

有机化学

Chinese Journal of Organic Chemistry

ISSN 0253-2786



Q K 2 2 5 4 3 4 4

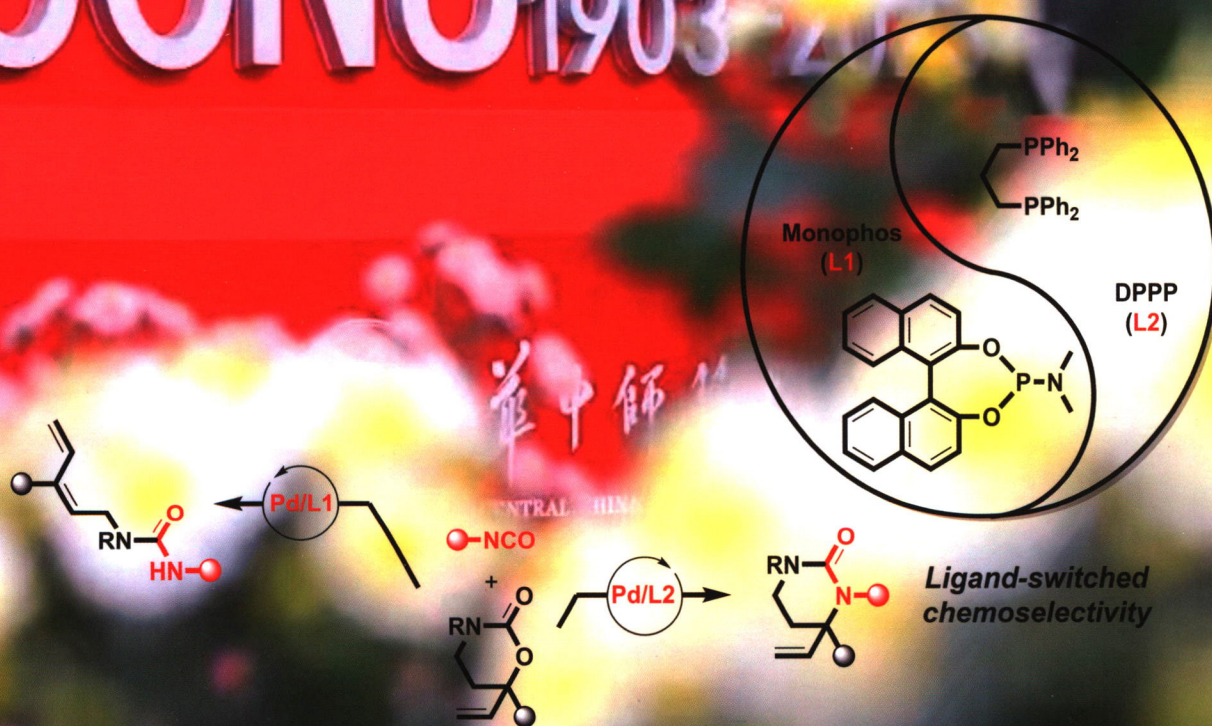
Vol. 43 No. 1 January 2023

求实创新

立德树人

祝贺
华中师大
双甲子校庆

CCNU 1903-2023



ISSN 0253-2786



中国科学院上海有机化学研究所 主办
中国化学会

有机化学 (月刊)

Chinese Journal of Organic Chemistry

(YOUJI HUAXUE)

第 43 卷 第 1 期 (总 410 期) 2023 年 1 月

目次

综述与进展

- 过渡金属催化的酮羰基导向 C—H 键官能化反应进展..... 陈泗林 杨芸辉* 陈超* 王从洋* (1)
- 电化学合成 C-磺酰基化合物的研究进展..... 魏琬絮 詹磊 高雷 黄国保* 马献力* (17)
- 直接三氟甲硒基化反应研究进展..... 胡朝明 吴纪红 吴晶晶* 吴范宏* (36)
- 构建 2*H*-吡咯-2-酮骨架的研究进展..... 刘东汉 鲁席杭 柴张梦洁 杨浩琦 孙瑜琳 余富朝* (57)
- N-Ts 氰胺在有机合成中的研究与应用..... 王川川 马志伟 侯学会 杨龙华* 陈亚静* (74)
- 基于 1,3-二氯-7-羟基-9,9-二甲基-2(9*H*)-吡啶酮(DDAO)的近红外荧光探针研究进展..... 马廷慧 武宇乾 王晓旭 高贵* 周欣* (94)
- 聚乳酸合成催化体系: 机遇与挑战..... 孟祥坤 祁正源 俞磊* 张亦畅* (112)
- 金属-多孔有机分子笼纳米复合物的研究进展..... 陈嘉麟 马邳蘅 李禹洋 曹思炜 庄强* (120)
- 九元氮杂环化合物合成最新研究进展..... 覃小婷 邹宁 农彩梅 莫冬亮* (130)
- 以 7-氮杂吡啶为内在导向基团的 *N*-芳基 C—H 官能化研究进展..... 袁成 潘长多* (156)

研究论文

- Daphnezomines A 和 B 的四环核心骨架合成..... 胡晶平 陈文清 蒋宇旻 徐晶* (171)
- 基于黄酮的长波长荧光探针用于检测体外和体内生物硫醇..... 周思仪 丁旭 赵永梅 李景华* 罗穗* (178)
- 氧杂蒽与亚磺酸钠的 electrochemical 氧化 C(sp³)-H 磺酰化反应..... 危斌 周子龙 秦景灏* 严泽宇 郭嘉程 雷澍 谢叶香 欧阳旋慧* 宋仁杰* (186)
- I₂ 催化 β-酮腈与 1*H*-吡啶-5-胺的环化反应..... 桑田 贾帆 何静 李春天 刘岩* 刘平* (195)
- 新型咪喃 α-丁烯内酯类化合物的设计、合成及其生物活性研究..... 李想 朱凯 韩清 路星星 李明君 凌云 段红霞* (202)

* 通讯联系人.

3-脞啉酮衍生物的合成及抗肿瘤活性研究.....	刘威琴 邵利辉 李成朋 邹雅玉 龙海洮 李焱 戈强胜 王贞超* 欧阳贵平*	(214)
新型茚并茚-6,12-二酮衍生物的合成与性能研究.....	王静* 吴琳琳 王倩	(223)
新型2-(1-甲基-1 <i>H</i> -吡唑-4-基)嘧啶-4-甲酰胺的设计、合成、杀菌活性及分子对接研究.....	孙昌兴 张福豪 张欢 李鹏辉 姜林*	(229)
硫代磺酸酯和磺酰卤的绿色合成研究.....	乃比江·赛米 张蕾 买地娜·沙拉木 曾竞* 阿布都热西提·阿不力克木*	(236)
轴向嫁接型温度响应性手性 salen Mn ^{III} 聚合物的制备及在纯水相烯烃不对称环氧化反应中的应用.....	韩彪 张瑶瑶* 陈舒晗 赵梦鸽 李楠 李维双 朱磊*	(244)
可见光促进 <i>N</i> -氟代酰胺的 1,5-氢迁移和自由基偶联反应合成联苄基衍生物.....	雷盼盼 陈沁琳 陈航 周洋 敬林海* 汪伟* 陈芬儿*	(254)
配体调控钯催化乙烯基环状碳酰胺和异氰酸酯的差异性转化.....	熊威 石斌 姜烜 陆良秋* 肖文精	(265)
含磺酰胺结构的 1,3,4-噁二唑酮类化合物的设计、合成及抗菌活性研究.....	陈艺方 罗鑫 王余 邢志富 彭菊 陈吉祥*	(274)
3-硝基-1,2,4-三唑-5-酮(NTO)热分解机理的对称破缺密度泛函理论研究.....	凌琳 王健 李婧 李玉学* 吕龙*	(285)

研究简报

海洋来源真菌 <i>Eutypella</i> sp. F0219 次级代谢产物研究.....	易继凌 施康琦 吴冰林 黎婉珊* 陈光英*	(295)
新型含二氢脞啉酮的咖啡因衍生物的合成及生物活性研究.....	汪蕾 于淑晶 杨娜 王宝雷*	(299)
一种点亮型硫化氢荧光探针的合成及其在红酒和细胞中的应用.....	杨雅馨 陈琳 胡晓玲 钟克利* 李世迪 燕小梅 张璟琳* 汤立军	(308)
秋水仙碱及其天然类似物(-)- <i>N</i> -乙酰秋水酚甲醚的不对称合成.....	濮留洋 李芷悦 李利民 马玉翠 马民* 胡胜全* 吴正治*	(313)
三苯胺衍生物的合成及其基于聚集诱导发光(AIE)机理对汞离子“OFF-ON”荧光识别.....	李阳阳 孙小飞* 胡晓玲 任源远 钟克利* 燕小梅 汤立军	(320)
一种具有聚集诱导发光性能的 Zn ²⁺ 荧光探针的设计合成.....	张继东* 颜婉琳 胡文强 郭典 张大龙 权校昕 卜贤盼 陈思宇	(326)
红树来源真菌 <i>Daldinia eschscholtzii</i> HJ004 发酵产物中三个新的次级代谢产物.....	王斌 曾尾女 李果钰 肖媚 韦方芳 罗由萍 钮智刚 黄国雷 郑彩娟*	(332)
卤素阴离子催化的立体可控炔烃碳化反应研究.....	田冲 孙奇 王俊锋 陈俏 温志国 Maxim Borzov 聂万丽*	(338)
一种基于“聚集诱导发光+激发态分子内质子转移”机制的苯并噻唑衍生物荧光探针及其对次氯酸根的识别.....	刘梦 黄廷茹 孙小飞* 汤立军*	(345)
均苯四甲酸二酰亚胺拓展柱[6]芳烃与羧酸盐客体分子的络合性能研究.....	程璐 曾飞* 王小峰*	(352)

亮点述评

(一)-Principinol C 的全合成研究.....	陈彦宇 高栓虎*	(357)
烷烃 C—H 键的区域选择性烯丙基化.....	米一曼 黄学良*	(359)

不对称铈催化螺硅杂双环丁烷与炔烃的双环扩环反应	祝炜轲 徐利文*	(362)
β,β -双取代烯酰胺的不对称催化氢硅化反应	张振锋*	(365)
铈催化炔烃的迁移 1, <i>n</i> -双硼化和烯基硼的迁移氢硼化	陈常鹏 朱少林*	(368)
超高荧光量子产率圆偏振发光纳米石墨烯	于富伟 邱惠斌*	(371)
《有机化学》投稿须知		(373)

Chinese Journal of Organic Chemistry

Vol. 43 No. 1 January 2023

Cover Picture: Ligand-Switched Pd-Catalyzed Divergent Transformations of Vinyl Cyclic Carbamates and Isocyanates

Two transformations of vinyl cyclic carbamates and isocyanates under palladium catalysis have been successfully developed by Lu and co-workers on page 265. Linear and cyclic ureas that are highly significant for pharmaceutical chemistry, agricultural chemistry and materials science are produced in a controlled manner with good efficiency and selectivity. The key to this success is the choice of suitable phosphor-contained ligands to switch the chemoselectivity.



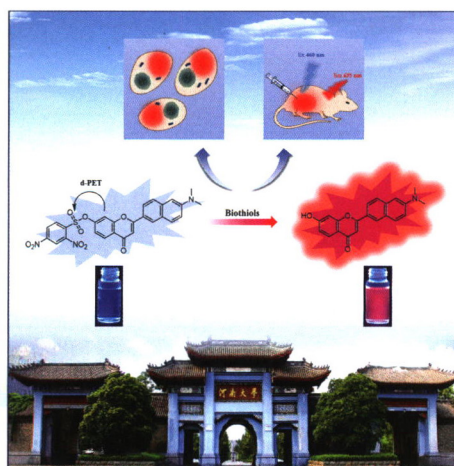
Inside Cover: Recent Advances on the Synthesis of Nine-Membered *N*-Heterocycles

The recent advances in the synthesis of nine-membered *N*-heterocycles are reviewed by Qin, Zou, Nong, and Mo on page 130. Various new strategies have been developed to prepare nine-membered *N*-heterocycles, which have been successfully applied in the synthesis of natural products and pharmaceutically active molecules containing nine-membered ring scaffold through cyclization, cycloaddition, rearrangement, ring-expansion, and cascade reactions.



Inside Back Cover: A Flavone-Based Long-Wavelength Fluorescent Probe to Detect Biothiols *in vitro* and *in vivo*

A naked-eye visible, “off-on” long-wavelength fluorescent probe based on *N,N*-(dimethylamino)naphthalenyl flavone is reported by Zhou, Ding, Zhao, Li and Luo on page 178. The probe showed high selectivity and low detection limits for biothiols. It could be used for the imaging of biothiols in living hepatocarcinoma cells and in nude mice.



CONTENT

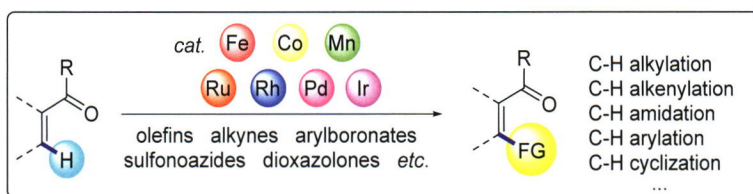
Back Cover: Synthesis of Tetracyclic Core Structure of Daphnezomines A and B

The daphnezomine A-type *Daphniphyllum* alkaloids consist of only three known members, namely daphnezomine A, daphnezomine B and dapholdhamine B. These alkaloids contain a unique aza-adamantane core along with nine contiguous stereogenic centers, thus presenting remarkable synthetic challenges. A concise synthesis of the tetracyclic core structure of daphnezomines A and B is reported by Hu, Chen, Jiang, and Xu on page 171.



REVIEWS

Advances in Transition-Metal-Catalyzed Keto Carbonyl-Directed C—H Bond Functionalization Reactions

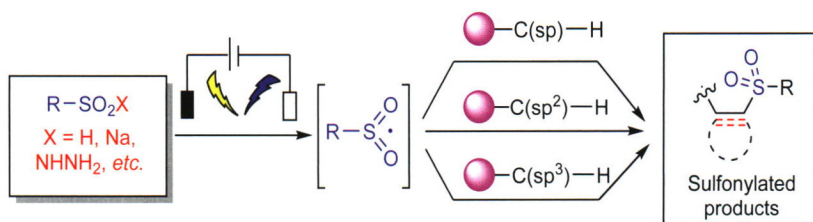


Chen, Silin; Yang, Yunhui*; Chen, Chao*; Wang, Congyang*

Chin. J. Org. Chem. **2023**, 43(1), 1

The advances on transition-metal-catalyzed keto carbonyl-directed C—H bond functionalization reactions from 2014 to 2021 are summarized, which are divided by reaction categories such as alkylation, alkenylation, amidation, arylation, cyclization, and so on.

Research Progress of Electrochemical Synthesis of C-Sulfonyl Compounds

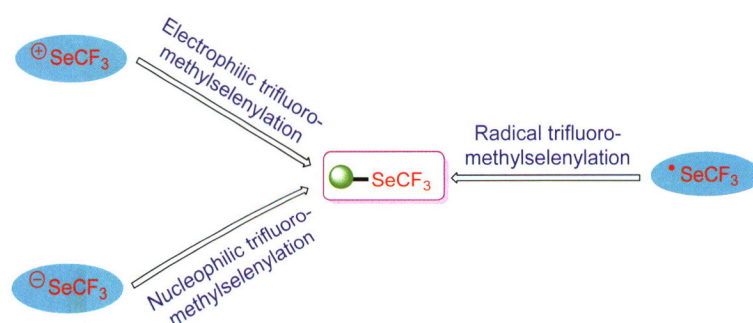


Wei, Wanjie; Zhan, Lei; Gao, Lei; Huang, Guobao*; Ma, Xianli*

Chin. J. Org. Chem. **2023**, 43(1), 17

The latest research progress of electrochemically mediated sulfonylation in recent five years is reviewed. Sulfonyl compounds are classified and introduced, and their applications and related reaction mechanisms are introduced. It is hoped that this review can provide a reference for the application of electrochemically mediated sulfonation in organic synthesis.

Research Progress on Direct Trifluoromethylselenenylation

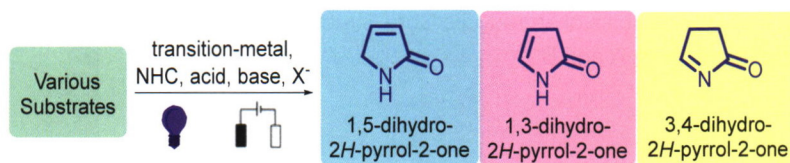


Hu, Zhaoming; Wu, Jihong; Wu, Jingjing*; Wu, Fanhong*

Chin. J. Org. Chem. **2023**, 43(1), 36

Three reaction types of trifluoromethylselenenylation in recent years are reviewed: nucleophilic trifluoromethylselenenylation, electrophilic trifluoromethylselenenylation, and radical trifluoromethylselenenylation.

Progress in Construction of 2H-Pyrrol-2-ones Skeleton

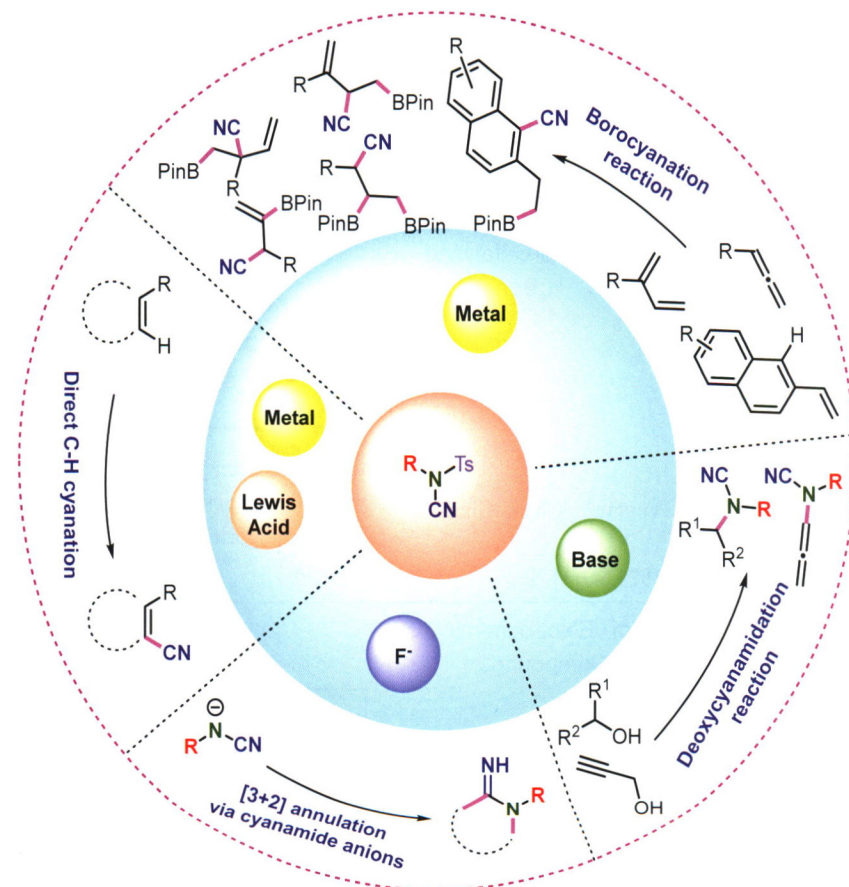


Liu, Donghan; Lu, Xihang; Chai, Zhangmengjie; Yang, Haoqi; Sun, Yulin; Yu, Fuchao*

Chin. J. Org. Chem. **2023**, 43(1), 57

2H-Pyrrol-2-ones, an important class of γ -lactam compounds, widely exist in the structure of natural products, drugs and biologically active molecules. The different synthetic methods and strategies for the construction of 2H-pyrrol-2-one skeletons are summarized.

Research and Application of N-Ts Cyanamides in Organic Synthesis

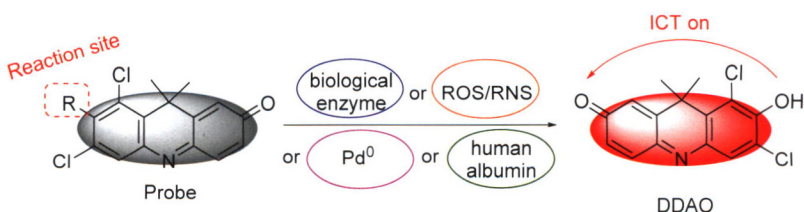


Wang, Chuanchuan; Ma, Zhiwei; Hou, Xuehui; Yang, Longhua*; Chen, Yajing*

Chin. J. Org. Chem. **2023**, 43(1), 74

The recent progress on N-Ts cyanamides, including cyanation, cyanamidation, sulfonylation, cyclization and outlook is summarized.

Research Progress of Near-Infrared Fluorescent Probes Based on 1,3-Dichloro-7-hydroxy-9,9-dimethyl-2(9H)-acridone (DDAO)



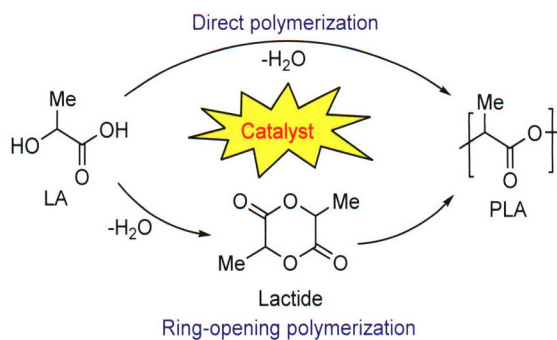
Ma, Yanhui; Wu, Yuqian; Wang, Xiaoxu; Gao, Gui*; Zhou, Xin*

Chin. J. Org. Chem. **2023**, 43(1), 94

1,3-Dichloro-7-hydroxy-9,9-dimethyl-2(9H)-acridone (DDAO) is an excellent near-infrared fluorescent dye with near-infrared emission, low pK_a (≈ 5.0), high water solubility and high quantum yield ($\Phi=0.39$). The research progress of fluorescent probes based on DDAO and its derivatives, mainly including the molecular design, action mechanism and application of probes in the recognition and detection of biological enzymes, reactive oxygen species, reactive nitrogen species, proteins and Pd^0 , is reviewed, and the development prospect of this type of fluorescent probes is prospected.

CONTENT

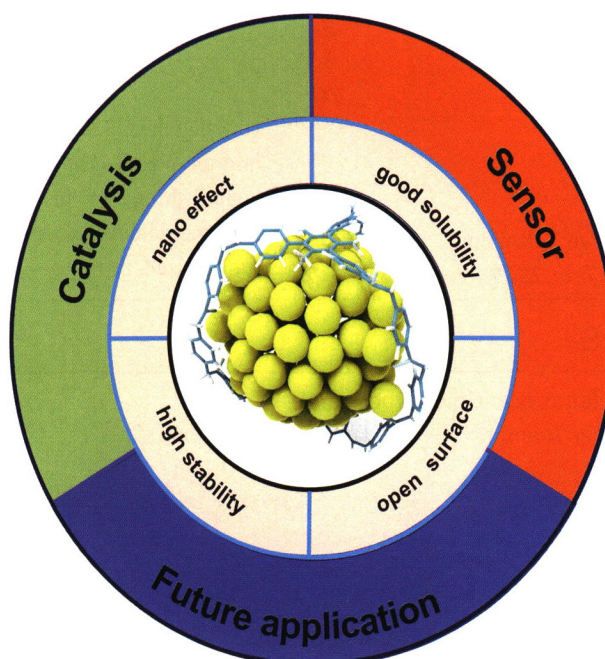
Catalytic System for Poly(lactic acid) Synthesis: Opportunities and Challenges



The preparation of poly(lactic acid) (PLA) is reviewed. Since the ring-opening polymerization of lactide has become the major method for preparing PLA, we focused on the catalyst design for the process, and clarified the related mechanisms. This short review may point out the direction for the design and development of low-toxicity and high-selectivity catalyst systems for application.

Meng, Xiangkun; Qi, Zhengyuan; Yu, Lei*;
Zhang, Yiyang*
Chin. J. Org. Chem. **2023**, 43(1), 112

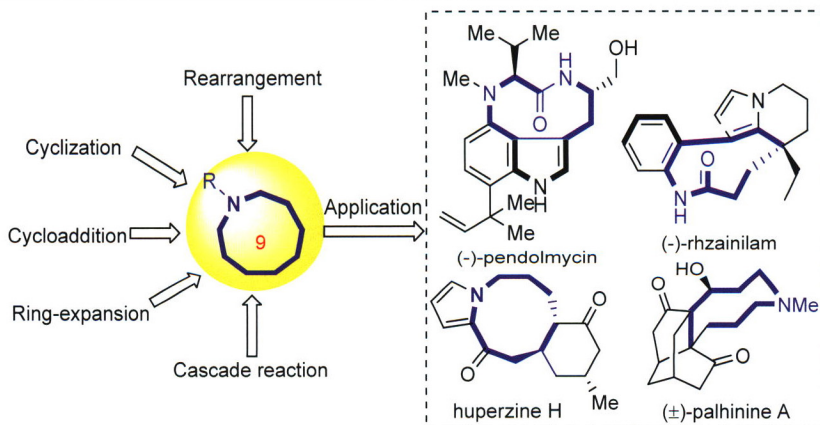
Research Progress in Metal-Porous Organic Cage Nanocomposites



Chen, Jialin; Ma, Zhiheng; Li, Yufeng; Cao, Siwei; Zhuang, Qiang*
Chin. J. Org. Chem. **2023**, 43(1), 120

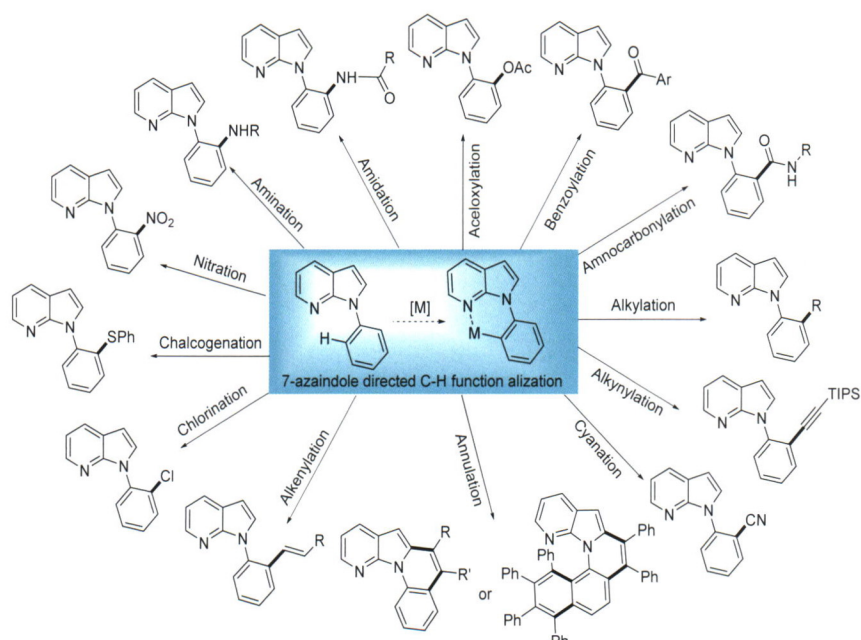
The recent research achievements in MNPs-POCs nanocomposites and their important applications are summarized, which is expected to inspire the further application in catalysis, sensors, medicine, etc.

Recent Advances on the Synthesis of Nine-Membered *N*-Heterocycles



Qin, Xiaoting; Zou, Ning; Nong, Caimei;
Mo, Dongliang*
Chin. J. Org. Chem. **2023**, 43(1), 130

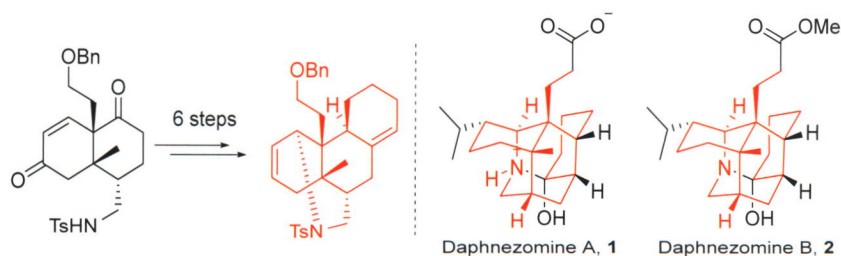
The novel strategies for the synthesis of nine-membered *N*-heterocycles and their applications in the total synthesis of natural products containing nine-membered ring in recent years are reviewed.

Recent Advances in the *N*-aryl C—H
Functionalization Using 7-Azaindole as
Intrinsic Directing Group

Utilizing the C—H functionalization strategy, numerous functional groups were installed into the *N*-aryl *ortho* position of *N*-aryl-7-azaindoles using 7-azaindole as intrinsic directing group. In this review, the recent achievements on transition-metal catalyzed 7-azaindole-directed *N*-aryl *ortho* C—H functionalization of *N*-aryl-7-azaindoles are summarized.

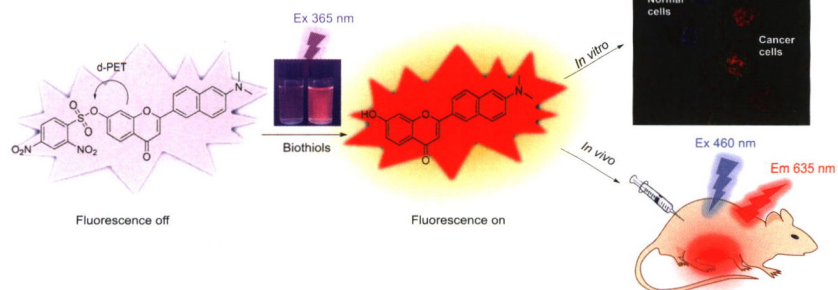
Yuan, Cheng; Pan, Changduo*
Chin. J. Org. Chem. **2023**, *43*(1), 156

ARTICLES

Synthesis of Tetracyclic Core Structure of
Daphnezomines A and B

Hu, Jingping; Chen, Wenqing; Jiang, Yu-
yang; Xu, Jing*
Chin. J. Org. Chem. **2023**, *43*(1), 171

The daphnezomine A-type *Daphniphyllum* alkaloids consist of only three known members, namely daphnezomine A (**1**), daphnezomine B (**2**) and dapholdhamine B. These alkaloids contain a unique aza-adamantane core along with nine contiguous stereogenic centers, thus presenting remarkable synthetic challenges. The synthesis of tetracyclic core structure of **1** and **2** is reported.

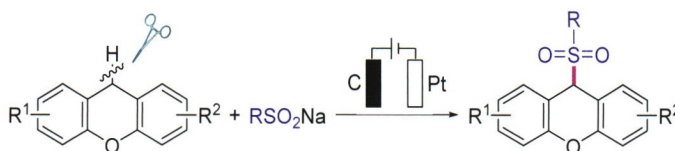
A Flavone-Based Long-Wavelength Flu-
orescent Probe to Detect Biothiols *in vitro*
and *in vivo*

Zhou, Siyi; Ding, Xu; Zhao, Yongmei; Li,
Jinghua*; Luo, Wen*
Chin. J. Org. Chem. **2023**, *43*(1), 178

An “off-on” long-wavelength fluorescent probe was synthesized based on a flavone scaffold. The probe exhibited low detection limits and high selectivity for biothiols. It could be used for imaging of biothiols in cells and mice. The probe can identify HL-7702 and HepG2 cells based on endogenous glutathione (GSH) levels.

CONTENT

Electrochemical Oxidative C(sp³)-H Sulfonylation of Xanthenes with Sodium Sulfinates



Wei, Bin; Zhou, Zilong; Qin, Jinghao*; Yan, Zeyu; Guo, Jiacheng; Lei, Shu; Xie, Yexiang; Ouyang, Xuanhui*; Song, Renjie*
Chin. J. Org. Chem. **2023**, 43(1), 186

A novel electrochemical strategy for the C(sp³)-H bond sulfonylation of xanthenes with sodium sulfonates is developed. Furthermore, a radical pathway involving the sulfonyl radical and xanthene radical is proposed. The significant advantages of this strategy include transition metal- and additional oxidant-free, mild reaction conditions, operational simplicity, broad substrate scope and excellent functional group tolerance.

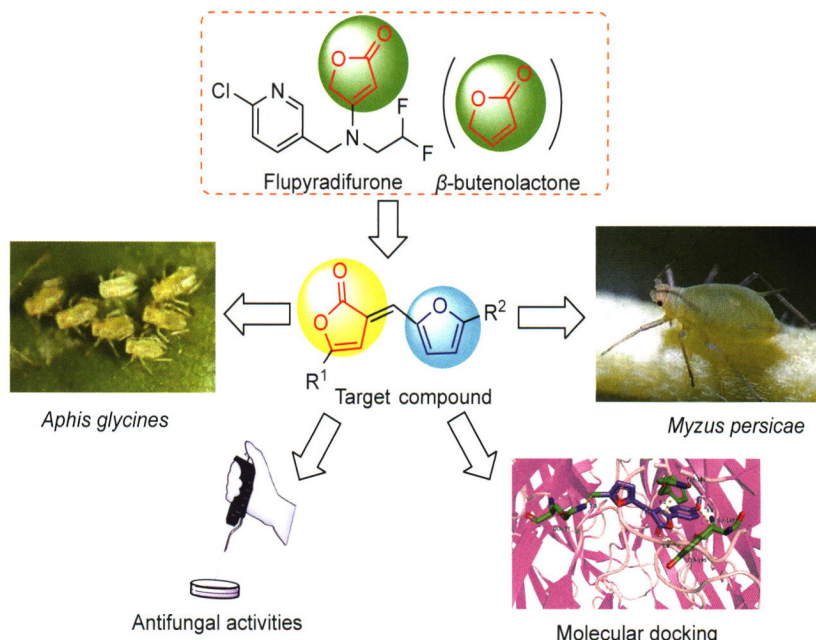
I₂-Catalyzed Cyclization of β -Ketonitrile with 1*H*-Pyrazol-5-amine



Sang, Tian; Jia, Fan; He, Jing; Li, Chuntian; Liu, Yan*; Liu, Ping*
Chin. J. Org. Chem. **2023**, 43(1), 195

An I₂-catalyzed cyclization reaction of 1*H*-pyrazol-5-amine and β -ketonitrile was described. Structurally diverse pyrazolo[1,5-*a*]pyrimidine derivatives were obtained in good to excellent yields.

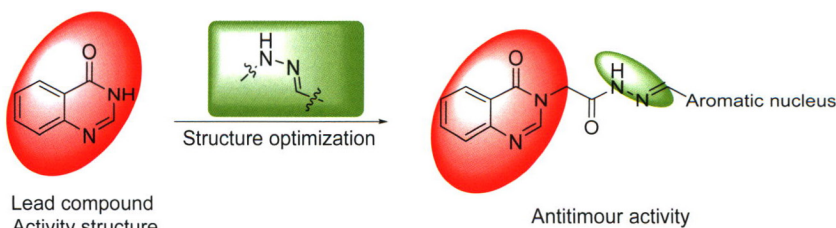
Design, Synthesis and Bioactivity Study on Novel Furan α -Butenolactone compounds



Li, Xiang; Zhu, Kai; Han, Qing; Lu, Xingxing; Li, Mingjun; Ling, Yun; Duan, Hongxia*
Chin. J. Org. Chem. **2023**, 43(1), 202

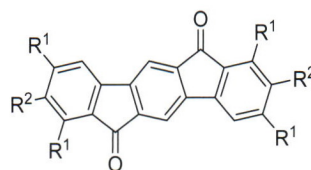
A series of novel furan α -butenolactone compounds were designed and synthesized combined the characteristics of nicotinic acetylcholine receptor and empirical design method. All target compounds showed aphicidal activity against soybean aphid and peach aphid. Some similar interactions of the furan α -butenolactone compound with nAChR were found to flupyradifurone by the molecular docking study.

Synthesis and Antitumor Activity of 3-Hydrazone Quinazolinone Derivatives

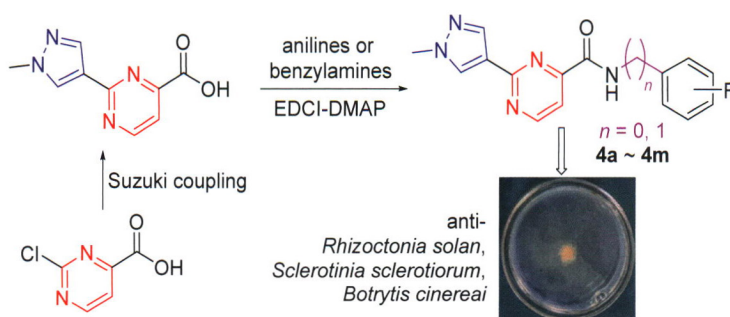


Liu, Weiqin; Shao, Lihui; Li, Chengpeng; Zou, Yayu; Long, Haitao; Li, Yan; Ge, Qiangsheng; Wang, Zhenchao*; Ouyang, Gui-ping
Chin. J. Org. Chem. **2023**, 43(1), 214

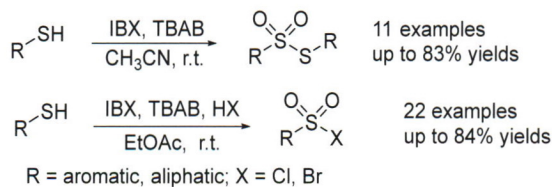
A series of 3-hydrazone quinazolinone derivatives were synthesized via introducing hydrazone structure into the 3-position of quinazolinone by active splicing principle. The results of their antitumor activity test showed that these compounds have effective inhibitory activity on A549, PC-3, HepG2 and K562 tumor cell lines.

Synthesis and Characterization of New
Indeno[1,2-*b*]fluorene-6,12-dione Deriva-
tives5a: R¹ = CH₃, R² = H5b: R¹ = H, R² = *i*-Pr5c: R¹ = H, R² = *n*-Bu5d: R¹ = H, R² = *t*-Bu

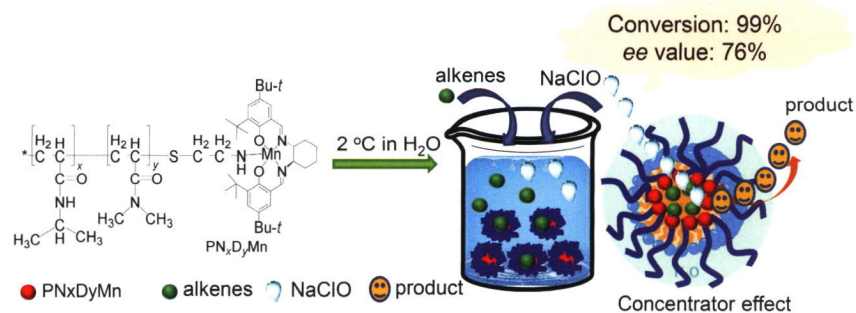
A series of new organic semiconductors based on indeno[1,2-*b*]fluorene-6,12-dione was successfully synthesized and characterized. They show high stability and strong fluorescence. The electron withdrawing carbonyl group lowers the lowest unoccupied molecular orbital (LUMO) energy levels, leading to increased electronegativities, which is beneficial for high photo-stability in air. X-Ray crystallography results of 2,8-diisopropylindeno[1,2-*b*]fluorene-6,12-dione (**5b**) and 2,8-dibutylindeno[1,2-*b*]fluorene-6,12-dione (**5c**) reveal that they crystallize with the rigid coplanar systems and pack into slipped face-to-face π -stacks. This packing could facilitate carrier transport.

Wang, Jing*[†]; Wu, Linlin; Wang, Qian
Chin. J. Org. Chem. **2023**, 43(1), 223Design, Synthesis, Fungicidal Activity
and Molecular Docking Study of Novel 2-
(1-Methyl-1*H*-pyrazol-4-yl)pyrimidine-4-
carboxamidesSun, Changxing; Zhang, Fuhao; Zhang,
Huan; Li, Penghui; Jiang, Lin*
Chin. J. Org. Chem. **2023**, 43(1), 229

Thirteen 2-(1-methyl-1*H*-pyrazol-4-yl)pyrimidine-4-carboxamides were designed and synthesized. The preliminary fungicidal activity against three plant fungi was evaluated and molecular docking study was conducted.

Green Synthesis of Thiosulfonates and
Sulfonyl HalidesNaibijiang, Saimi; Zhang, Lei; Maidina,
Shalamu; Zeng, Jing*[†]; Abulikemu, Abudu
Rexit*
Chin. J. Org. Chem. **2023**, 43(1), 236

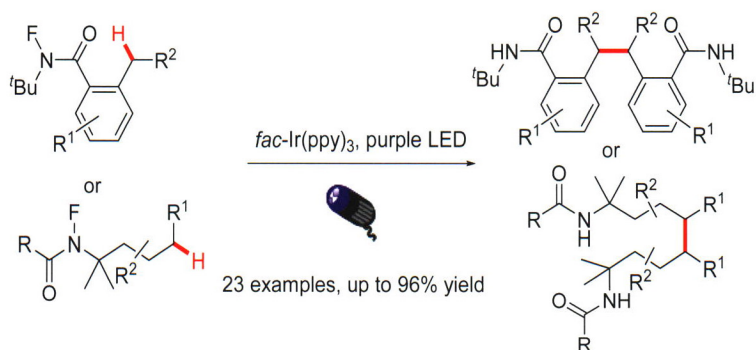
Using the oxidation between 2-iodoylbenzoic acid (IBX) and tetrabutylammonium bromide (TBAB), thiophenols and thiols reacted rapidly to form corresponding thiosulfonates at room temperature, and 11 thiosulfonates were obtained with yields ranging from 54% to 83%. It was also found that the catalytic system in the presence of aqueous HCl (*w*=36%) and HBr (*w*=46%) oxidatively halogenated thiophenols and thiols, respectively. 11 kinds of sulfonyl chlorides and 11 kinds of sulfonyl bromides were obtained with yields ranging from 62% to 84%.

Preparation of Axially Grafted Tempera-
ture-Responsive Chiral Salen Mn^{III} and
Application in Asymmetric Epoxidation of
Olefins in WaterHan, Biao; Zhang, Yaoyao*[†]; Chen, Shuhan;
Zhao, Mengge; Li, Nan; Li, Weishuang; Zhu,
Lei*
Chin. J. Org. Chem. **2023**, 43(1), 244

A series of temperature-responsive chiral salen Mn^{III} copolymers were prepared. The copolymers can dramatically accelerate the reaction rates by "concentrator effect" and outstanding catalytic efficiency was observed in the nanoreactor system for asymmetric epoxidation of olefin at 2 °C in water.

CONTENT

Synthesis of Bibenzyl Derivatives via Visible-Light-Promoted 1,5-Hydrogen Atom Transfer/Radical Coupling Reactions of *N*-Fluorocarboxamides

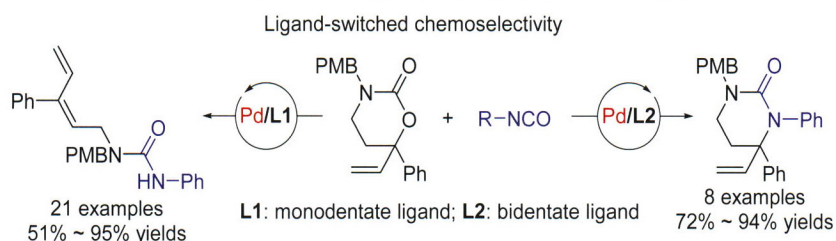


Lei, Panpan; Chen, Qinlin; Chen, Hang; Zhou, Yang; Jin, Linhai*; Wang, Wei*; Chen, Fener*

Chin. J. Org. Chem. **2023**, 43(1), 254

Visible light-mediated 1,5-hydrogen atom transfer and radical coupling reactions have been accomplished using *N*-fluoro-substituted benzamides. This method exhibits a broad substrate scope and high functional group tolerance, giving the corresponding bibenzyl products with generally good yields. Furthermore, this strategy could also be used to *N*-fluoro-substituted aliphatic amides.

Ligand-Switched Pd-Catalyzed Divergent Transformations of Vinyl Cyclic Carbamates and Isocyanates

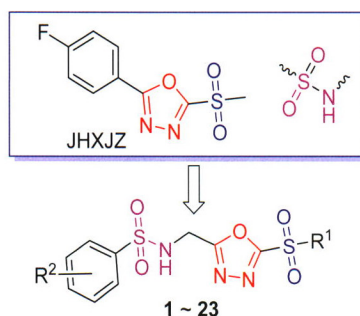


Xiong, Wei; Shi, Bin; Jiang, Xuan; Lu, Liangqiu*; Xiao, Wenjing

Chin. J. Org. Chem. **2023**, 43(1), 265

Two kinds of transformations of vinyl cyclic carbamates with isocyanates were achieved by palladium catalysis, affording linear and cyclic ureas in moderate to good yields. The high chemoselectivity was well controlled and switched by rationally using monodentate or bidentate ligands.

Design, Synthesis and Antibacterial Activity of 1,3,4-Oxadiazole Sulfones Containing Sulfonamide Structure



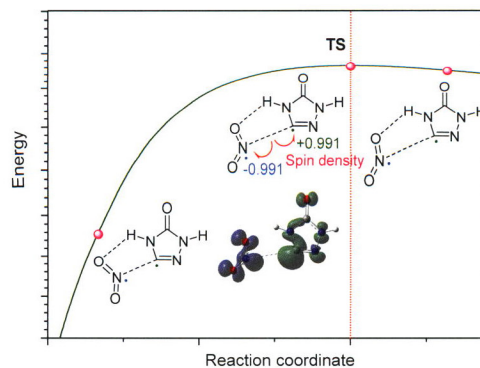
Compound	EC ₅₀ /(μg·L ⁻¹)	
	Xoo	Xoc
4	1.1	1.3
Bismerthiazol	71.4 ± 3.9	84.1 ± 6.5
Thiodiazole copper	84.0 ± 3.1	122.1 ± 9.5

Chen, Yifang; Luo, Xin; Wang, Yu; Xing, Zhifu; Peng, Ju; Chen, Jixiang*

Chin. J. Org. Chem. **2023**, 43(1), 274

To discover new antibacterial agents, twenty-three 1,3,4-oxadiazolsulfone compounds containing a sulfonamide structure were designed and synthesized by active substructure splicing and their antibacterial activities were tested. The antibacterial activity showed that 4-fluoro-*N*-((5-(methylsulfonyl)-1,3,4-oxadiazole-2-yl)methyl)benzenesulfonamide (**4**) exhibited excellent activity against *Xanthomonas oryzae* pv. *oryzicola* (*Xoc*) and *Xanthomonas oryzae* pv. *oryzae* (*Xoo*).

Broken-Symmetry Density Functional Theory Study on Pyrolysis Mechanisms of 3-Nitro-1,2,4-triazol-5-one (NTO)

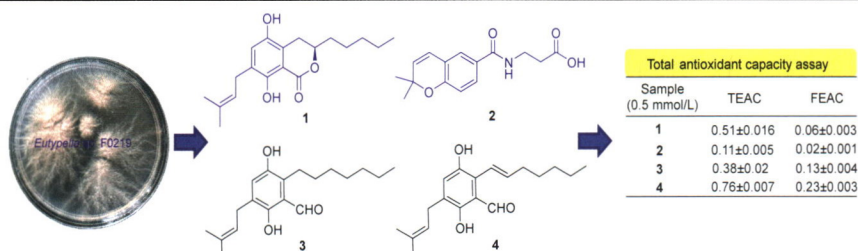


Ling, Lin; Wang, Jian; Li, Jing; Li, Yuxue*; Lu, Long*

Chin. J. Org. Chem. **2023**, 43(1), 285

Broken-symmetry density functional theory method (BS-UDFT) was used to locate the transition states of homolytic cleavage of covalent bonds. New mechanisms promoted by the NO intermediate were proposed.

NOTES

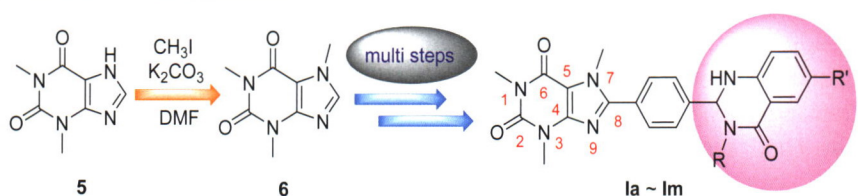
Study on Secondary Metabolites of Marine-Derived Fungus *Eutypella* sp. F0219

One new prenylated dihydroisocoumarin, eutypellarin A (**1**), and one new chromene amide derivative, eutypellarin B (**2**), as well as two known prenylated benzaldehyde derivatives (**3** and **4**) were isolated from the marine-derived fungi *Eutypella* sp. F0219. Compounds **1** and **4** had moderate antioxidant capacities.

Yi, Jiling; Shi, Kangqi; Wu, Binglin; Li, Wanshan*; Chen, Guangying*

Chin. J. Org. Chem. **2023**, 43(1), 295

Studies on the Synthesis and Biological Activities of Novel Dihydroquinazolinone-Containing Caffeine Derivatives

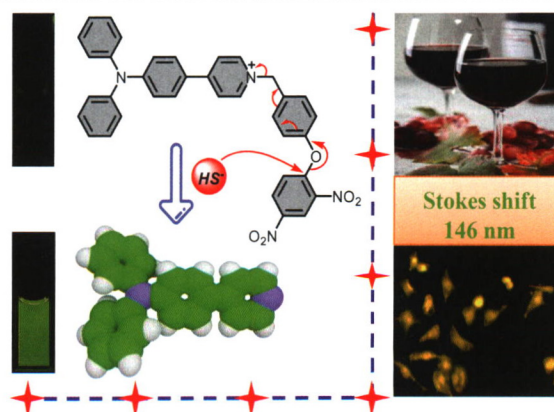


The synthesis and biological activity studies of novel caffeine derivatives containing dihydroquinazolinone motif are reported. The relationships between the structure and activity of the compounds are summarized. The insecticidal, herbicidal and fungicidal bioassay results of several compounds provide useful reference for further design of new pesticidal agents based on the structure of xanthine natural products.

Wang, Lei; Yu, Shujing; Yang, Na; Wang, Baolei*

Chin. J. Org. Chem. **2023**, 43(1), 299

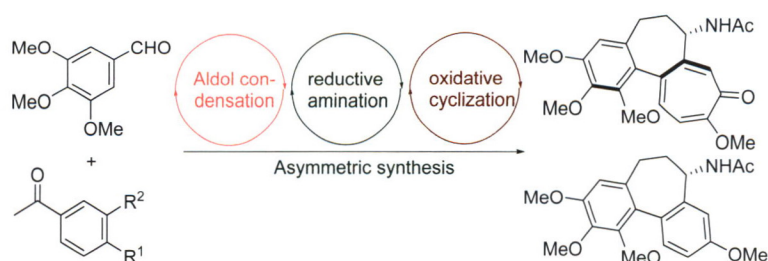
Synthesis of a Turn-On Fluorescent Probe for Hydrogen Sulfide and Its Application in Red Wine and Living Cells



Yang, Yaxin; Chen, Lin; Hu, Xiaoling; Zhong, Keli*; Li, Shidi; Yan, Xiaomei; Zhang, Jinglin*; Tang, Lijun

Chin. J. Org. Chem. **2023**, 43(1), 308

A novel triphenylamine derivative (**Tdip**) was synthesized. **Tdip** can recognize hydrogen sulfide (H_2S) with turn-on fluorescence response through tandem reaction triggered by HS^- to release precursor compound. In addition, **Tdip** can detect H_2S in actual red wine samples and image H_2S in living cells.

Asymmetric Synthesis of (–)-Colchicine and Its Natural Analog (–)-*N*-Acetylcolchicine Methyl Ether

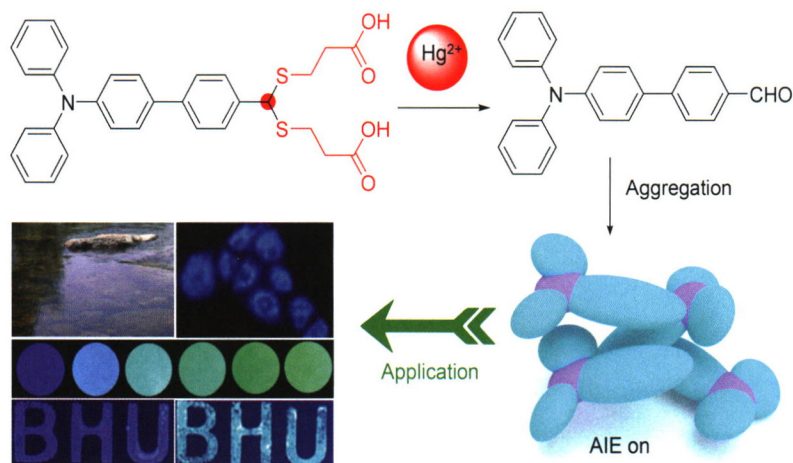
Pu, Liu-Yang; Li, Zhiyue; Li, Limin; Ma, Yucui; Ma, Min*; Hu, Shengquan*; Wu, Zhengzhi*

Chin. J. Org. Chem. **2023**, 43(1), 313

(–)-Colchicine and its natural analogue (–)-*N*-acetylcolchicinol methyl ether have been synthesized in a comparatively conciser asymmetric synthetic approach. Our strategy provides an efficient method for the convenient and economical synthesis of these alkaloids.

CONTENT

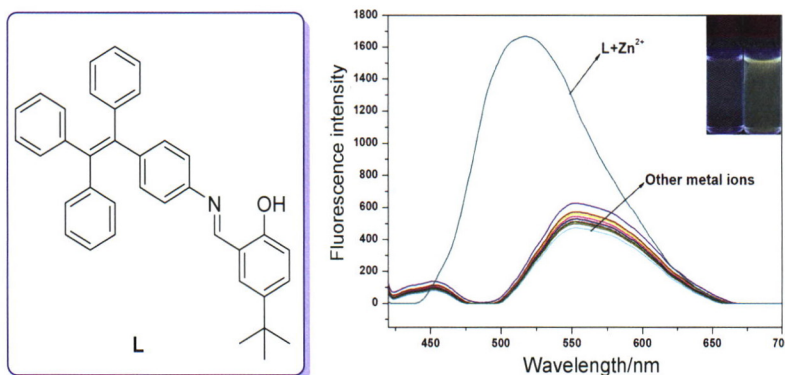
Synthesis of Triphenylamine Derivative and Its Recognition for Hg^{2+} with “OFF-ON” Fluorescence Response Based on Aggregation-Induced Emission (AIE) Mechanism



Li, Yangyang; Sun, Xiaofei*; Hu, Xiaoling; Ren, Yuanyuan; Zhong, Keli*; Yan, Xiaomei; Tang, Lijun
Chin. J. Org. Chem. **2023**, *43*(1), 320

A novel triphenylamine derivative **Tbia** was synthesized by a simple two-step reaction. **Tbia** has good selectivity and sensitivity for Hg^{2+} in hydroxyethylpiperazine ethane sulfonic acid (HEPES) solution, an “OFF-ON” fluorescence response, a wide range of pH application, and the detection limit of 63 nmol/L.

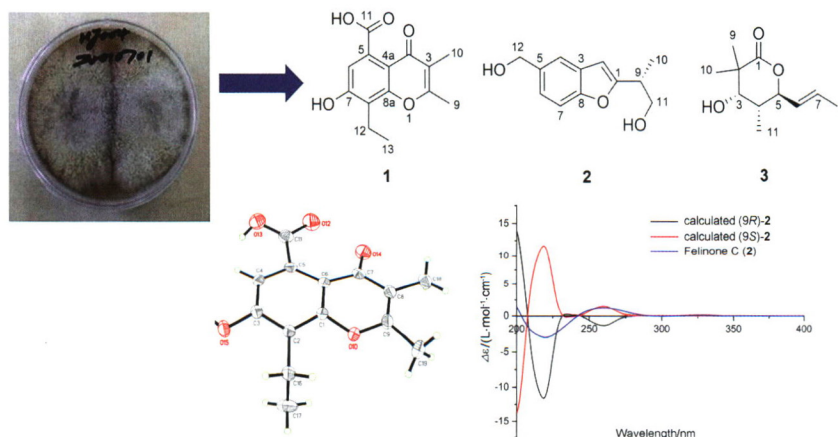
Design and Synthesis of a Zn^{2+} Fluorescent Probe Based on Aggregation Induced Luminescence Properties



Zhang, Jidong*; Yan, Wanlin; Hu, Wenqiang; Guo, Dian; Zhang, Dalong; Quan, Xiaoxin; Bu, Xianpan; Chen, Siyu
Chin. J. Org. Chem. **2023**, *43*(1), 326

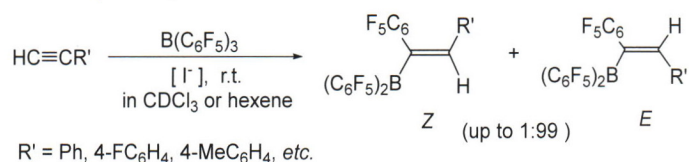
A novel aggregation-induced emission (AIE) effect Zn^{2+} fluorescent probe **L** was constructed with aggregation-induced emission (AIE), tetraphenylethylene as the fluorescent group and 5-*tert*-butyl-2-hydroxybenzene as the recognition group. Its fluorescence properties were studied by UV-vis and fluorescence spectroscopy. The response mechanism of the probe to Zn^{2+} was studied by Job's plot, ESI-MS and density functional theory (DFT) theoretical calculation.

Three New Secondary Metabolites from the Mangrove-Derived Fungus *Daldinia eschscholtzii* HJ004



Wang, Bin; Zeng, Weinu; Li, Gaoyu; Xiao, Mei; Wei, Fangfang; Luo, Youping; Niu, Zhigang; Huang, Guolei; Zheng, Caijuan*
Chin. J. Org. Chem. **2023**, *43*(1), 332

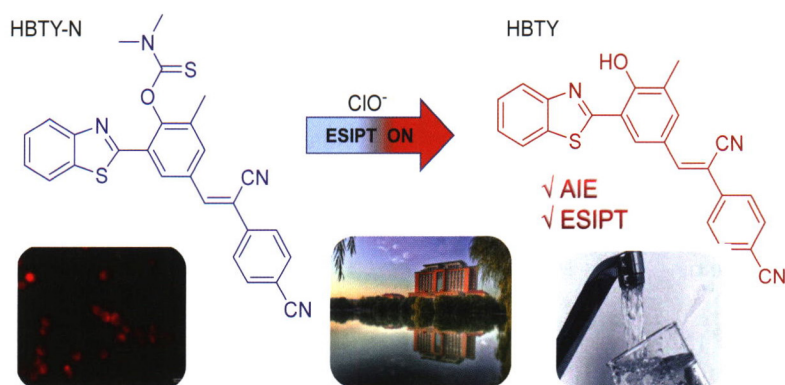
Three new compounds, together with eight known compounds, were isolated from the mangrove-derived fungus *Daldinia eschscholtzii* HJ004.

E-Stereospecific 1,1-Carboration of Terminal Arylalkynes with $[\text{IB}(\text{C}_6\text{F}_5)_3]^-$ *E*-Stereospecific 1,1-carboration

The different effects of halo anions, substrates, solvents, temperature and reaction time to the stereospecific and reactivities of 1,1-carboration of alkynes and $\text{B}(\text{C}_6\text{F}_5)_3$ were studied, meanwhile the corresponding catalytic mechanism has been expoled. A convenient large-scale preparation method for the stereoselective (*E*)-1,1-carboration products has been developed. The catalytic reactivities of ring-opening polymerization of cyclohexene oxide (CHO) have also been explored with different stereo-carbaboranes isolated from 1,1-carboration reaction.

Tian, Chong; Sun, Qi; Wang, Junfeng; Chen, Qiao; Wen, Zhiguo; Borzov, Maxim; Nie, Wanli*

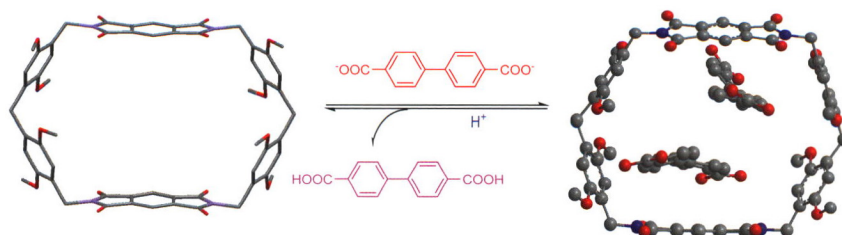
Chin. J. Org. Chem. **2023**, 43(1), 338

An “Aggregation-Induced Emission + Excited-State Intramolecular Proton Transfer” Mechanisms-Based Benzothiazole Derived Fluorescent Probe and Its ClO^- Recognition

A fluorescent probe based on “aggregation-induced emission (AIE)+excited-state intramolecular proton transfer (ESIPT)” was synthesized. Its fluorescence properties and recognition mechanism were discussed. The probe has high selectivity and anti-interference ability for the recognition of ClO^- in Tris buffer solution, which can be applied to the detection of ClO^- in cells and actual water samples, and has good application prospects.

Liu, Meng; Huang, Yanru; Sun, Xiaofei*; Tang, Lijun*

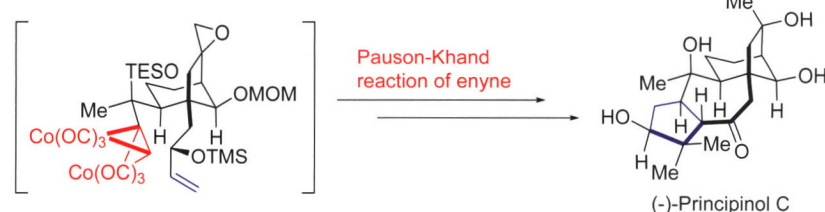
Chin. J. Org. Chem. **2023**, 43(1), 345

Study on the Complexation Properties of Promellitic Diimide-Extended Pillar[6]aren and Carboxylate Guests

The pyromellitic diimide-extended pillar[6]aren could form 1 : 2 complexes with carboxylate guests in solution. Interestingly, the complexation and decomplexation of the complexes between the host and the guest could be achieved by changing the pH of the solution, and the process could also be observed by naked eye.

Cheng, Lu; Zeng, Fei*; Wang, Xiaofeng*

Chin. J. Org. Chem. **2023**, 43(1), 352

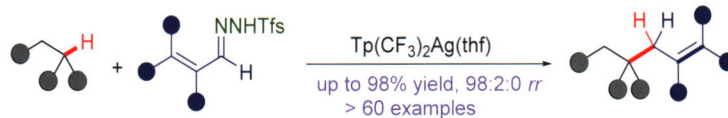
HIGHLIGHTS**Total Synthesis of (–)-Principinol C**

Chen, Yanyu; Gao, Shuanhu*

Chin. J. Org. Chem. **2023**, 43(1), 357

CONTENT

Selective C—H Allylation of Alkanes



* First simple alkane C-H insertion with non-acceptor alkenyl carbenes

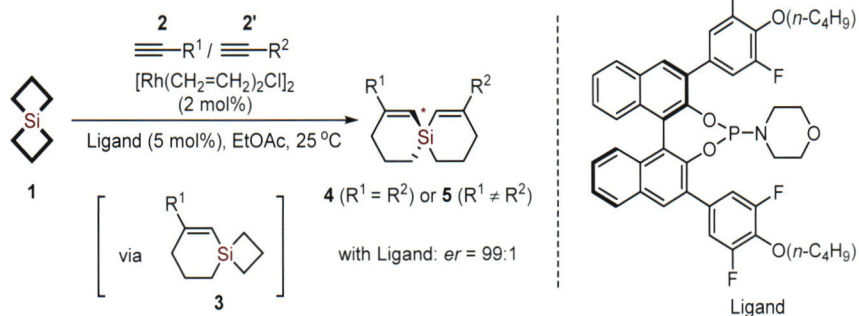
* Challenging quaternary sp³-carbon formation

* Easy operatin and scale-up

Mi, Yiman; Huang, Xueliang*

Chin. J. Org. Chem. **2023**, 43(1), 359

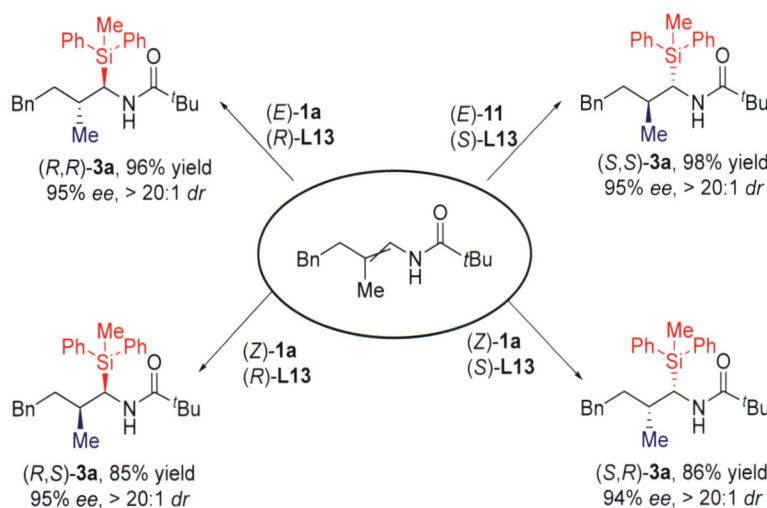
Enantioselective Rhodium-Catalyzed Dual Ring Expansion of Spirosilabicyclobutane with Alkynes



Zhu, Weike; Xu, Liwen*

Chin. J. Org. Chem. **2023**, 43(1), 362

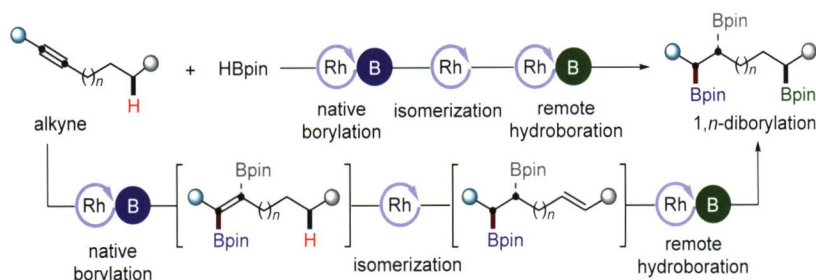
Catalytic Asymmetric Hydrosilylation of β,β -Disubstituted Enamides



Zhang, Zhenfeng*

Chin. J. Org. Chem. **2023**, 43(1), 365

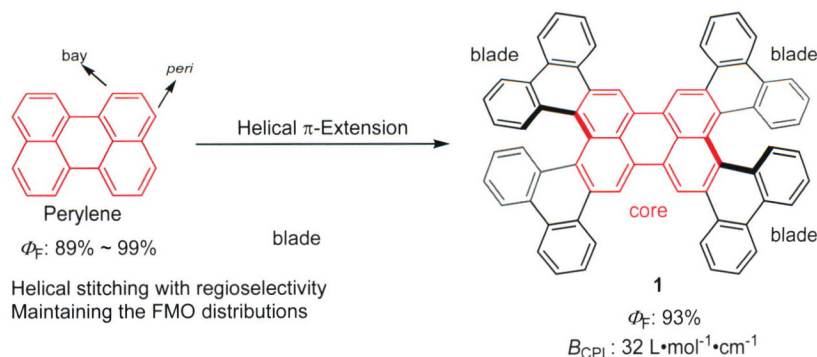
Rhodium-Catalyzed Migratory 1,*n*-Diborylation of Alkynes and Migratory Hydroboration of Vinylboronates



Chen, Changpeng; Zhu, Shaolin*

Chin. J. Org. Chem. **2023**, 43(1), 368

Circularly Polarized Luminescent Chiral Nanographene with an Ultrahigh Fluorescence Quantum Yield



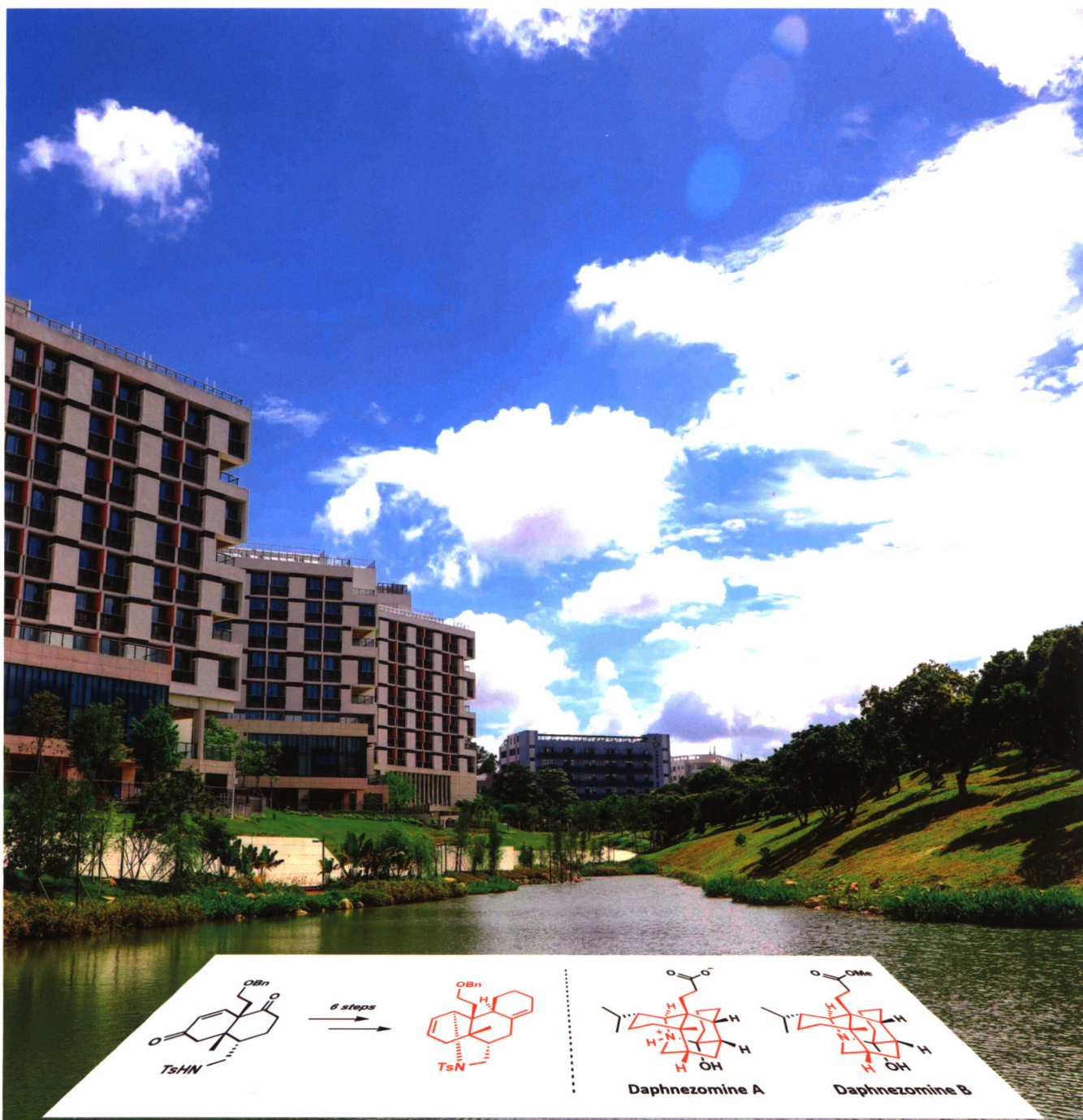
Gan, Fuwei; Qiu, Huibin*

Chin. J. Org. Chem. **2023**, 43(1), 371

有机化学

Chinese Journal of Organic Chemistry

Vol. 43 No. 1 January 2023



中国科学院上海有机化学研究所 主办
中国化学会