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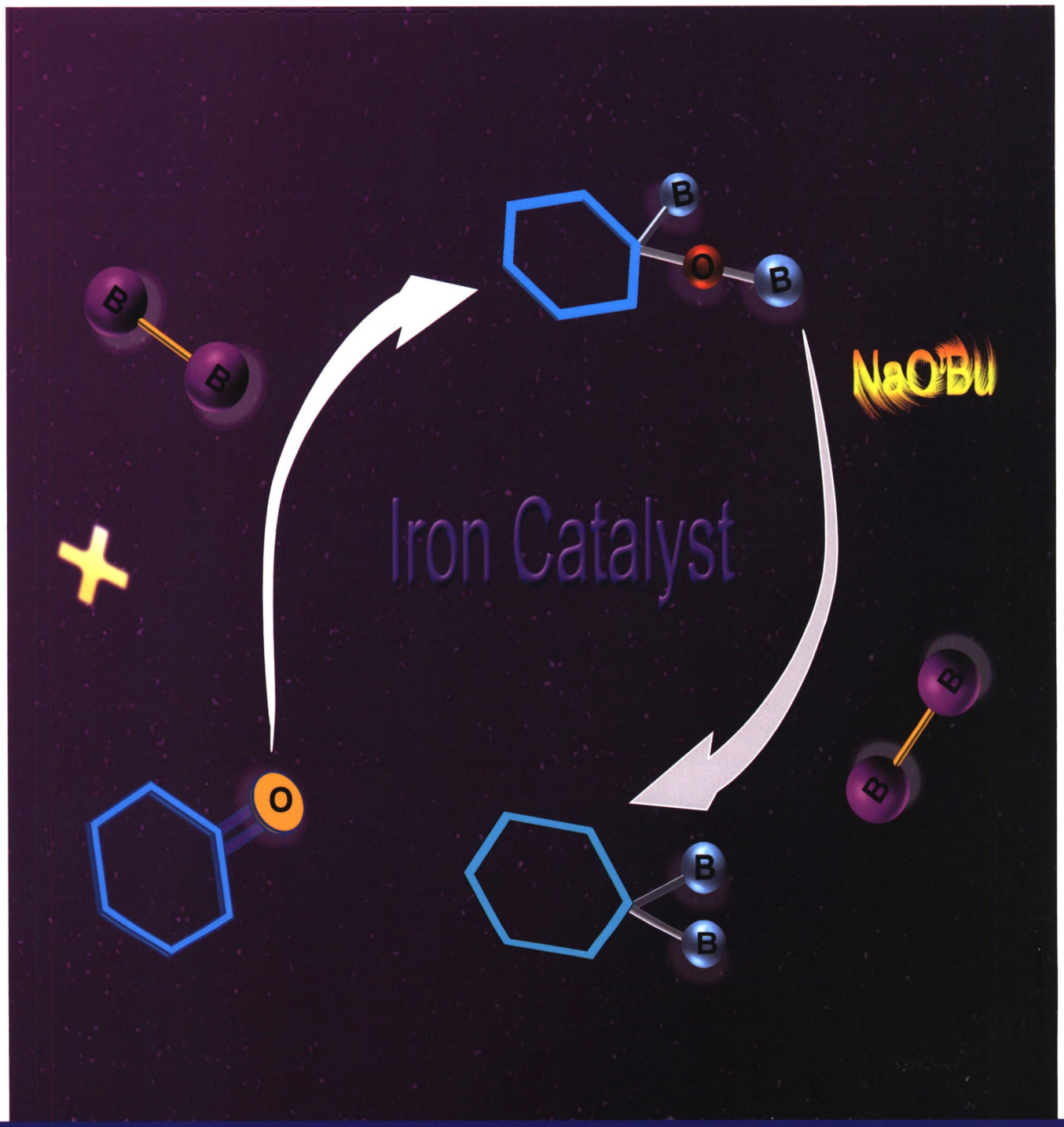

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(YOUJI HUAXUE)

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综述与进展

研究论文

* 通讯联系人.

研究简报

亮点述评

Chinese Journal of Organic Chemistry

Vol. 39 No. 12 December 2019

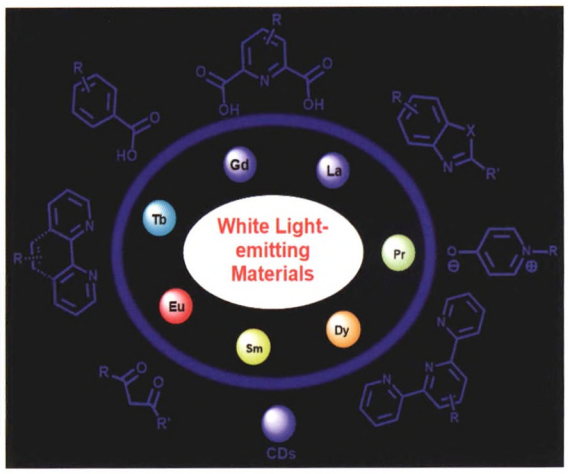
On the Cover

An Iron catalyzed deoxygenative diborylation of ketones to access a variety of *gem*-diboronates has been developed. In this reaction, the commercial available B_2pin_2 was used as boron source. Mono- or di-functionalization of such internal *gem*-diboronate has also been explored to demonstrate the synthetic potential of internal *gem*-diboronates by He, Fan, Xu, Hu, Wang, Wu, Xia and Liu on page 3438.

REVIEWS

CONTENT

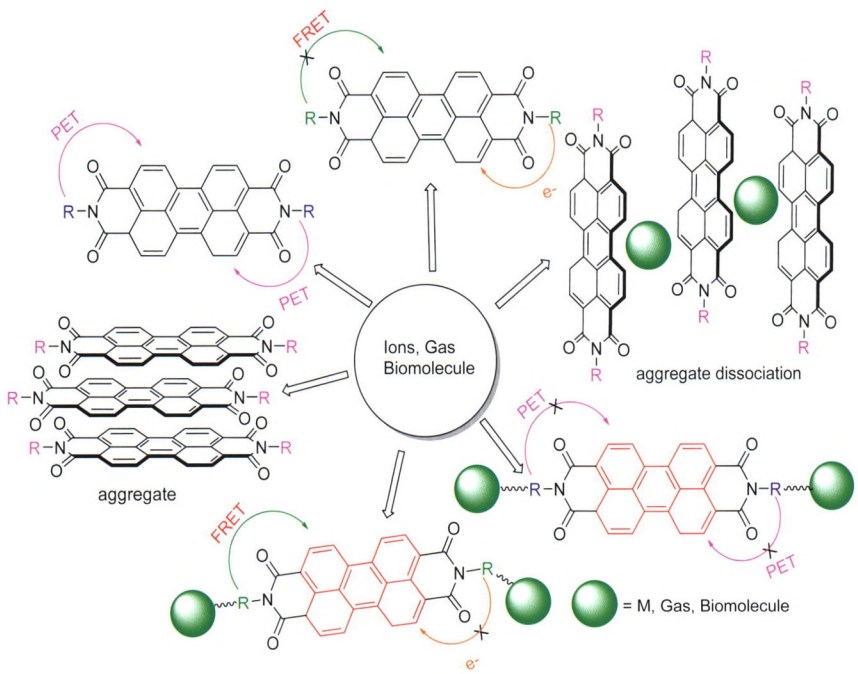
Research Progress in the White Light-Emitting Lanthanide-Based Complex/Coordination Polymer Materials



Wang, Jun*; Li, Xiaocheng; Chu, Hongtao; He, Jinjun; Chen, Zhijiao
Chin. J. Org. Chem. **2019**, *39*(12), 3399

Recent progress in color-tunable and white light-emitting lanthanide-based complex/coordination polymer materials is reviewed, and the development tendency of the materials is prospected.

Progress of Fluorescent Probes with Perylene Tetracarboxylic Diimide as Chromophore

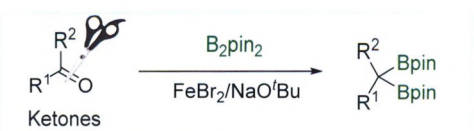


Shi, Yan*; Yu, Youwei; Xue, Lin; Wang, Yanfeng*
Chin. J. Org. Chem. **2019**, *39*(12), 3414

Perylene tetracarboxylic diimide derivatives (PDIs) have excellent photothermal stability, chemical stability, high fluorescence quantum yield, large stokes shift and easy modification. Therefore, it can be used as an excellent fluorophore. PDI as a chromophore in fluorescent probes is utilized for the detection of ion-detection, gas detection, biomolecules *et al*. Recent progress of the PDI as chromophore in fluorescent probes is reviewed.

ARTICLES

Iron-Catalyzed Deoxygenative Diborylation of Ketones to Internal *gem*-Diboronates

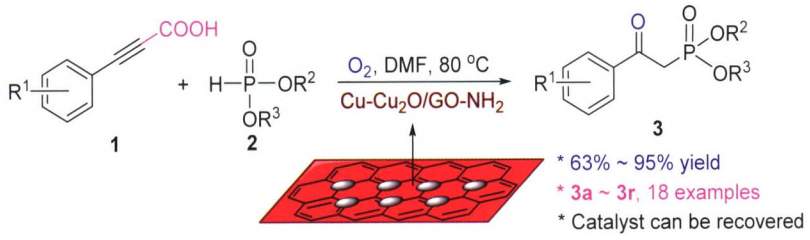


He, Zeyu; Fan, Min; Xu, Jia'neng; Hu, Yue; Wang, Lu; Wu, Xudong; Xia, Chungu; Liu, Chao*
Chin. J. Org. Chem. **2019**, *39*(12), 3438

An iron catalyzed deoxygenative diborylation of ketones to access a variety of internal *gem*-diboronates has been developed. A scale-up synthesis of such *gem*-diboronates is also applicable under this condition.

CONTENT

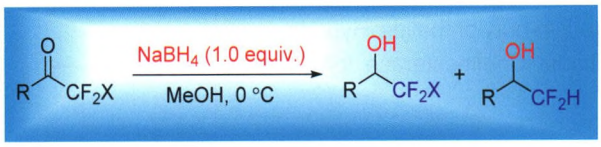
Decarboxylative Oxyphosphorylation of Alkynyl Carboxylic Acids with *H*-Phosphonates Catalyzed by Cu-Cu_2O/GO-NH_2



Zhong, Wenwu; Tang, Qian; Yang, Zongfa; Zeng, Xue; Gan, Linling; Lan, Zuoping*; Yang, Yuanjuan*
Chin. J. Org. Chem. **2019**, *39*(12), 3467

A graphene-based hybrid with copper nanoparticles (Cu-Cu_2O/GO-NH_2) as heterogeneous catalyst was investigated for the aerobic decarboxylative oxyphosphorylation of alkynyl carboxylic acids with *H*-phosphonates. This Cu-Cu_2O/GO-NH_2 catalyst showed high catalytic activity, good recyclability and easy separability, providing an alternative strategy for the synthesis of *β*-ketophosphonates.

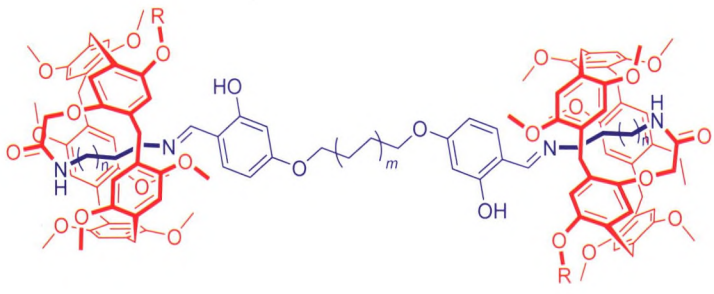
A Convenient Synthesis of *β*,*β*-Difluoro-*β*-iodo-1-phenylethan-1-ols



Huang, Guozhi; Ren, Jie; Zheng, Xiaoxiao; Wu, Fanhong*; Wu, Jingjing*
Chin. J. Org. Chem. **2019**, *39*(12), 3475

The synthesis of *α*,*α*,*α*-iodo-difluoromethyl alcohols via the high selective reduction of iododifluoromethyl ketones by $NaBH_4$ in methanol at 0 ℃ was reported. The reaction has some advantages, such as mild condition, simple synthetic route, and high yield. A convenient way to synthesize more difluoromethylation agents was provided.

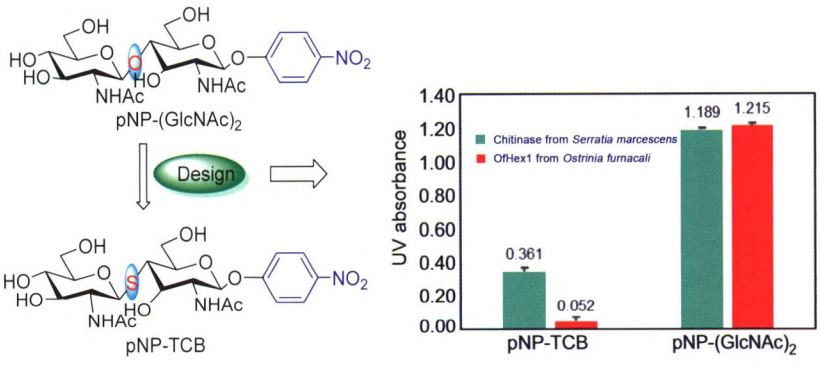
Design and Construction of Pillar[5]-arene-Based Bis-[1]rotaxane



Zhang, Runmiao; Wang, Chenwei; Sun, Jing; Yan, Chaoguo*; Yao, Yong*
Chin. J. Org. Chem. **2019**, *39*(12), 3483

A series of pillar[5]arene-baed mechanically interlocked molecules (MIMs) of bis-[1]-rotaxane were successful constructed

Synthesis and Enzyme Substrate Activity of *p*-Nitrophenyl *N*,*N*′-Diacetyl-4-thio-*β*-chitobioside

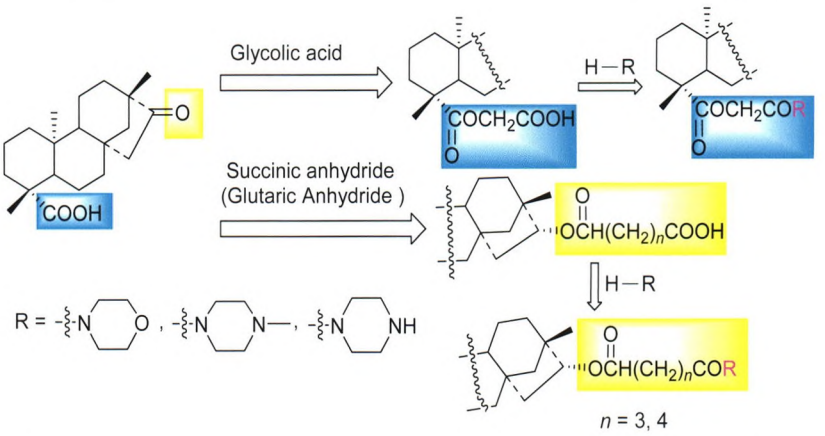


Guo, Bingbo; Shen, Shengqiang; Jin, Shuhui*; Lu, Huizhe; Zhang, Jianjun*
Chin. J. Org. Chem. **2019**, *39*(12), 3490

Nitrophenyl *N*,*N*′-diacetyl-4-thio-*β*-chitobioside (pNP-TCB) was synthesized. The target compound was evaluated for the degradation of glycoside hydrolase families 18 (GH18) chitinase and 20 (GH20) *β*-*N*-acetylhexosaminidase. The results showed that the pNP-TCB can be degraded by GH18 chitinase, but hardly degraded by GH20 *β*-*N*-acetylhexosaminidase.

CONTENT

Synthesis, Characteristics and Bioactivities of Novel Isosteviol Derivatives

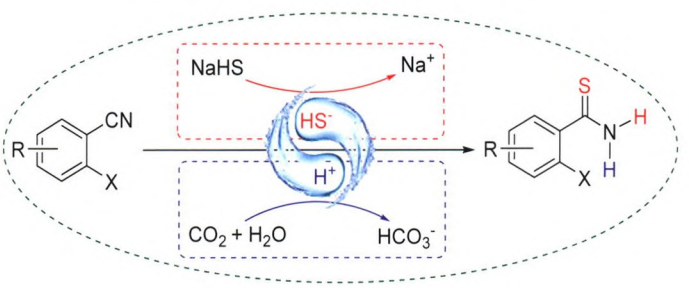


Guo, Yongtai; Hou, Xiyan; Zheng, Changji; Zhao, Chunhui; Jin, Yuting; Gao, Xueqin; Wang, Qian; Sun, Lei; Zhao, Longxuan*; Piao, Hua*

Chin. J. Org. Chem. **2019**, *39*(12), 3532

Fifteen novel isosteviol derivatives were designed and synthesized by introducing morpholine and piperazine moieties into C-16 and C-19 positions through connecting fragments, and the D-ring structure was modified. The inhibitory effects on Colo-16 and A549 were observed. The results showed that the inhibitory activities of 4 compounds on Colo-16 were significantly better than the positive control of 5-fluorouracil.

Synthesis of *o*-Halothiobenzamide Derivatives from the Selective Thiolysis Reaction of *o*-Halobenzonitrile Mediated by CO_2



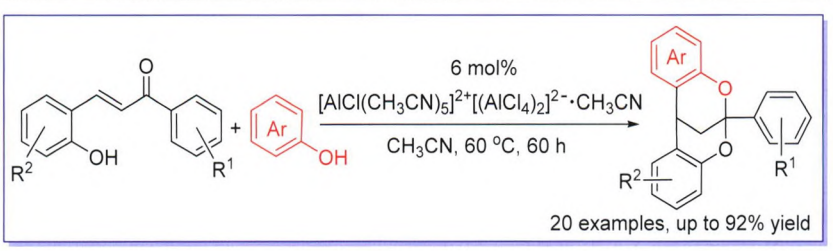
Sang, Guozhi; Feng, Xuetong; Chen, Juan; Li, Shanshan; Li, Zhuona; Li, Xiao; Han, Limin; Hong, Hailong; Zhu, Ning*

Chin. J. Org. Chem. **2019**, *39*(12), 3542

A method for the selective synthesis of *o*-halothiobenzamide by thiolysis reaction of *o*-halobenzonitrile with NaHS under the action of CO_2 was explored. CO_2/H_2O/NaHS was used as a buffer system to provide a suitable pH environment.

NOTES

Cationic Aluminum Complex Catalyzed Synthesis of 2,8-Dioxabicyclo[3.3.1]-nonanes

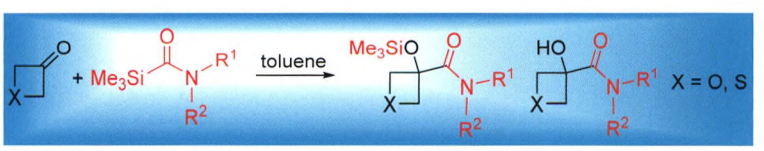


Yang, Minrong; Zhu, Ya'nan; Xu, Fan*

Chin. J. Org. Chem. **2019**, *39*(12), 3550

Cationic aluminum complex $[AlCl(CH_3CN)_5]^{2+}[(AlCl_4)_2]^{2-}\cdot CH_3CN$ can be easily prepared via the reaction of $AlCl_3$ with CH_3CN at room temperature. It served as efficient catalyst for the reaction of 2-hydroxychalcones with naphthols to produce diaryl-fused 2,8-dioxabicyclo[3.3.1]nonanes in moderate to high yields.

Synthesis of 3-Hydroxy-3-heterocyclebutylamide Derivatives Using Carbamoylsilanes as an Amide Source



Zhang, Pengpeng; Chen, Wenwen; Feng, Hua; Chen, Jianxin*

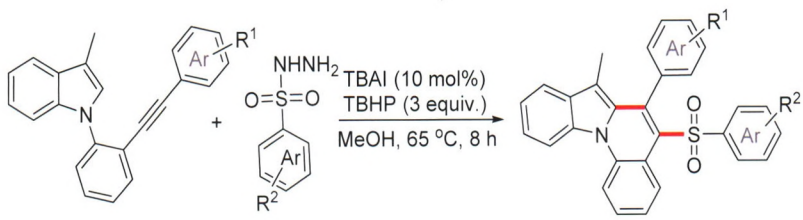
Chin. J. Org. Chem. **2019**, *39*(12), 3560

3-Hydroxy-3-heterocyclebutyl amide derivatives were directly synthesized in 56%～85% yields by the nucleophilic addition of various carbamoylsilanes to oxetane-3-one or thietane-3-one in toluene under mild and catalyst-free conditions. The procedure can prepare 3-hydroxy-3-heterocyclebutyl tertiary, secondary and primary amides by selecting different carbamoylsilanes.

CONTENT

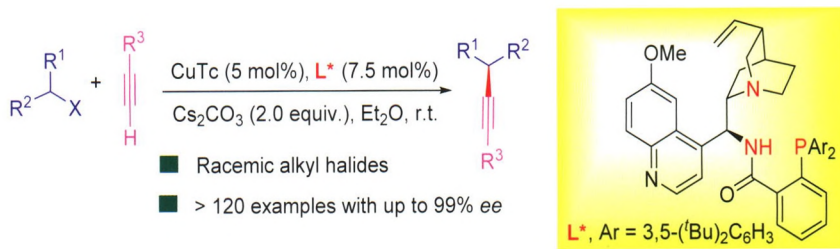
HIGHLIGHTS

Radical Cyclization Strategy towards Indolo[1,2-*a*]quinolines



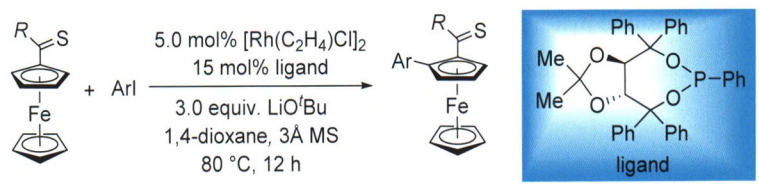
Wang, Zheng; He, Wei-Min*
Chin. J. Org. Chem. **2019**, *39*(12), 3594

Copper Catalyzed Asymmetric Sonogashira Coupling Reaction of Alkyl Halides



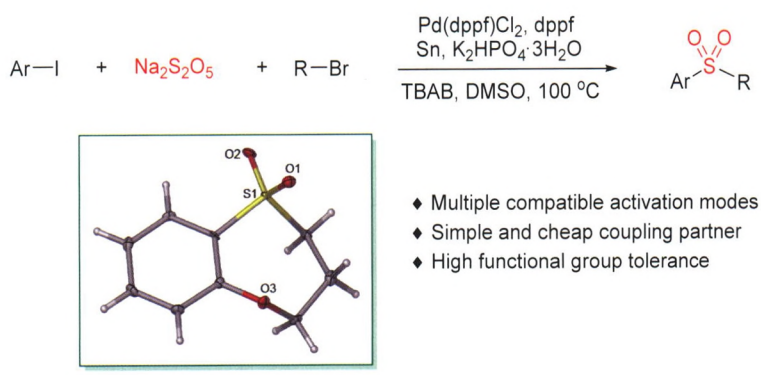
Zhang, Min; Su, Weiping*
Chin. J. Org. Chem. **2019**, *39*(12), 3596

Rh-Catalyzed Asymmetric C—H Activation for the Synthesis of Planar Chiral Ferrocenes



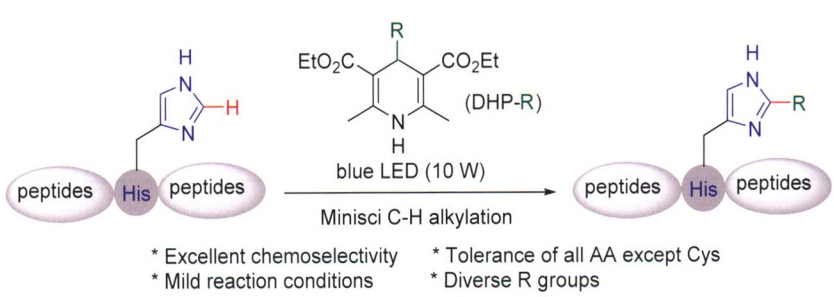
Duan, Wei-Liang*
Chin. J. Org. Chem. **2019**, *39*(12), 3598

Multicomponent Reductive Cross-Coupling Involved by High-Valent Sulfur Salts: Straightforward Construction of Diversely Functionalized Sulfones



Liu, Dong; Mei, Tian-Sheng*
Chin. J. Org. Chem. **2019**, *39*(12), 3600

Visible-Light-Promoted Histidine-Specific Peptide C—H Alkylation



Zhan, Beibei; Shi, Bingfeng*
Chin. J. Org. Chem. **2019**, *39*(12), 3602