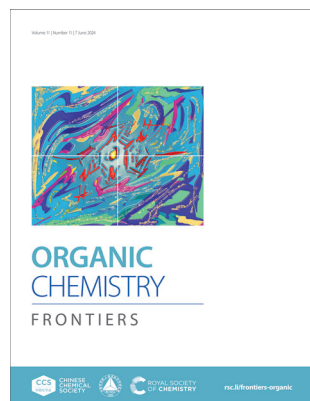


## IN THIS ISSUE

ISSN 2052-4129 CODEN OCFRA8 11(11) 2983–3282 (2024)



## Cover

See A. Stephen K. Hashmi  
et al., pp. 2996–3003.

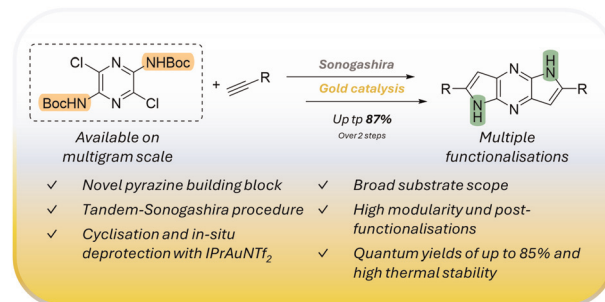
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2024, **11**, 2996.

## RESEARCH ARTICLES

2996

Modular synthetic strategies for  
dipyrrolopyrazines

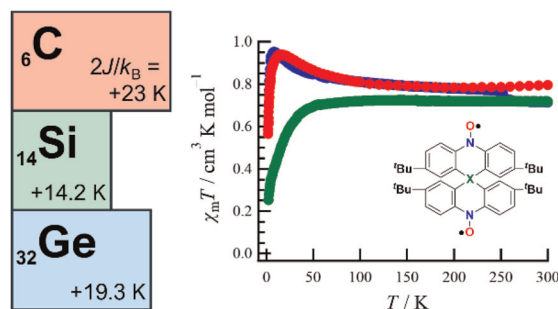
Justin Kahle, Alexandra V. Mackenroth,  
Christopher Hübler, Patrick D. Römgers,  
Paul Schimanski, Petra Krämer, Margit Brückner,  
Thomas Oeser, Frank Rominger, Matthias Rudolph and  
A. Stephen K. Hashmi\*



3004

Spiro-centre substitution effects in the  
intramolecular spin–spin interactions of  
spirobiacridine diradicals

Shinichi Ogawa, Takuya Kanetomo\* and  
Masaya Enomoto\*



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## RESEARCH ARTICLES

3012

**Decarbonylative C(sp<sup>2</sup>)-C(sp<sup>2</sup>) reductive cross-coupling of aroyl fluorides with aryl bromides by palladium/cobalt co-catalysis**

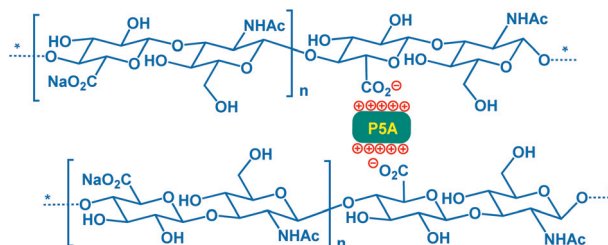
Chen He, Zhiyong Song, Wei Yao, Rui Lin and Yuanhong Ma\*



3019

**Assembly of ionic supramolecular polymers using a decacationic pillar[5]arene to noncovalently crosslink hyaluronic acid for short DNA delivery**

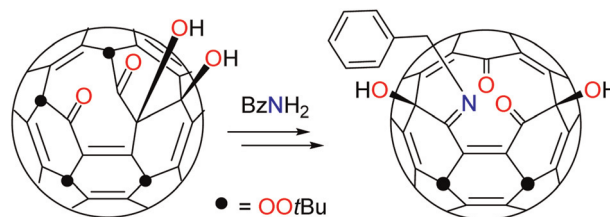
Qian Li, Danying Ma, Yue-Yang Liu, Hui Wang, Wei Zhou, Dan-Wei Zhang\* and Zhan-Ting Li\*



3026

**Selective deletion of one carbon atom from C<sub>60</sub> through benzylamine mediated reactions**

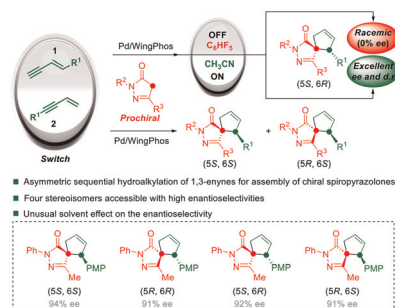
Yaqiong Wang, Yiran Wu, Yuming Yu,\* Jie Su,\* Yi Qiu and Liangbing Gan\*



3033

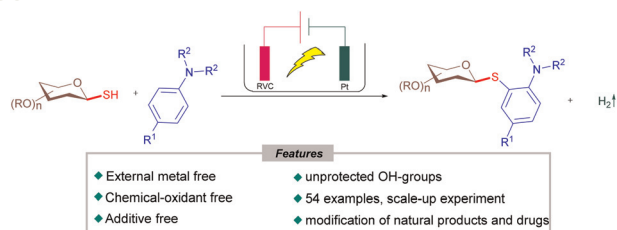
**Stereodivergent synthesis of chiral spiropyrrolones through Pd-catalyzed asymmetric sequential hydroalkylation of 1,3-enynes: unusual solvent effects on the enantioselectivity**

Shan Wang, Long Li,\* Yifei Zheng, Luqing Li, Yingcheng Wang, Fangzhi Peng and Zhihui Shao\*



## RESEARCH ARTICLES

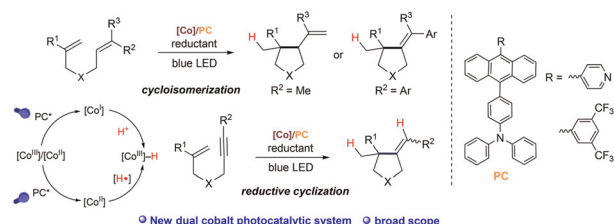
3041



### Electrochemically dehydrogenative C(sp<sup>2</sup>)–H/S–H cross-coupling: efficient synthesis of *ortho*-amino-phenyl thioglycoside derivatives

Li-Yan Hu, Li Zhu, Shen-Yuan Zhang, Yu-Xin Guo, Yuan Li, Jie Zhu\* and Lei Wu\*

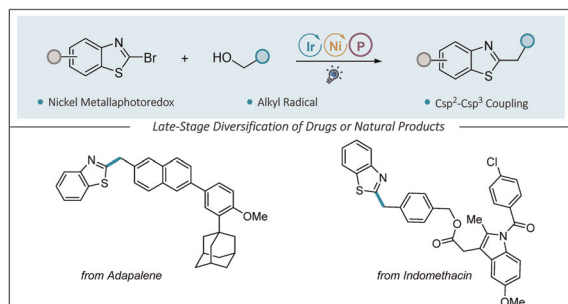
3048



### Cyclization reactions of 1,6-dienes and 1,6-enynes by dual cobalt photocatalysis

Pei-Ting Li, Zi-Fa Shi and Wei Yu\*

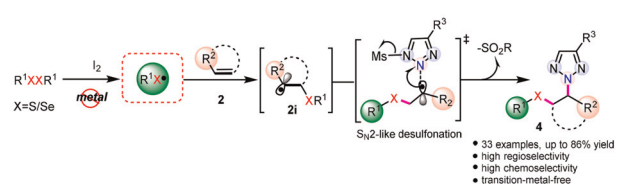
3058



### Nickel metallaphotoredox-catalyzed C–O bond activation/Csp<sup>2</sup>–Csp<sup>3</sup> coupling enabled by phosphine

Jiaxi Fang, Ziheng Jian, Huan Liu, Yuting Wang, Xianbo Yu, Zehuai Mou\* and Huifei Wang\*

3066



### Iodine-catalyzed intermolecular 1,2-thio (seleno) amination of alkenes with 1,2,3-triazoles and disulfides (diselenides) in air

Jian Ji, Xuwen Chen, Zongjing Hu, Cong Guan, Jinhua Liu, Yaqi Deng and Shunying Liu\*

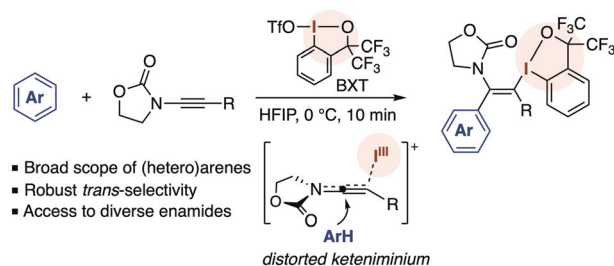


## RESEARCH ARTICLES

3072

### Three-component Friedel–Crafts-type difunctionalization of ynamides with (hetero)arenes and iodine(III) electrophile

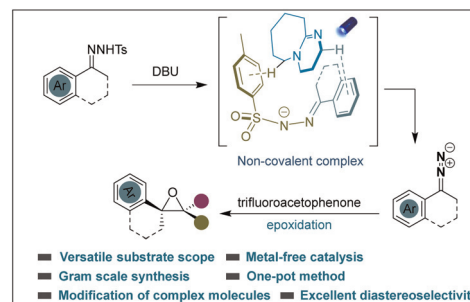
Jun Kikuchi,\* Toya Nagata, Shingo Ito and Naohiko Yoshikai\*



3080

### Visible-light-mediated catalyst-free synthesis of trifluoromethyl(spiro)-epoxides bearing contiguous quaternary centers

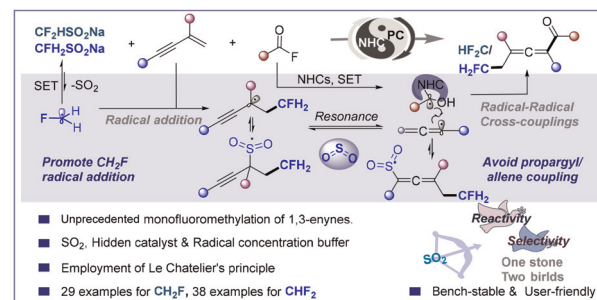
Jingchuan Lin, Yu Zhang,\* Jinxin Wang, Xinyu Han, Shenglan Zhu, Tong Li, Yanping Zhu\* and Wei-Dong Zhang\*



3089

### NHC and photoredox catalysis dual-catalyzed 1,4-mono-/di-fluoromethylative acylation of 1,3-enynes

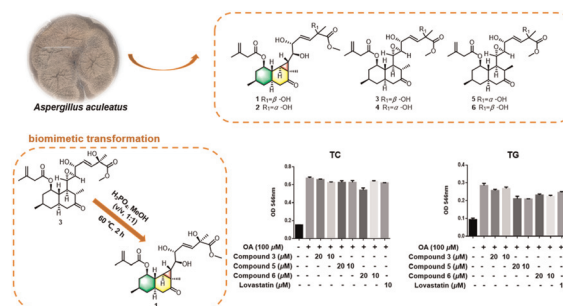
Jiuli Xia, Ruiyang Ma, Lihong Wang, Jiaqiong Sun,\* Guangfan Zheng\* and Qian Zhang



3100

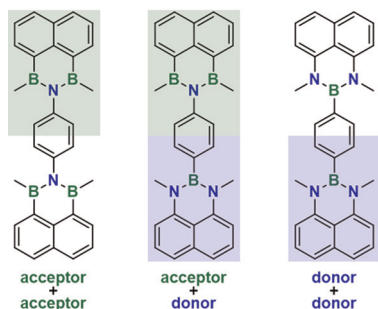
### Aculeatones A and B, epimeric lovastatin derivatives with a 6/6/3-tricyclic carbon skeleton from *Aspergillus aculeatus* and their chemical transformation

Fei Liu, Fengqing Wang, Qin Li, Bingbing Dai, Weiguang Sun, Jianguo Li, Chunmei Chen,\* Yonghui Zhang\* and Hucheng Zhu\*



## RESEARCH ARTICLES

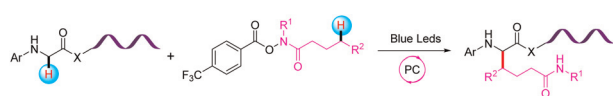
3109



### NBN/BNB-doped phenalenyl homo- and heterodyads: structural uniformity but optoelectronic diversity

Alexander S. Scholz, Thomas Froitzheim,\*  
Michael Bolte, Hans-Wolfram Lerner, Jan-M. Mewes  
and Matthias Wagner\*

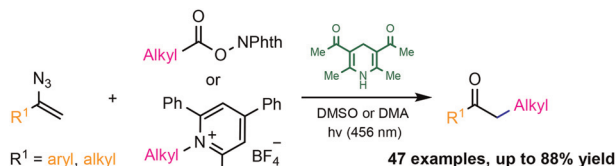
3119



### Base- and metal-free visible-light driven site-selective $\alpha$ -C(sp<sup>3</sup>)-H functionalization reaction of glycine derivatives with hydroxamic acid derivatives

Shiyun He, Hongying Fan, Xue Zhang, Meiling Ye,  
Jian Chen, Jinyu Hou, Tianle Huang, Li Guo,  
Guanghui Lv\* and Yong Wu\*

3124



### Metal-free photoinduced denitrogenative alkylation of vinyl azides with alkyl radicals toward ketones

Hui Yin, Siqi Jian, Xiujuan Feng,\* Ming Bao and  
Xuan Zhang\*

★ Photocatalyst- and metal-free

★ Broad substrate scope

★ Abundant feedstocks

★ Late-stage modification

3131



- ✓ One-pot    ✓ Cheap copper salt catalyst    ✓ Air as the oxidant
- ✓ Commercially available materials    ✓ Excellent FG tolerance
- ✓ Construction of quaternary carbons from secondary C(sp<sup>3</sup>)-H

### Copper-catalyzed oxidative sulfenylation and alkylation of indolin-2-ones for direct construction of sulfur-substituted quaternary carbons

Yun-Hao Zhang, Yi-Nuo Wang, Zi-Yu Liu,  
Si-Han Zheng, Guang-Lin Li, Dexin Feng\* and  
Da-Zhen Xu\*

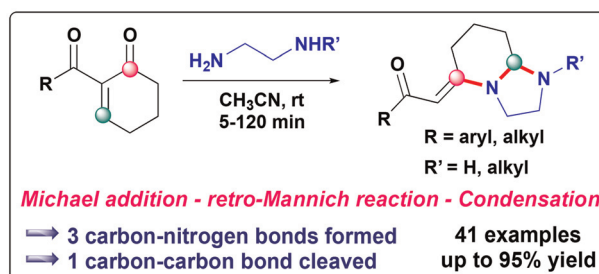


## RESEARCH ARTICLES

3137

### A retro-Mannich mediated transformation of Morita–Baylis–Hillman ketones to saturated imidazo[1,2-*a*]pyridines

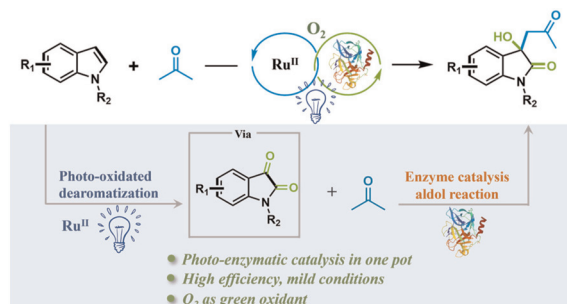
Sachin Sharma, Ajit Kumar Jha and Srinivasan Easwar\*



3151

### Development of a photoenzymatic one-pot hybrid system for the direct synthesis of 3,3-disubstituted indole-2-ones from *N*-methyl indoles

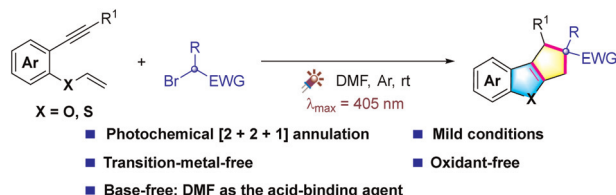
Yao Yao, Yuan Yu, Ming-Liang Shi, Xin-Yue Fan, Ru-De Lin, Kun Li, Wen-Dian Li, Fei-Yan Tao\* and Na Wang\*



3160

### Photochemical [2 + 2 + 1] annulation of 2-vinyloxy arylalkynes with bromomalonates via energy transfer

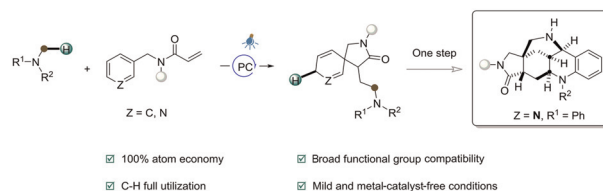
Shuo Tang, Jiupeng Liu, Min Zhang, Dan Wang, Yong Wang,\* Jingjing Zhao\* and Pan Li\*



3165

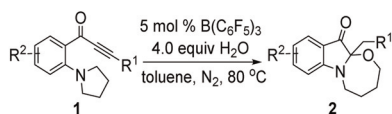
### Fully atom-economic access to spiro-cyclic skeletons through photoredox-induced hydrogen transfer/Giese addition/dearomative cyclization/protonation cascade

Guohui Zeng, Hui Luo, Kai Jiang, Jianpeng Cai and Biaolin Yin\*



## RESEARCH ARTICLES

3173

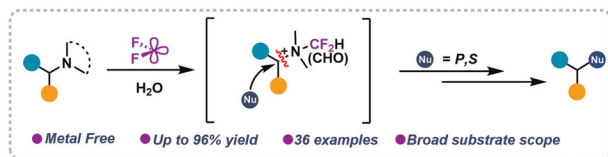


- Transition metal free
- Double hydride Shift
- 21 examples up to 86% yield
- Pyrrolidine ring expansion
- Mild reaction conditions
- Atom- and step-economical

### Synthesis of oxindole fused 1,3-oxazepanes via hydride transfer initiated ring expansion of pyrrolidine

Peng He, Zongkang Wang, Qiongwen Kang, Nana Fei, Chengyu Wang\* and Yanzhong Li\*

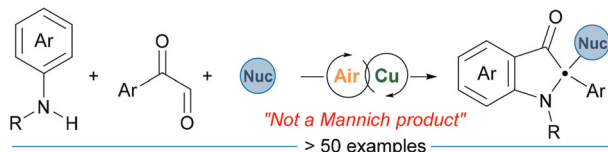
3179



### Expedient deaminative phosphorylation and sulfonylation of benzylic tertiary amines enabled by difluorocarbene

Chengbo Li, Yu Guo, Jianke Su, Xinyuan Hu, Qingqing Xuan\* and Qiuling Song\*

3186

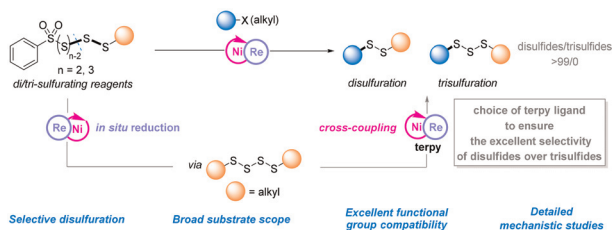


- Nuc =
- ✓ Excellent Chemical Selectivity
  - ✓ Easily Accessible Substrates
  - ✓ Good Functional Group Tolerance
  - ✓ Structurally Valuable Products

### Diverting the Mannich reaction to access 2,2-disubstituted indolin-3-ones by merging 1,2-aryl migration and copper-catalyzed aerobic oxidation

Jia-Chen Xiang,\* Yu-Die Wang, Peng Yuan, Hui-Min Zhu, Tong Lei, An-Xin Wu\* and Zhixin Liao\*

3196



### Selective nickel-catalyzed disulfuration of alkyl halides with di/trithiosulfonates

Lulu Liu, Jiaqi Hou, Yingying Ma, Hongwei Wang, Yu Zhong, Fangcan Liang, Luyao Wang, Qingling Wang,\* Ji-Quan Liu, Wen-Hua Xu and Dianhu Zhu\*

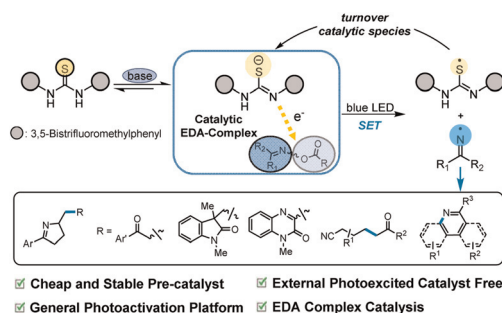


## RESEARCH ARTICLES

3204

### Thiourea as a precatalyst for the electron donor–acceptor complex photoactivation platform of oxime esters

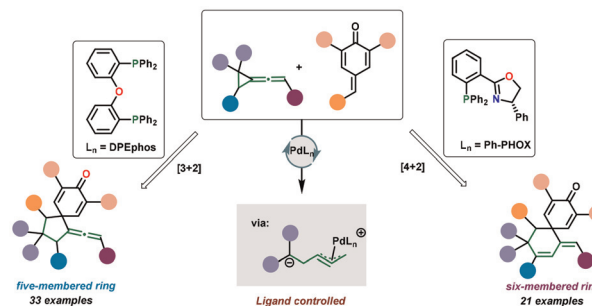
Haichen Mao, Yuting Zhang, Hengrong Cao, Qianqian Shi,\* Yu Lan, Junbiao Chang\* and Bo Zhu\*



3214

### Palladium-catalyzed and ligand-controlled divergent cycloadditions of vinylidenecyclopropane-diester with *para*-quinone methides enabled by zwitterionic $\pi$ -propargyl palladium species

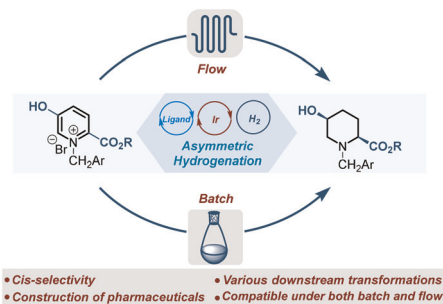
Jia-Hao Shen, Yong-Jie Long, Min Shi and Yin Wei\*



3225

### Iridium-catalyzed asymmetric hydrogenation of 5-hydroxypicolinate pyridinium salts under batch and flow: stereodefined access to *cis*-configured hydroxypiperidine esters

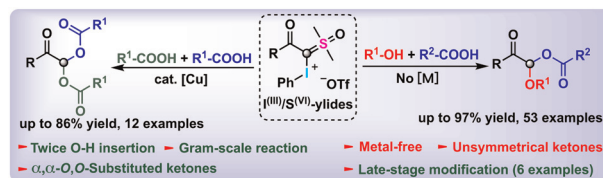
Zhi Yang, Shangxian Luan, Linxi Wan, Jingxi Chen, Xiaofang Wei, Pei Tang\* and Fen-Er Chen\*



3234

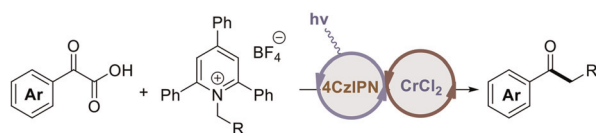
### Metal-free cascade O–H double insertion between I<sup>(III)</sup>/S<sup>(VI)</sup>-ylides, carboxylic acids, and alcohols: modular access to unsymmetrical $\alpha,\alpha$ -O,O-substituted ketones

Jiaohang Wei, Wen-Xuan Zou, Qiong Hu, Mei-Zhu Bao, Dan-Ting Shen, Lin Xiao, Jia-Lin Song, Xiang Liu\* and Shang-Shi Zhang\*



## RESEARCH ARTICLES

3242

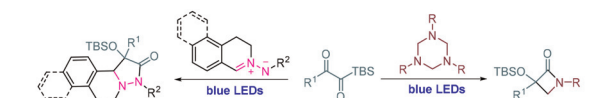


● cheap acyl source ● operationally simple ● gram scale ● mild conditions

### Cr-mediated photocatalytic decarboxylative coupling of $\alpha$ -oxo acids with benzylic pyridinium salts

Jia Cao,\* Yan Liu, Zhixiang Wang and Le Liu

3250

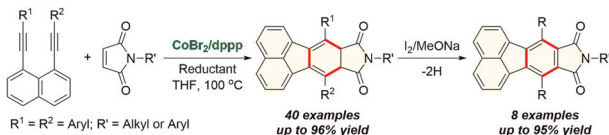


✓ Catalyst-free and mild reaction condition ✓ Novel ketene species precursors ✓ Visible-light photoactivation  
✓ Continuous flow for gram-scale synthesis ✓ Potential valuable heterocycles ✓ [1,3]-Brook rearrangements

### Visible-light-induced [1,3]-Brook rearrangements of $\alpha$ -ketoacylsilanes and their subsequent trapping in a tandem annulation with 1,3,5-triazinanes and azomethine imines

Zhong Zhang, Sirui Wu, Yuqiao Zhou, Bao-Lin Li, Siyue Xiao, Xiaohu Zhao\* and Zhipeng Yu\*

3257

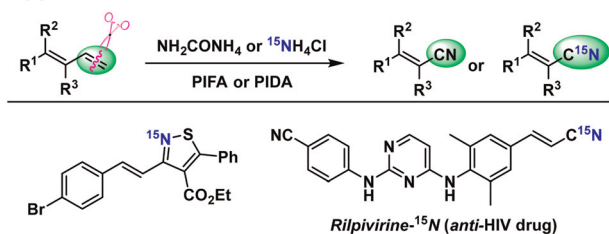


✓ earth-abundant metal as the catalyst ✓ electron-deficient alkenes  
✓ high efficiency ✓ wide substrate scope  
✓ good atom economy ✓ easy scale-up

### Concise synthesis of succinimide-fused 1,3-cyclohexadienes via Co-catalyzed [2 + 2 + 2] cycloaddition of 1,6-diynes and maleimides

Kaili Cen, Ziyi Zhai, Yuan Liu, Jiahao Wei, Mixia Ouyang, Guojun He, Shuyu Huang, Feng Zhao\* and Jinhui Cai\*

3263



### Regioselective oxidative cleavage of conjugated dienes to access $\alpha,\beta$ -unsaturated nitriles

Yuqing Fu, Yijia Leng, Haotong Bai, Jiaxi Xu\* and Ning Chen\*



3270

## Site-selective C(sp<sup>3</sup>)-H functionalization of primary aliphatic amines

Ye Tao, Kaige Guo, Hao Chen, Guobing Yan\* and Ming Guo\*

