 ..... 马雪璐\*, 李蒙, 雷鸣\*, 化学学报, 2023, 81(1), 84-99

羟基自由基辅助沸石分子筛合成的研究进展 ..... 张红丹, 兰欣雨, 程鹏\*, 化学学报, 2023, 81(1), 100-110

\* 通信联系人.

# ACTA CHIMICA SINICA

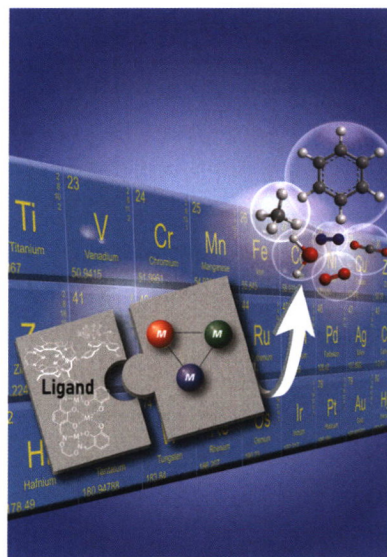
Vol. 81, No. 1 January 15, 2023

## Contents

**On the cover:** Three Bai-girls are painting tie-dyes. The using of red, yellow, and blue colors on the fabric presented the difluoroallylation reaction formula. [Fan, Baomin *et al.* on page 1-5.]



**On the inside front cover:** The geometric and electronic structures, characteristics of the coordination environment and catalytic reactivities of the representative trinuclear transition metal complexes in recent years are summarized, and the polymetallic synergy in the catalytic mechanisms of specific chemical bonds activation is discussed in this review. [Ma, Xuelu *et al.* on page 84-99.]

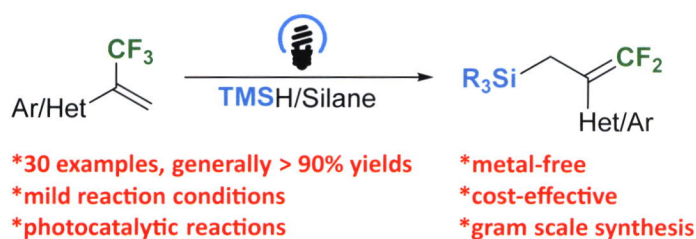


### Communication

#### Difluoroallylation of Silanes under Photoirradiation

Yang, Chunhui; Chen, Jingchao\*; Li, Xinhuan; Meng, Li; Wang, Kaimin; Sun, Weiqing; Fan, Baomin\*

*Acta Chim. Sinica* **2023**, *81*(1), 1-5

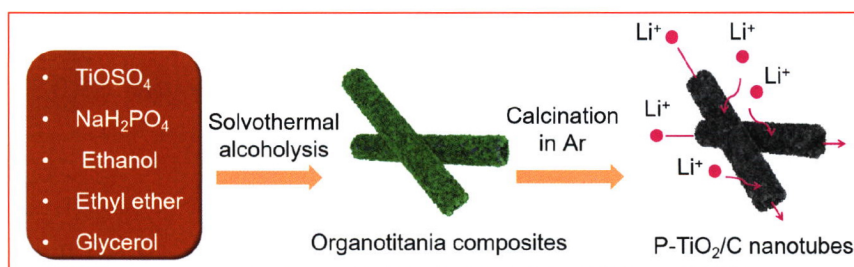


## Article

P-doped TiO<sub>2</sub>/C Nanotubes as Anodes for High-performance Li-ion Capacitors

Zhang, Guoqiang; Huo, Jinghao\*; Wang, Xin; Guo, Shouwu

*Acta Chim. Sinica* 2023, 81(1), 6-13

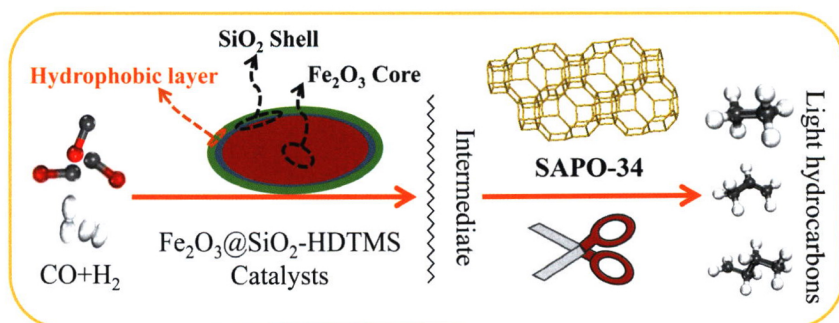


P-TiO<sub>2</sub>/C nanotubes are prepared by a simple solvothermal method with superior lithium diffusion kinetics.

## Preparation of Fe@Si/S-34 Catalysts and Its Catalytic Performance for Syngas to Olefins

Chen, Zhiping\*; Meng, Yongle; Lu, Jing; Zhou, Wenwu\*; Yang, Zhiyuan; Zhou, Anning

*Acta Chim. Sinica* 2023, 81(1), 14-19

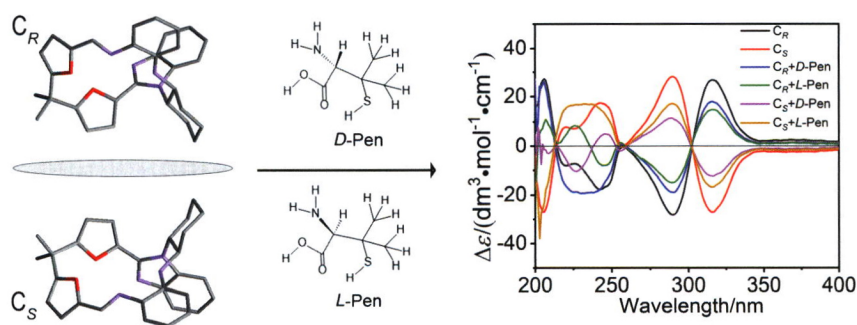


The inhibition of WGS (water-gas shift) reaction by hydrophobic Fe-based Fischer-Tropsch catalyst and the promotion of C<sub>5+</sub> hydrocarbon cracking in Fischer-Tropsch products by SAPO-34 molecular sieve were coupled. The new catalyst can not only reduce the selectivity of CO<sub>2</sub> in Fischer-Tropsch synthesis products, but also improve the selectivity of C<sub>2</sub>~C<sub>4</sub> olefins. Under the conditions of  $p=2$  MPa, GHSV (gas hourly space velocity)=2400 h<sup>-1</sup>,  $n(\text{H}_2)/n(\text{CO})=2$ ,  $T=320$  °C, the conversion of CO was 80.0%, the selectivity of CO<sub>2</sub> in the product was only 8.9%, and the selectivity of C<sub>2</sub>~C<sub>4</sub> olefins was 31.1%. This method provides a new strategy for the direct synthesis of light olefins by Fe-based Fischer-Tropsch synthesis catalyst.

## Enantiomers Identification of Penicillamine by Chiral Mono-Schiff Base Macrocycles

Tian, Xiaomao; Lin, Yuequn; Zhu, Han; Huang, Chao\*; Zhu, Bixue\*

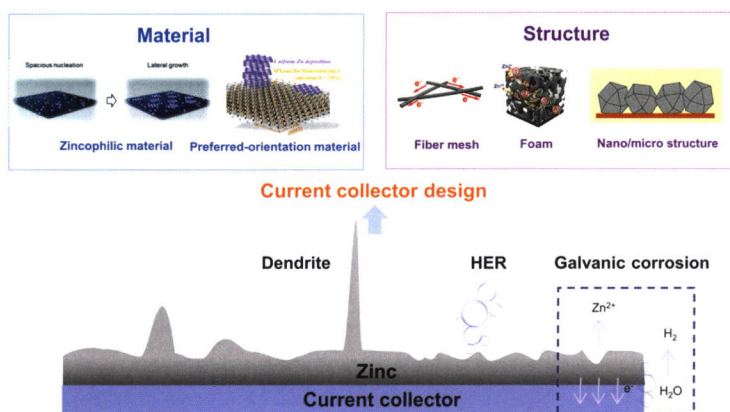
*Acta Chim. Sinica* 2023, 81(1), 20-28



Two enantiomers of the mono-Schiff base macrocycle containing chiral NH moiety in the cyclic structure (C<sub>R</sub> and C<sub>S</sub>) were synthesized. The binding affinity and enantioselectivity of the cyclic enantiomers toward small molecules penicillamine (*D*-Pen and *L*-Pen) were investigated. Further, investigation of ultraviolet visible (UV-Vis), hydrogen nuclear magnetic resonance (<sup>1</sup>H NMR) and circular dichroism (CD) spectroscopic titration indicate that the penicillamine with the same chirality as the host macrocycle binds stronger with the host than its enantiomer with the host.

## Review

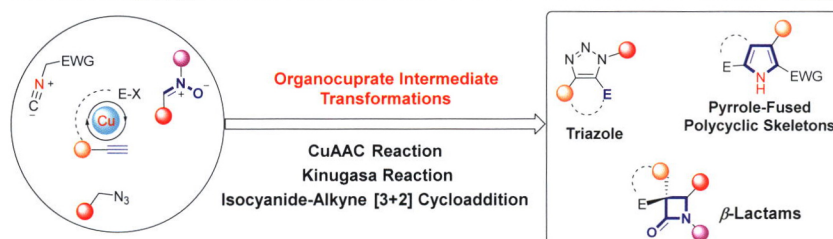
## Anode Current Collector for Aqueous Zinc-ion Batteries: Issues and Design Strategies



Ji, Huimin; Xie, Chunlin; Zhang, Qi; Li, Yixin; Li, Huanhuan; Wang, Haiyan\*

*Acta Chim. Sinica* **2023**, *81*(1), 29-41

## Recent Advances in the Construction of Nitrogen-Containing Heterocycles via Trapping Organocupper(I) Intermediates

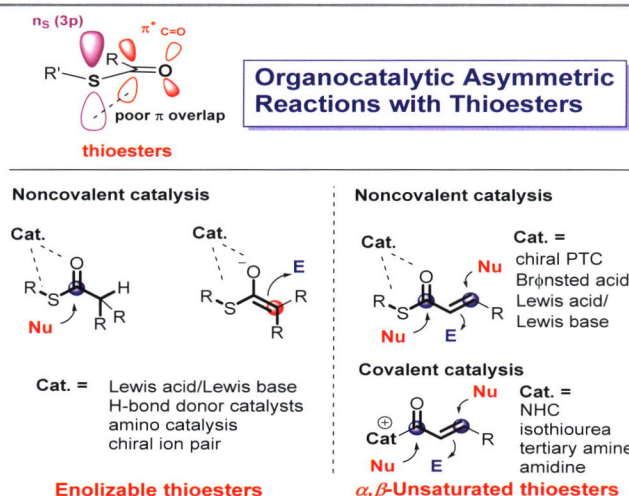


Qiu, Kongxi; Li, Jie; Ma, Haowen; Zhou, Wei\*; Cai, Qian\*

*Acta Chim. Sinica* **2023**, *81*(1), 42-63

In this review, the advances in the construction of nitrogen-containing heterocycles via trapping organocupper(I) intermediates are summarized from three types of copper(I)-mediated cycloaddition reactions, which including azides-alkynes [3+2] cycloaddition, isocyanides-alkynes [3+2] cycloaddition, and nitrones-alkynes cycloaddition (Kinugasa reaction).

## Advances in Organocatalytic Asymmetric Reactions Involving Thioesters

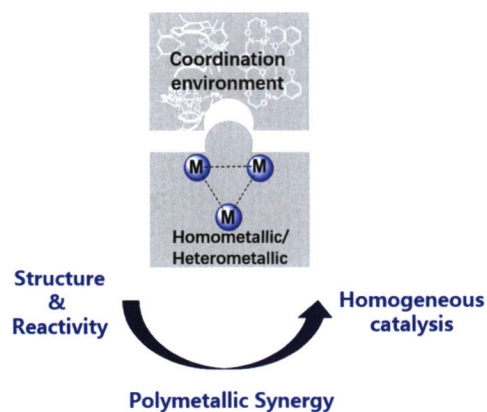


Wang, Xiaochen; Ji, Zeyao; Liu, Jian; Wang, Bingfu; Jin, Hui\*; Zhang, Lixin\*

*Acta Chim. Sinica* **2023**, *81*(1), 64-83

The advances in organocatalytic asymmetric reactions involving thioesters are summarized in this review. According to the types of thioester substrates, these advances are classified to two types. One type is the organocatalytic asymmetric reactions with enolizable thioesters such as trifluoroethyl thioesters, malonic acid half-thioesters (MAHTs), monothiomalonates (MTMs) and dithiomalonates (DTMs). For these reactions, noncovalent interactions between catalysts and thioesters, including hydrogen bonding and ion pair interaction, have been used to promote the reaction and to achieve the high enantioselectivity. Another type is the catalytic asymmetric reactions with  $\alpha,\beta$ -unsaturated thioesters. For the reaction of this type, various chiral organocatalysts, including chiral amines, ureas, NHC (*N*-heterocyclic carbene), isothiourea, amidine and others, not only activate the thioester substrates, but also control the enantioselectivity well through covalent and non-covalent bonds. Meanwhile, the mechanism of representative transformations will be briefly introduced and at last, the perspective in this area will be given.

### Trinuclear Transition Metal Complexes in Catalytic Reactions

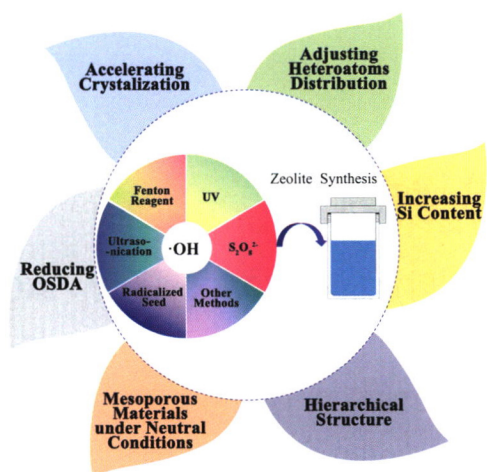


Ma, Xuelu\*; Li, Meng; Lei, Ming\*

*Acta Chim. Sinica* **2023**, *81*(1), 84-99

The geometric and electronic structures, characteristics of the coordination environment and catalytic reactivities of the representative trinuclear transition metal complexes in recent years are summarized, and the polymetallic synergy in the catalytic mechanisms of specific chemical bonds activation is discussed in this review.

### Advances in Hydroxyl Free Radical Assisted Synthesis of Zeolite



Zhang, Hongdan; Lan, Xinyu; Cheng, Peng\*

*Acta Chim. Sinica* **2023**, *81*(1), 100-110

## “《化学学报》2021 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。

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电氧化促进的钨催化的芳烃 C(sp<sup>3</sup>)—H 键氯代反应  
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化学学报 2020, 78 (3), 217-231  
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