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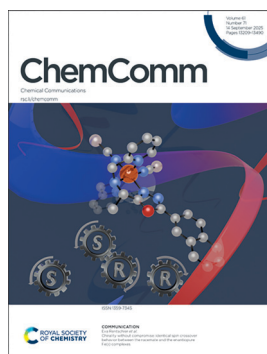
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ISSN 1359-7345 CODEN CHCOFS 61(71) 13209-13490 (2025)



### Cover

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### Inside cover

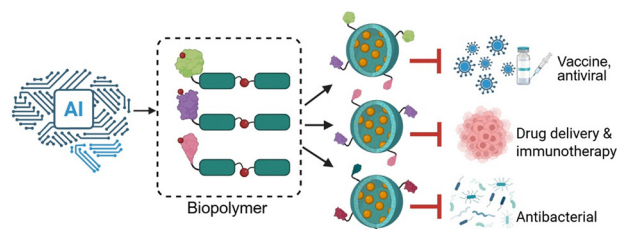
See Eva Rentschler *et al.*, pp. 13389–13392. Image reproduced by permission of Jens-Georg Becker and Eva Rentschler from *Chem. Commun.*, 2025, 61, 13389.

## HIGHLIGHTS

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### Controlling nanocage assembly, towards developing a one-health “plug & play” platform for targeted therapy

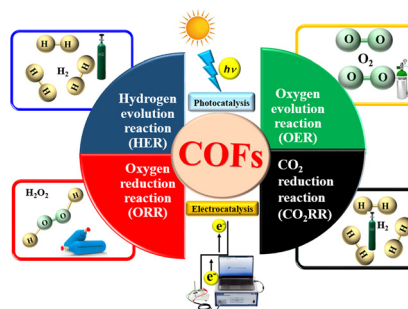
Yujie Sheng, Mark J. Sutton and Kourosh H. Ebrahimi\*



13236

### Covalent organic frameworks as emerging photocatalysts and electrocatalysts for renewable energy conversion

Alka, Janak, Sadhika Khullar\* and Rakesh Kumar\*



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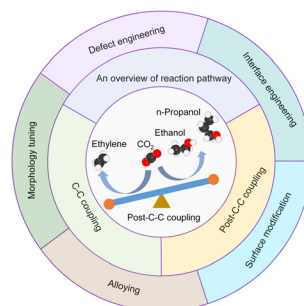


## HIGHLIGHTS

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### A mini review on post-C–C coupling mediated CO<sub>2</sub> electroreduction to C<sub>2+</sub> alcohols

Jiahuan Du,\* Jinyun Liu, Ziwei Liu, Na Tian, Yuting Zhang and Xuehong Gu

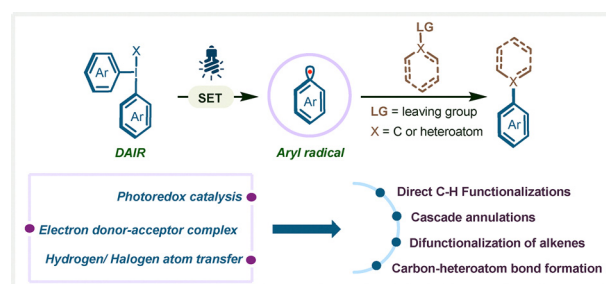


## FEATURE ARTICLES

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### Visible light-driven chemistry of diaryliodonium reagents: mechanistic perspectives and synthetic applications

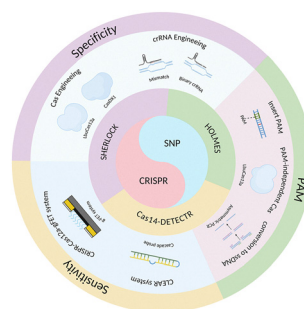
Prahallad Meher, Karan Ramdas Thombare, Sneha Chandra and Sandip Murarka\*



13345

### CRISPR-based SNP detection technologies advance from classical methods to cutting-edge innovations

Songkuan Zhuang, Botao Bai and Yizhen Liu\*



13359

### Maximising the translation potential of electrochemical biosensors

Niamh Docherty, Daniel Macdonald, Alisdair Gordon, Alexandra Dobra, Veerappan Mani, Ying Fu, Susan Pang, Melanie Jimenez and Damion K. Corrigan\*

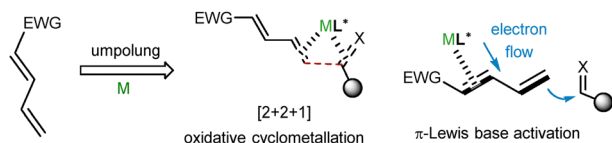
#### Electrochemical Biosensor Development

- ✓ Prioritising User Needs
- ✓ Designing for Manufacturability
- ✓ Real world validation
- ✓ System integration



## FEATURE ARTICLES

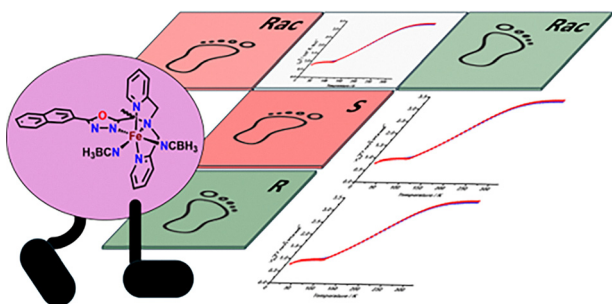
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Transition metal-catalysed asymmetric umpolung reactions of electron-deficient  $\pi$ -unsaturated systems

Xue Song, Shangde Liu, Wei Du\* and Ying-Chun Chen\*

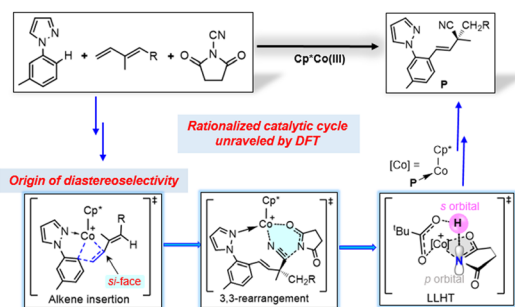
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Chirality without compromise: identical spin crossover behavior between the racemate and the enantiopure  $\text{Fe}(\text{II})$  complexes

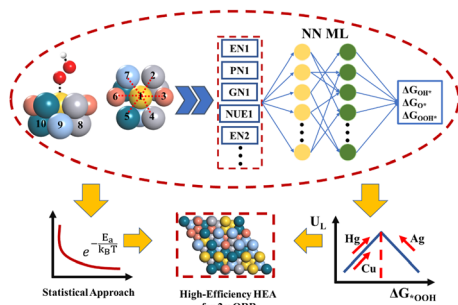
Jens-Georg Becker, Sriram Sundaresan, Luca. M. Carrella and Eva Rentschler\*

13393

Unconventional diastereoselectivity and mechanism of  $\text{Cp}^*\text{Co}(\text{III})$ -catalyzed C-H functionalization of asymmetric dienes: a DFT perspective

Baoping Ling,\* Xiaoming Sun, Yuxin Xie, Peng Liu, Wenhui Zhong, Tony D. James and Yuxia Liu\*

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Machine learning driven rational design of  $\text{AuAgPdHgCu}$  HEA catalysts for the two-electron oxygen reduction reaction

Zhen Chen, Xi Liu, Junyi Zhu, Bihua Hu, Lin Yang, Xin Wang,\* Shuqin Song\* and Zhongwei Chen\*

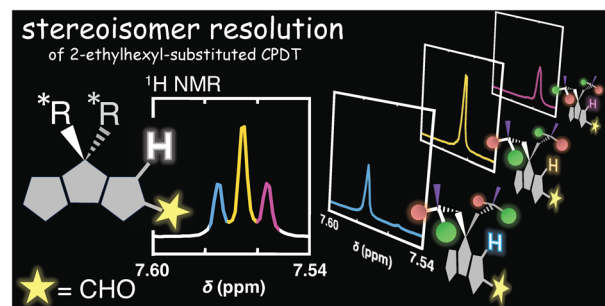


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### Stereoisomer resolution of 2-ethylhexyl-substituted cyclopentadithiophene and its effect on optical properties of donor–acceptor–donor conjugated molecules

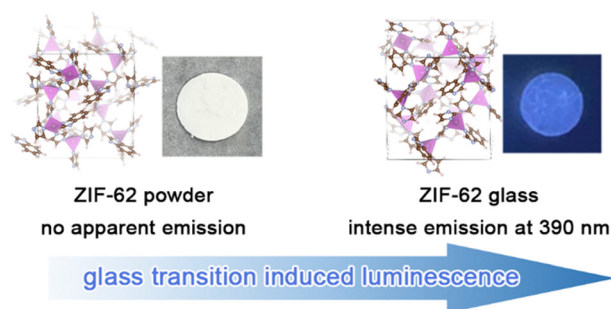
Kenta Yamada, Wataru Suzuki, Jun-ichi Nishida,\* Masayuki Gon, Kazuo Tanaka and Tomokazu Umeyama\*



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### Glass transition-induced luminescence in ZIF-62

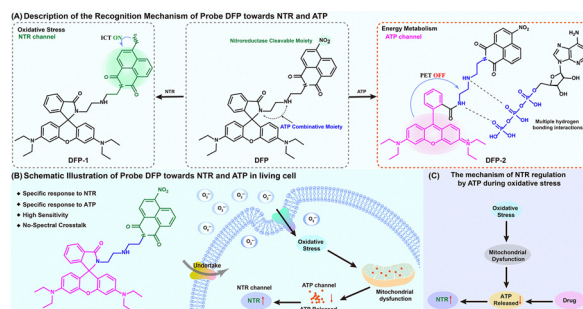
Shuaihua Yu, Haitao Hu, Yichao Lin,\* Wen Yang\* and Ziqi Tian\*



13409

### Simultaneous detection of nitroreductase and adenosine triphosphate using a dual-emission fluorescent probe

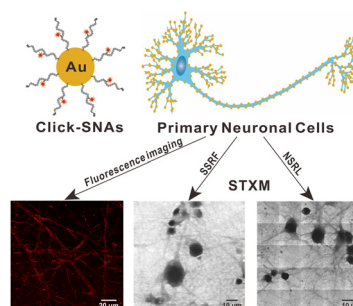
Yumei Xu,\* Fang Nian, Jinmei Wei, Li Li, Runtian Ma, Sudai Ma and Wenting Wang\*



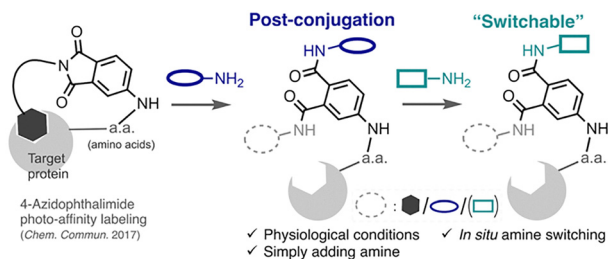
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### A clickable spherical nucleic acid probe for fluorescence and synchrotron radiation X-ray dual-modality imaging

Xiaobo Wang, Xin Yan, Feng Zhou, Qiaowei Tang, Zijian Xu, Jichao Zhang, Yong Guan, Yanhong Sun, Ying Zhu, Jun Hu and Xiaoqing Cai\*



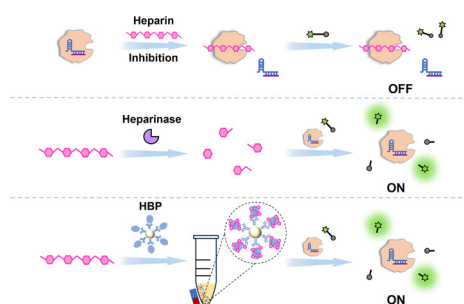
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### Phthalimide: a potential warhead for switchable and bioorthogonal conjugation

Kosuke Chiba, Takumi Yoshida, Kana Okada, Minoru Ishikawa, Yuichi Hashimoto, Satoshi Obika\* and Takao Yamaguchi\*

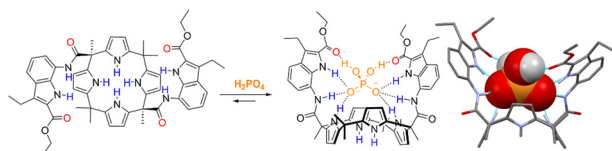
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### Enzyme inhibition-enabled CRISPR/Cas12a biosensing system for heparin-related non-nucleic acid biomarkers

Ruo Ma, Wenjiao Fan,\* Yueran Wang, Xinrui Fei and Chenghui Liu\*

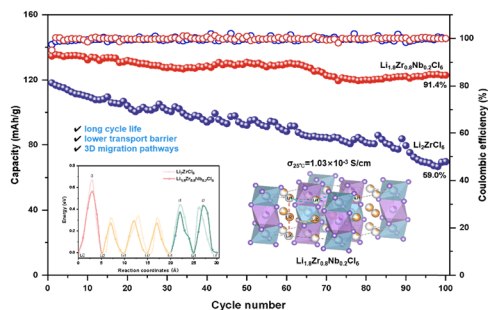
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### A calix[4]pyrrole functionalized with an amidoindole ester for the selective recognition of the dihydrogen phosphate anion

Ju Hyun Oh, Sang Kyu Shin and Sung Kuk Kim\*

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### Boosting lithium-ion transport in halide solid-state electrolytes by aliovalent substitution for all-solid-state lithium-ion batteries

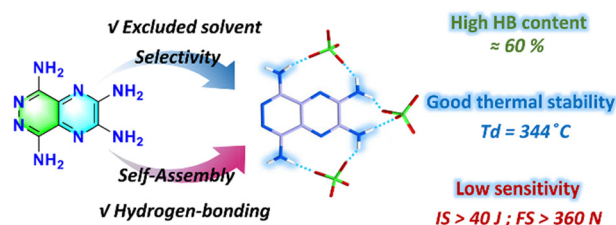
Suyue Chen, Meiling Liu, Zhihao Yang, Yaxue Zhang, Jiaying Liu, Weiying Wu, Tieqi Huang\* and Hongtao Liu\*



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### Tetraamino-driven hydrogen-bonded networks: selective self-assembly of energetic materials

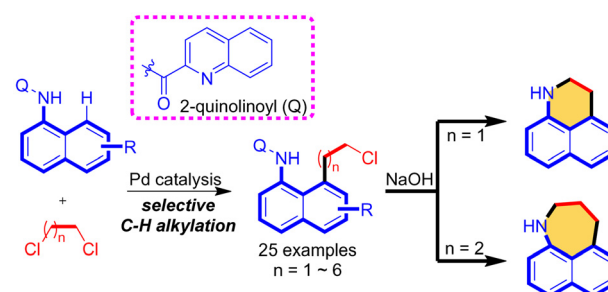
Yaxi Wang, Junliang Liu, Jinxuan He, Xiaoting Ren, Lu Hu\* and Siping Pang\*



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### Palladium-catalyzed aromatic C–H alkylation of 1-naphthylamines with dichloroalkanes and its application in fused polycyclic amine synthesis

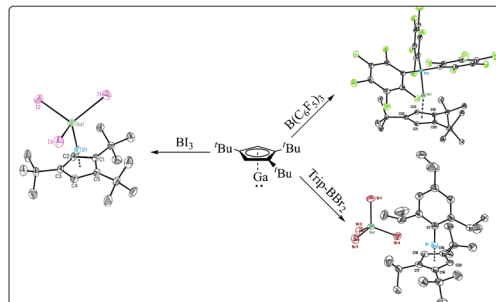
Yixin Shi, Ziyi Zhou, Yilin Hu, Siyun Wang, Mingzhe Hong, Kai Cheng,\* Chun-Xiao Jia\* and Jie-Ping Wan\*



13441

### 1,2,4-Tri(<sup>t</sup>Bu)cyclopentadienyl gallium (Cp<sup>III</sup>Ga) as a versatile reagent for the synthesis of Lewis adducts and ionic compounds

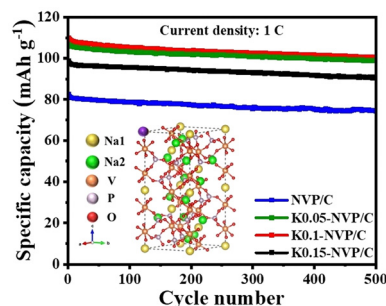
Yi Ding,\* Yongheng Tang, Mohd Nazish, Paul Niklas Ruth, Sophia Luisa Wachendorf, Regine Herbst-Irmer, Dietmar Stalke\* and Herbert W. Roesky\*



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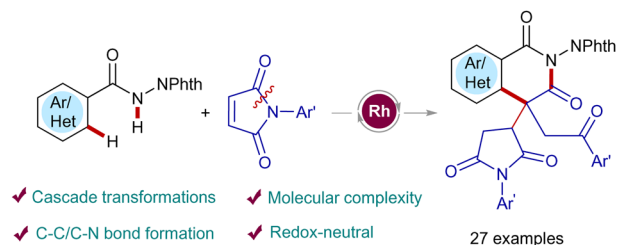
### K<sup>+</sup> doping-induced pillaring effect in Na<sub>3</sub>V<sub>2</sub>(PO<sub>4</sub>)<sub>3</sub> for enhanced rate performance in sodium-ion batteries

Yingqi Wu, Lijun Xu, Jinhui Zhong, Xue Zhang, Xuejie Wang, Guoyu Tang, Bicheng Zhu and Tao Liu\*



## COMMUNICATIONS

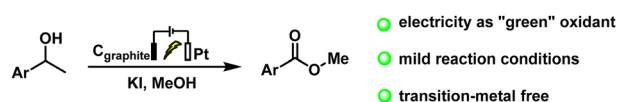
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### Cascade C–H functionalization/annulation of arylamides: access to succinimide-tethered isoquinoline-1,3-diones

Prabhat Kumar Maharana, Perumal Muthuraja, Subhradeep Kar, Tamilthendral Veerappan and Tharmalingam Punniyamurthy\*

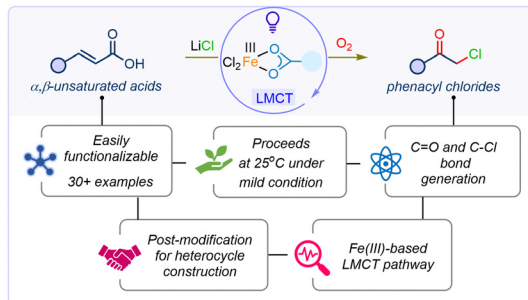
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### Electrochemical oxidative cleavage of C(OH)–C bonds for sustainable synthesis of esters

Ran Ma,\* Tong Zhang, Yuqi You, Yixin Wang, Zhiyuan Jiang, Ji-Kai Li and Yang Yang\*

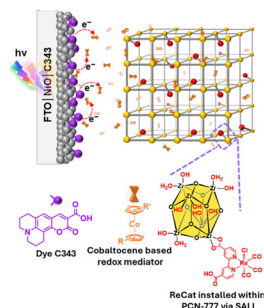
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### Decarboxylative chlorination of $\alpha,\beta$ -unsaturated acids

Soumya Mondal, Siba P. Midya, Soumadeep Ghosh, Souvik Maiti, Subal Mondal, Tarun Jana and Pradyut Ghosh\*

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### Dye-sensitized photoelectrochemical cell combining a MOF catalyst and cobaltocene CoCpCp\* as redox mediator for CO<sub>2</sub> reduction

Wojciech G. Sikorski, Tianbo Duan, Tijmen M. A. Bakker, Joost N. H. Reek and Jarl Ivar van der Vlugt\*

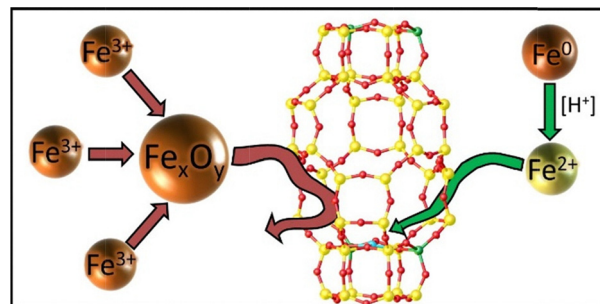


## COMMUNICATIONS

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### Novel and more facile synthesis of highly dispersed iron in small-pore zeolites by ion exchange for catalytic applications

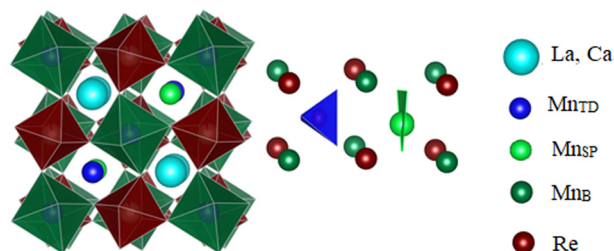
Simon Barth, Leo Scheibe, Maria Casapu and Jan-Dierk Grunwaldt\*



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### Chemical tuning of a double double perovskite oxide

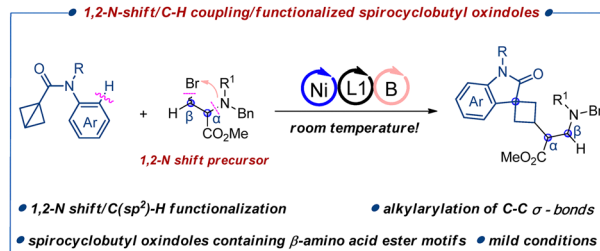
Azizah Almadhi, Sean D. Injac, Kunlang Ji, Clemens Ritter and J. Paul Attfield\*



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### Nickel-catalyzed sequential 1,2-*N*-migration/BCBs ring-opening to access spirocyclobutyl $\beta$ -amino acid esters

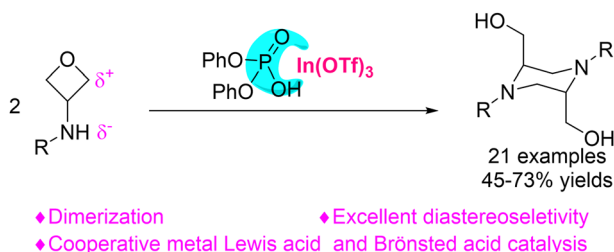
Xin-Yu Li, Mei-Qiu Xiao, Li-Juan Zhou, Jia-Qi Zhang, Meng-Yan Zhao, Shuo-Wen Wang\* and Shi Tang\*



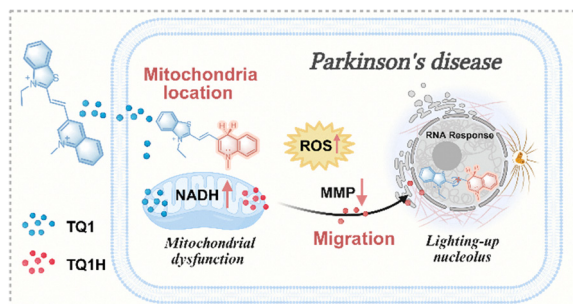
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### Diastereoselective synthesis of 1,4-diaryl piperazines through the dimerization of 3-aminooxetanes with cooperative indium–diphenyl phosphate catalysis

Long Cheng, Cuicui Nian, Zhengyu Han, Jianwei Sun and Hai Huang\*



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