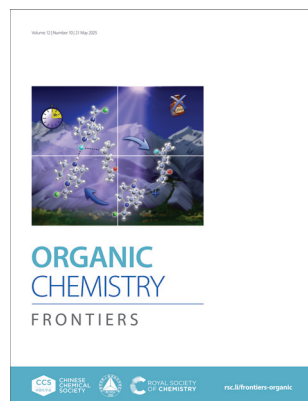


### IN THIS ISSUE

ISSN 2052-4129 CODEN OCFRA8 12(10) 3147–3314 (2025)



#### Cover

See Shahboz Yakubov and Joshua P. Barham, pp. 3156–3162.

Image reproduced by permission of Joshua P. Barham from *Org. Chem. Front.*, 2025, **12**, 3156.

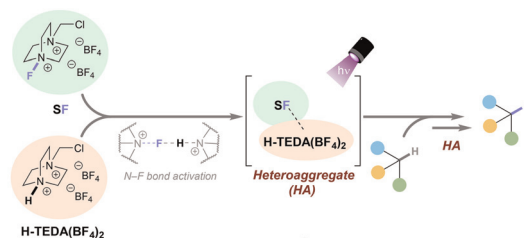
Image created by Sarah S. Coutts.

### RESEARCH ARTICLES

3156

#### Protodefluorinated Selectfluor® heteroaggregate photoinduces direct C(sp<sup>3</sup>)–H fluorinations without photocatalyst

Shahboz Yakubov and Joshua P. Barham\*



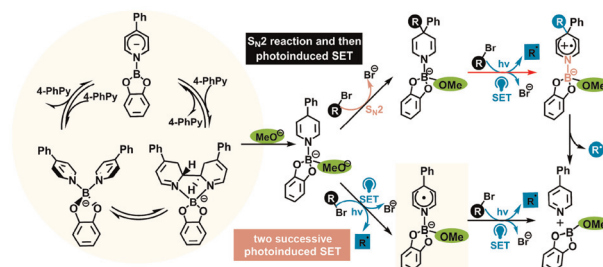
#### Salient Advantages for C(sp<sup>3</sup>)–H Fluorination

- Photocatalyst-free ✓
- Sustainable use of waste ✓
- Scalable ✓
- Simple preparation ✓
- Higher yields, faster reactions vs prior methods ✓
- Inexpensive, stable, safe reagents ✓
- Substrate as limiting reactant, simple purification ✓
- Dry solvent not required ✓

3163

#### A DFT investigation of the mechanism of photoinduced radical borylation of alkyl bromides: elucidation of base-mediated photoinduced SET and S<sub>N</sub>2 processes

Nana Ma,\* Qiongjin Wang, Die Zhao, Bowen Duan, Shujun Li\* and Guisheng Zhang\*



# RSC Applied Interfaces

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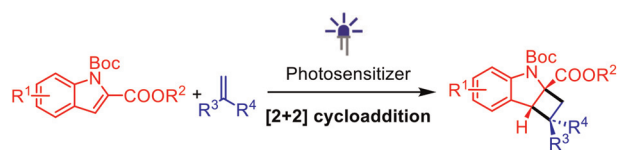
Fundamental questions  
Elemental answers

## RESEARCH ARTICLES

3177

### Photocatalytic intermolecular [2 + 2] cycloaddition/dearomatization of indoles: easy access to cyclobutane-fused indolines

Zeng Han, Lianhui Wang, Yuanqi Luo and Xiuling Cui\*



- More than 50 examples
- Mild reaction conditions and metal free photocatalyst
- **High chemo-, regio-, and stereoselectivity**
- **Excellent atom economy and step economy**

3184

### A copper-catalyzed enantioselective cycloaddition/amination cascade of azomethine imines, alkynes and *O*-benzoylhydroxylamines

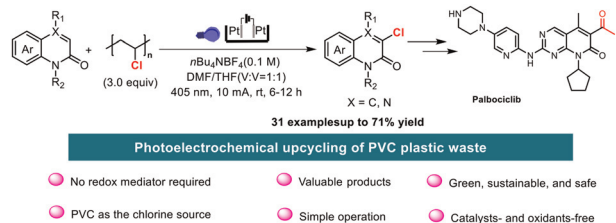
Tai-Gang Fan, Bo-Xun Sun, Wei Jiang, Jia Hu, Li-Bo Yang, Yuan Qu and Ya-Min Li\*



3191

### Photoelectrochemical upcycling of PVC plastic waste for the synthesis of chlorinated quinolinone derivatives

Kai Zheng, Jingwen He, Lixi Zhang, Zhaoyang Wang, Pengfei Zhang, Jianyu Cao\* and Chao Shen\*

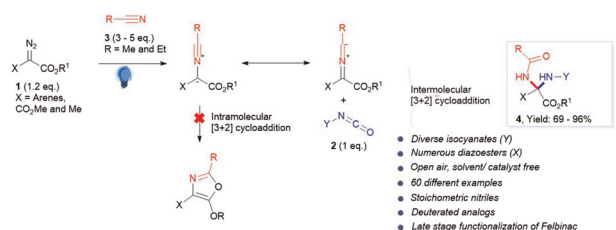


- Photoelectrochemical upcycling of PVC plastic waste**
- No redox mediator required
  - Valuable products
  - Green, sustainable, and safe
  - PVC as the chlorine source
  - Simple operation
  - Catalysts- and oxidants-free

3198

### Interrupted intramolecular [3 + 2] to 5-*endo-dig* cyclization: [3 + 2] cycloaddition of nitrile ylides of diazo esters: photo-induced solvent-free *gem*-diamination to synthesize $\alpha$ -amino- $\alpha$ -substituted $\alpha$ -amino esters

Haya Khan, Yashika Tyagi, Roopam Pandey, Pranoy Menon and Subhabrata Sen\*

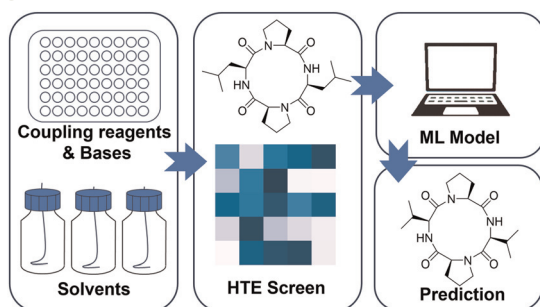


- Diverse isocyanates (*Y*)
- Numerous diazoesters (*X*)
- Open air, solvent/ catalyst free
- 60 different examples
- Stoichiometric nitriles
- Deuterated analogs
- Late stage functionalization of Felbinac



## RESEARCH ARTICLES

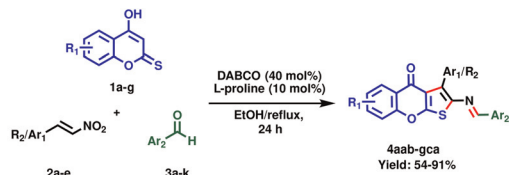
3208



### Synthesis of challenging cyclic tetrapeptides using machine learning-assisted high-throughput continuous flow technology

Chaoyi Li, Jiaping Yu, Wanchen Li, Jingyuan Liao, Junrong Huang, Jiaying Liu, Wei Zhao, Yinghe Zhang,\* Yuxiang Zhu\* and Hengzhi You\*

3215

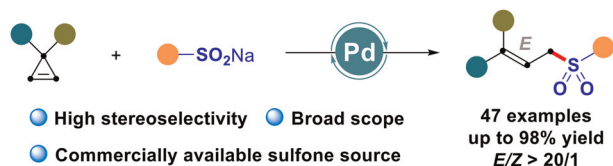


- ✓ Good to excellent yields
- ✓ 30 examples
- ✓ Metal-free
- ✓ No need for column purification
- ✓ Single step procedure comprising Michael Addition, intramolecular cyclization, disproportionation reaction and Schiff's base formation
- ✓ Environmentally benign reaction protocol
- ✓ High bond forming efficiency: one C-C, C-S, and two C-N bond formation in a single step

### A regioselective and sustainable approach for the synthesis of substituted thieno[2,3-*b*]chromen-4-ones with pendant imine groups via a base-promoted multicomponent reaction

Ujjwal Jyoti Goswami, Anjela Xalxo and Abu Taleb Khan\*

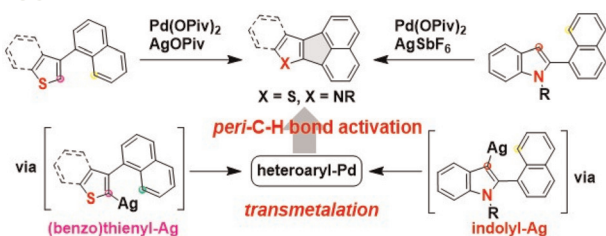
3223



### Stereoselective synthesis of allylic sulfones via palladium-catalyzed hydrosulfonylation of cyclopropenes

Suliang Wang, Xuening Li, Jian Song\* and Xianjie Fang\*

3230



### Pd-catalyzed site-specific heteroaromatic C-H/*peri*-C-H annulative coupling for synthesis of cyclopenta-fused polycyclic heteroarenes

Tienan Jin,\* Masaki Kawata, Sho Aida and Masahiro Terada

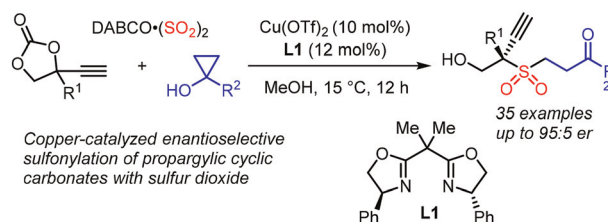


## RESEARCH ARTICLES

3239

**Copper-catalyzed enantioselective sulfonylation from sulfur dioxide: generation of tertiary propargylic sulfones**

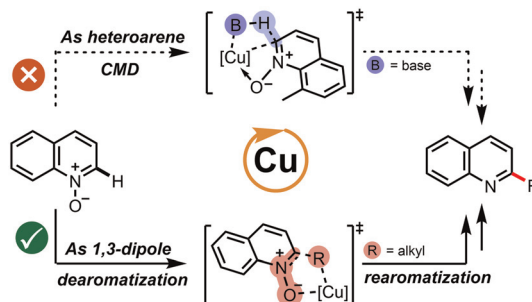
Chen Guo, Jiapian Huang, Shengqing Ye,\* Min Yang\* and Jie Wu\*



3246

**Dearomatization/rearomatization model for copper-mediated quinoline N-oxide C–H functionalization**

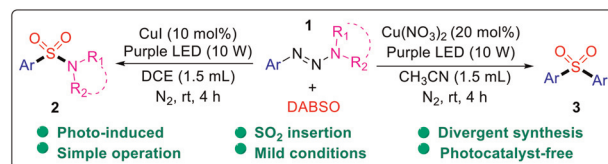
Wenxuan Lin, Wei Lai, Lei Xu, Xin Dai, Lin Zhang, Xiaoqian He,\* Li-Li Liao,\* Yu Lan\* and Ruopeng Bai\*



3256

**Photo-induced copper-catalyzed controllable denitrogenation/SO<sub>2</sub> insertion of aryltriazenes: divergent synthesis of aryl sulfonamides and diaryl sulfones**

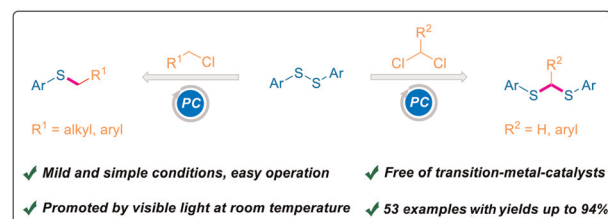
Bin Wang,\* Chenglong Wang, Tingting Zhang, Ziren Chen, Yu Xia, Shaofeng Wu, Yonghong Zhang\* and Chenjiang Liu\*



3264

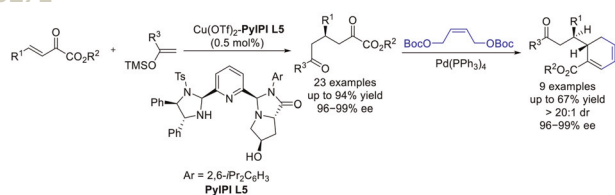
**Metal-free photoredox catalyzed formation of S–C–S and C–S bonds through coupling of diaryl sulfides/benzyl chlorides with dichloromethyl derivatives**

Chun-Hong Long, Hang Cai, Yuan Sun, Zhao-Nan Cai\* and Hong-Bo Qin\*



## RESEARCH ARTICLES

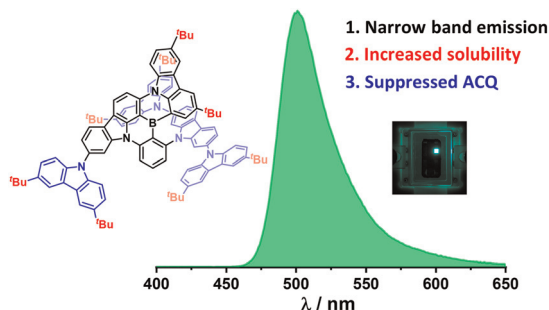
3271



### Cu(II)-catalyzed asymmetric Mukaiyama–Michael reaction: concise synthesis of cyclohexadiene analogues

Ning Li, Jun-Hao Zhang, Wei-Jing Yang, Ming-Sheng Xie\* and Hai-Ming Guo\*

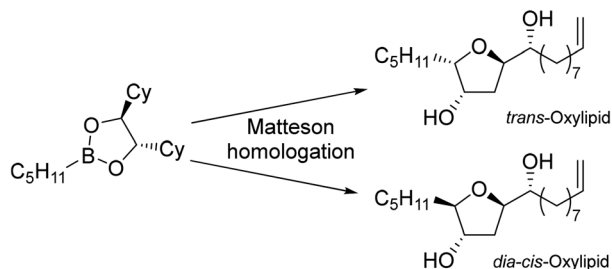
3279



### A multi-resonant thermally activated delayed fluorescence emitter with a twisted second-generation carbazole dendron showing suppressed concentration quenching and its use in solution-processed organic light-emitting diodes

Jingxiang Wang, Yuka Yasuda, Yongxia Ren, Ryo Kondo, David B. Cordes, Hironori Kaji\* and Eli Zysman-Colman\*

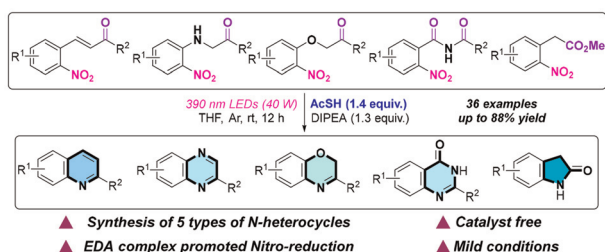
3288



### Synthesis of oxylipids via a boronic ester cycloetherification approach

Markus Tost and Uli Kazmaier\*

3293



### Photoinduced reductive cyclization of 2-nitroaryl-tethered carbonyl compounds: an approach for accessing nitrogen-fused heterocycles

Yulong Du, Yuhui Wu, Jiarui Tang, Jianhui Chen,\* Yanshu Luo and Yuanzhi Xia\*

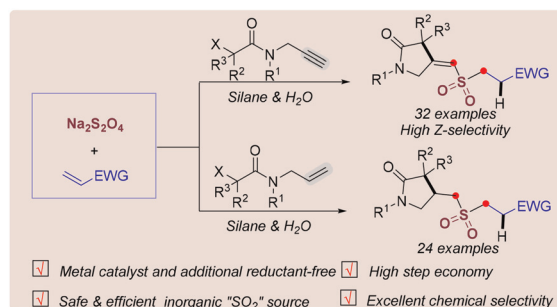


## RESEARCH ARTICLES

3299

### Radical-mediated sulfonation relay of alkyl alkynes/alkenes and electron-deficient alkenes to access vinyl and alkyl sulfones

Jin-Hui Liu, Fang Long, Qing Li, Da-Zhi Sun, Ying Man, Lin Wang, Li-Jun Wu\* and Shuang-Feng Yin\*



3306

### Highly efficient low-valence tungsten-catalyzed deoxygenative reduction of tertiary amides to amines with pinacolborane

Biao Cheng,\* Jialong Xv, Xiang Ren, Yuanyuan Li, Xiaoming Ji and Zhan Lu\*

