ISSN 0253-2786
CN 31-1321/O6
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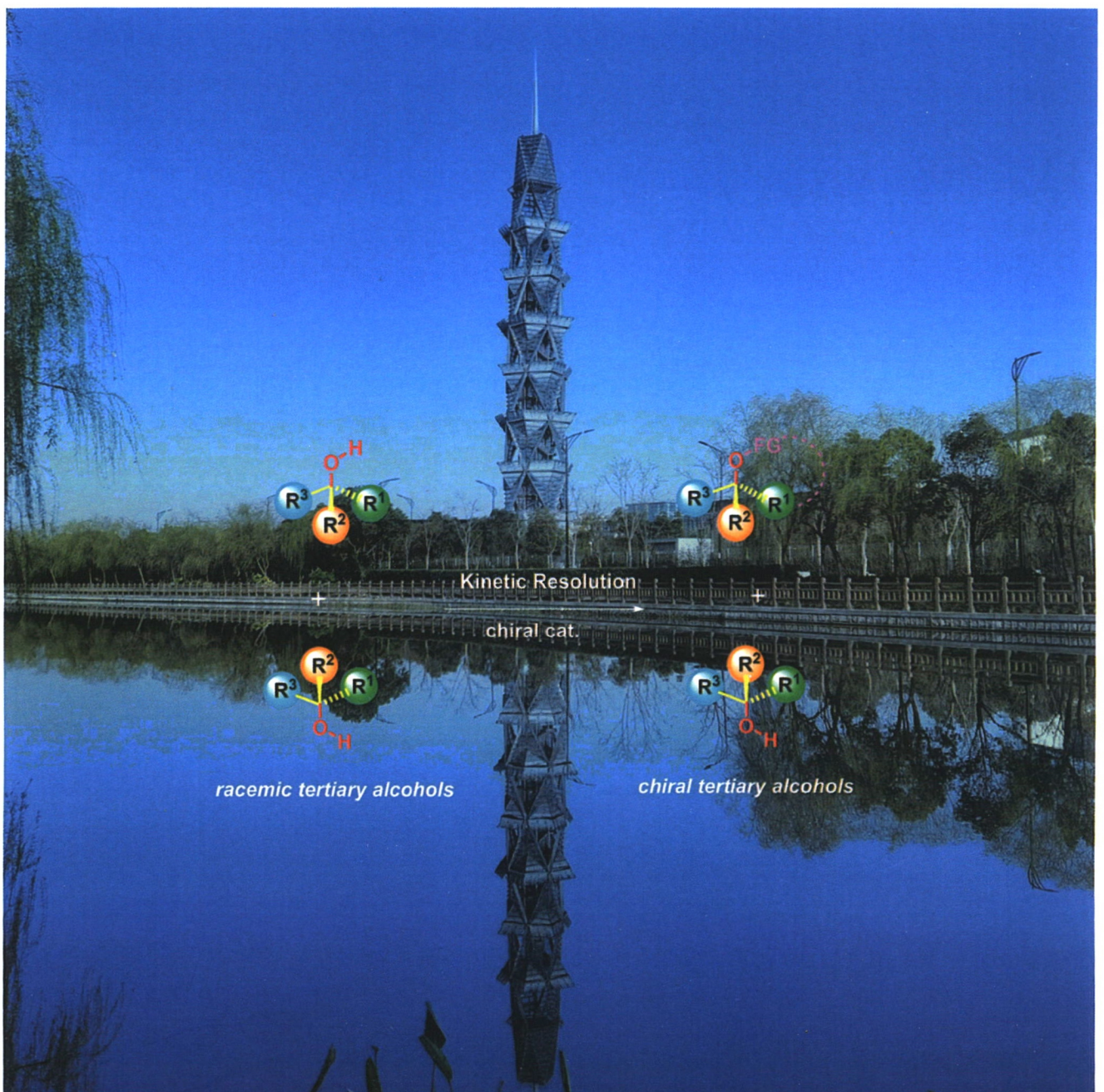
Chinese Journal of Organic Chemistry

Vol. 42 No. 3 March 2022



ISSN 0253-2786

中国化学会
中国科学院上海有机化学研究所 主办

有 机 化 学 (月刊)

Chinese Journal of Organic Chemistry

(YOUJI HUAXUE)

第 42 卷 第 3 期 (总 400 期) 2022 年 3 月

目 次

* 通讯联系人.

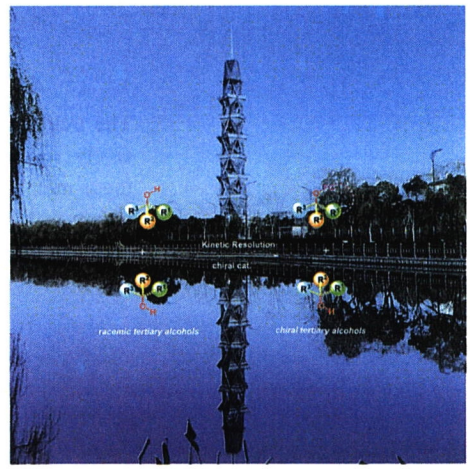
研究简报

亮点述评

Chinese Journal of Organic Chemistry

Vol. 42 No. 3 March 2022

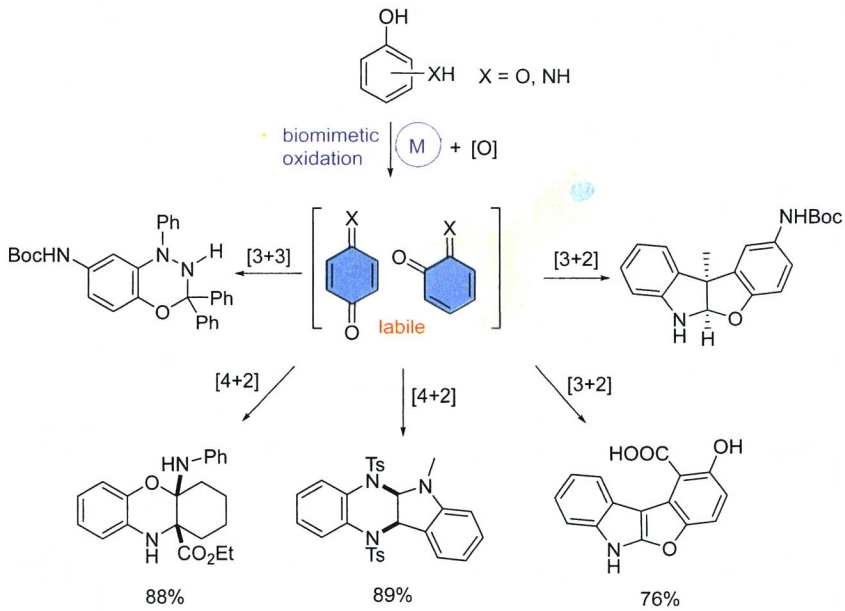
Cover Picture: Recent Advances in Kinetic Resolution of Tertiary Alcohols



Kinetic resolution (KR) in an powerful strategy to access enantioenriched tertiary alcohols, although challenging requirement to distinguish three none-hydrogen substituents has to been fulfilled. The advances of nonenzymatic KR of tertiary alcohols in the last two decades are comprehensively reviewed on page 679 by Chen, Liu and Yang, which are categorized into three parts: asymmetric protection of the hydroxy group, asymmetric intramolecular cyclizations of the hydroxy group and non-hydroxy group involved asymmetric transformations.

ACCOUNT

Reactivity Modulation of Labile Quinones and Biomimetic Catalytic Transformations



Zuo, Honghua; Zhong, Fangrui*

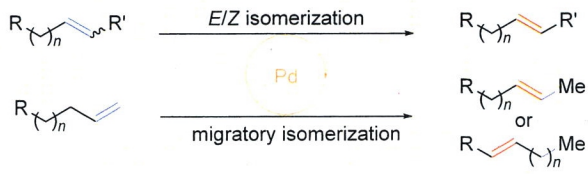
Chin. J. Org. Chem. **2022**, *42*(3), 665

By taking a biomimetic catalytic oxidation strategy, we have developed oxidation systems comprising metal catalysts and green terminal oxidants that realized *in situ* oxidation of phenols and reactivity modulation of labile quinone intermediates. In this account, our recent advances in reactivity modulation of labile quinones/quinone imines and their biomimetic catalytic transformations are summarized.

CONTENT

REVIEWS

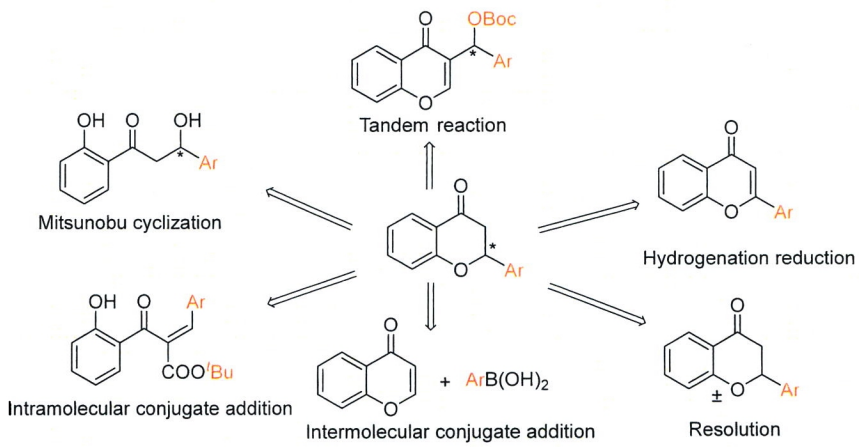
Pd-Catalyzed Isomerization of Alkenes



Chen, Hong-Chao; Wu, Yichen; Yu, Yang; Wang, Peng*
Chin. J. Org. Chem. **2022**, *42*(3), 742

The palladium catalyzed stereoselective (*Z*/*E*) and the positional selective isomerization reactions of alkenes, the detailed mechanistic perspectives and their synthetic applications in the synthesis of drug molecules and natural products are summarized.

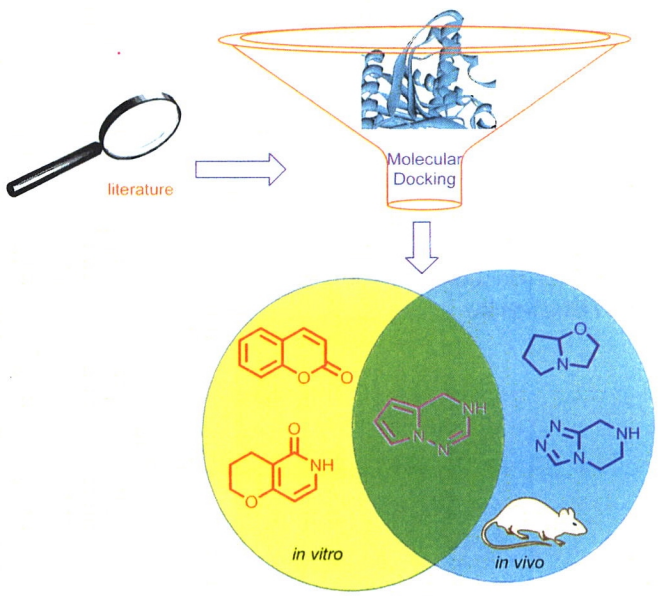
Research Progress on Asymmetric Synthesis of Flavanones



Wang, Lihua; Gong, Xushun; Lei, Ting; Jiang, Shizhi*
Chin. J. Org. Chem. **2022**, *42*(3), 758

The asymmetric synthesis methods of flavanones are reviewed in recent years. The synthesis methods include carbonyl reduction and chiral resolution of raceme, formation of carbon-carbon bonds, formation of carbon-heterobonds and other types of synthesis methods.

Research Progress on the Synthesis and Structure-Activity Relationship of Five Hypoglycemic Active Heterocycles Based on Dipeptidyl Peptidase 4 (DPP-4) Target Design



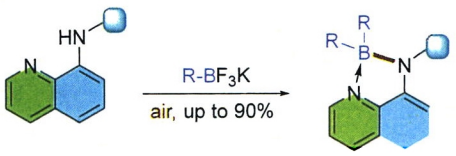
Kong, Yuanfang; Yang, Bin; Zhuang, Yan; Zhang, Jingyu; Sun, Demei*; Dong, Chunhong*
Chin. J. Org. Chem. **2022**, *42*(3), 770

According to the systematic literature review, the potential heterocyclic structures with hypoglycemic activity are summarized, and through computer molecular simulation docking, five kinds of heterocyclic structures with high hypoglycemic activity and easy synthesis are finally screened out based on DPP-4 target design. The synthesis routes and structure-activity relationships are summarized and analyzed, which provides a research basis for the development of safe, efficient and novel hypoglycemic drugs for DPP-4 inhibitors in the future.

CONTENT

ARTICLES

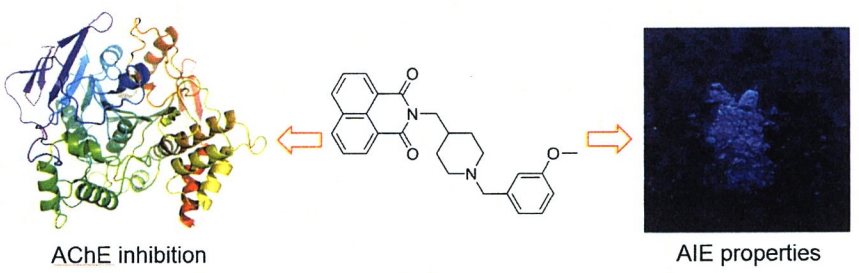
Synthetic and Computational Study of Four-Coordinate *B*,*B*-Diaryl 8-Aminoquinolate Complexes



Ding, Siyi; Zu, Weisai; Miao, Zongcheng*; Xu, Liang*
Chin. J. Org. Chem. **2022**, *42*(3), 812

A series of aminoquinolate-framed diarylboron complexes were obtained, using stable and commercially available aryl trifluoroborate potassium salts as the source of the diaryl units.

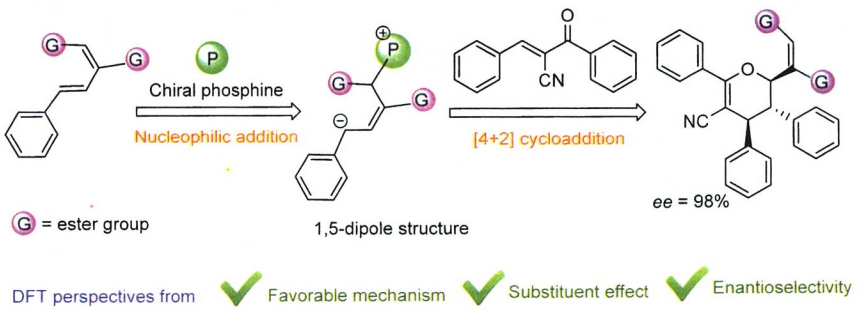
Synthesis of Naphthalimide Derivatives as Cholinesterase Inhibitors with Aggregation Induced Emission Properties



Zhao, Yongmei; Mu, Yeshu; Luo, Wen*; Tian, Zhiyong*
Chin. J. Org. Chem. **2022**, *42*(3), 819

A series of naphthimide derivatives were synthesized as AChE inhibitors. These derivatives showed potent AChE inhibitory activity and exhibited aggregation induced emission properties.

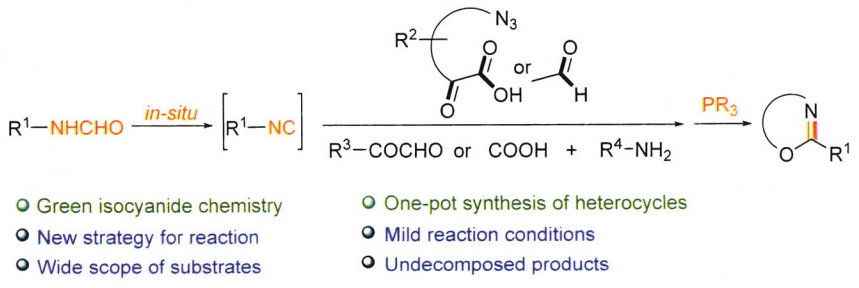
Density Functional Theory Study on the Mechanism of Organophosphine-Catalyzed [4+2] Cycloaddition Reaction



Li, Zheng; Gu, Yingchun*; Xu, Dazhen; Fei, Xuening; Zhang, Lei*
Chin. J. Org. Chem. **2021**, *41*(3), 830

The mechanism of chiral phosphine-catalyzed [4+2] cycloaddition between dienes and enones was explored by density functional theory (DFT) calculations. The plausible mechanism was disclosed and the enantioselectivity was analyzed both energetically and structurally. Lastly, the substituent effects concerning the diene substrate were investigated.

Ugi Four-Component Reaction Based on in-situ Capture of Isocyanide and Post-Modification Tandem Reaction: One-Pot Synthesis of Nitrogen Heterocycles

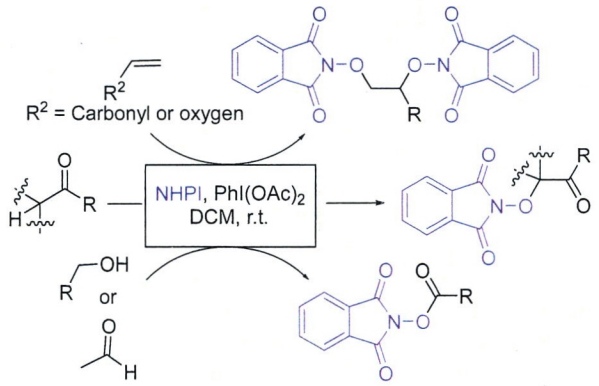


Luo, Xianghao; Xie, Yibi; Huang, Nianyu; Wang, Long*
Chin. J. Org. Chem. **2022**, *42*(3), 838

A novel strategy of Ugi four-component and post-modification tandem reaction based on *in-situ* capture of isocyanide is reported in this paper. According to this reaction strategy, the isocyanide was prepared *in situ* and immediately captured to participate in Ugi four-component reaction and the subsequent modification tandem reaction.

CONTENT

Iodine(III)-Promoted Oxidative Cross-Coupling Reactions of C—H Bonds via a Free Radical Process

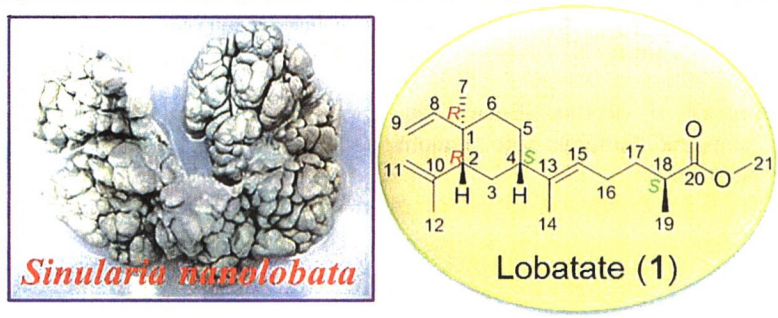


A metal-free oxidation coupling reaction of various C=C/C—H reagents such as olefins, ketones, esters, aldehydes and alcohols with *N*-hydroxy phthalimide (NHPI) has been developed using iodobenzene diacetate (PIDA). The method refers to radical cross coupling mechanism and it has the characteristics of mild conditions, good compatibility and wide substrate scope.

Wu, Fufang; Li, Xuejian; Jia, Hao; Han, Xuanzhen; Shen, Xiaobao*
Chin. J. Org. Chem. **2022**, *42*(3), 884

NOTES

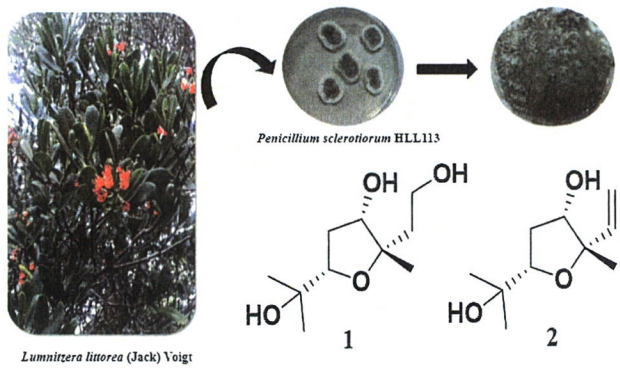
Chemical Constituents of *Sinularia nanolobata* from the South China Sea



A new prenylelemane-type diterpenoid, named lobatate (**1**), and nine known compounds (**2**～**10**) were isolated from the Sanya soft coral *Sinularia nanolobata*, which were collected from the Ximao Island, Sanya, Hainan Province, China. Their structures were elucidated by using comprehensive spectroscopic methods.

Zeng, Zirong; Zhang, Mengmeng; Wang, Hong; Li, Jia; Guo, Yuewei*; Su, Mingzhi*
Chin. J. Org. Chem. **2022**, *42*(3), 891

Study on the Secondary Metabolites of Endophytic *Penicillium sclerotiorum* HLL113



Two new furan derivatives, (2*S*,3*S*,5*S*)-2-(2-hydroxyethyl)-3-hydroxy-5-(2-hydroxypropan-2-yl)-2-methyltetrahydrofuran (**1**), (2*S*,3*S*,5*S*)-2-allyl-3-hydroxy-5-(2-hydroxypropan-2-yl)-2-methyltetrahydrofuran (**2**), together with six known steroid compounds were isolated from *Penicillium sclerotiorum* HLL113. 6,9-Epoxy-ergosta-7,22-dien-3-ol (**5**) was isolated from the genus *Penicillium* for the first time. Their structures were elucidated on the basis of extensive spectroscopic methods. The test results of α-glucosidase inhibitory activity showed that (22*E*,4*R*)-ergosta-7,9(11),22-triene- 3β,5α,6β-triol (**7**) and derrisisoflavone K (**8**) have significant inhibitory activity.

Yang, Jing-Yu; Tang, Min-Min; Chen, Li; Lai, Xin-Yi; Zhuo, Xin; Zhou, Xue-Ming*; Chen, Guang-Ying*
Chin. J. Org. Chem. **2022**, *42*(3), 896

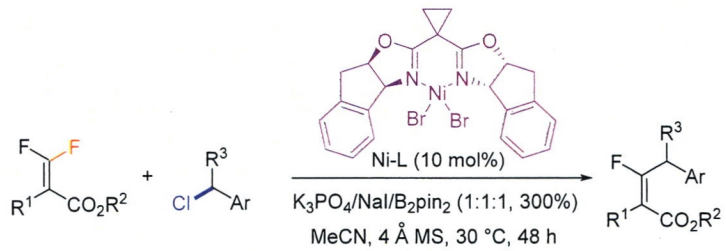
CONTENT

HIGHLIGHTS

Nickel-Catalyzed Stereo- and Enantioselective Cross-Coupling of *gem*-Difluoroalkenes with Carbon Electrophiles by C—F Bond Activation

Ye, Cheng; Gong, Hegui*

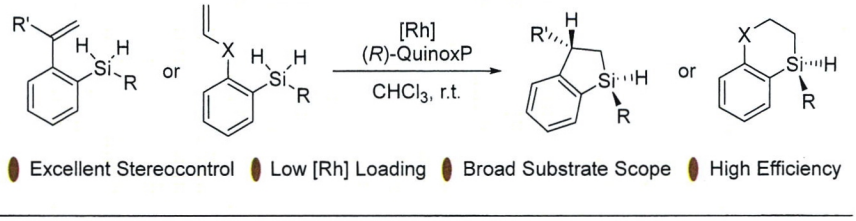
Chin. J. Org. Chem. **2022**, *42*(3), 915



Rhodium-Catalyzed Enantioselective Intramolecular Hydrosilylation to Access Silicon-Stereogenic Tertiary Hydrosilanes

An, Kun; He, Wei*

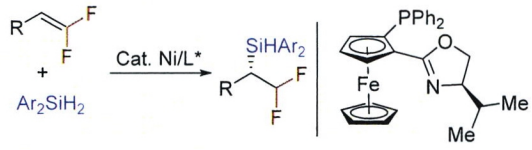
Chin. J. Org. Chem. **2022**, *42*(3), 918



Nickel-Catalyzed Enantioselective Hydrosilylation of *gem*-Difluoroalkenes with Silanes

Chen, Jianqiang; Wu, Jie*

Chin. J. Org. Chem. **2022**, *42*(3), 921



Photochemical Synthesis of Aroylated Heterocycles under Catalyst and Additive Free Conditions

Chen, Zele; Xuan, Jun*

Chin. J. Org. Chem. **2022**, *42*(3), 923