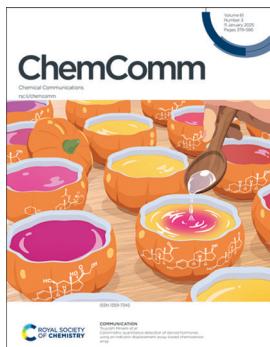


The Royal Society of Chemistry is the world's leading chemistry community. Through our high impact journals and publications we connect the world with the chemical sciences and invest the profits back into the chemistry community.

IN THIS ISSUE

ISSN 1359-7345 CODEN CHCOFS 61(3) 379–586 (2025)



Cover

See Tsuyoshi Minami et al., pp. 476–479.
Image reproduced by permission of Tsuyoshi Minami from *Chem. Commun.*, 2025, **61**, 476.



Inside cover

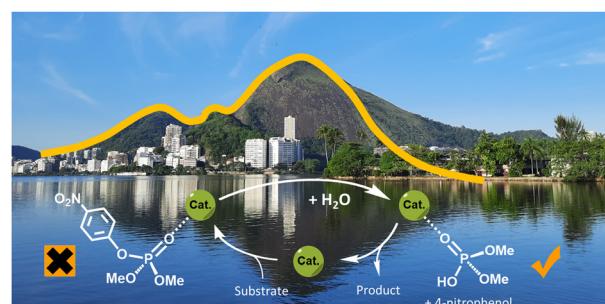
See Mário J. F. Calvete, Mariette M. Pereira et al., pp. 480–483.
Image reproduced by permission of Mariette M. Pereira from *Chem. Commun.*, 2025, **61**, 480.

HIGHLIGHTS

391

Catalytic strategies for detoxifying phosphorus(v) biocides

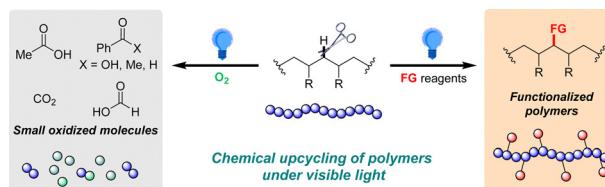
Larissa Maria S. de Carvalho, Nathália R. D. de Souza and Eduardo H. Wanderlind*



407

Photochemical upcycling of polymers via visible light-driven C–H bond activation

Wei Yi,* Jing Liu and Xiao-Qiang Hu*



GOLD
OPEN
ACCESS

EES Batteries

Exceptional research on
batteries and energy storage

Part of the EES family

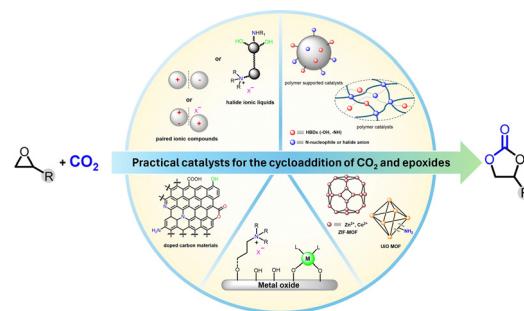
Join
in | Publish with us
rsc.li/EESBatteries

FEATURE ARTICLES

419

CO₂ fixation: cycloaddition of CO₂ to epoxides using practical metal-free recyclable catalysts

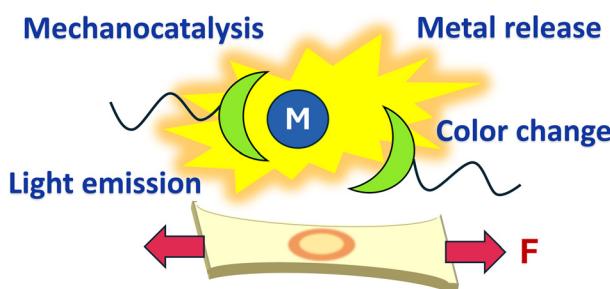
Wuttichai Natongchai, Daniel Crespy and Valerio D'Elia*



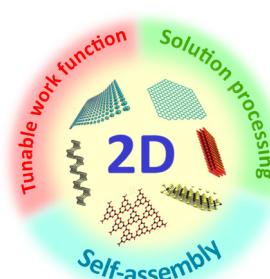
441

Functional coordination compounds for mechanoresponsive polymers

Tatiana Gridneva and Julia R. Khusnutdinova*

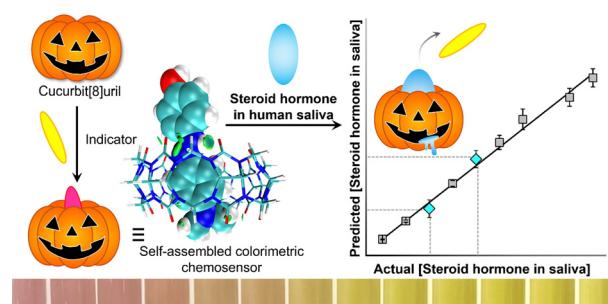


455

Atomically thin 2D materials for solution-processable emerging photovoltaicsOleksandr Stroyuk,* Oleksandra Raievskaya,
Jens Hauch and Christoph J. Brabec

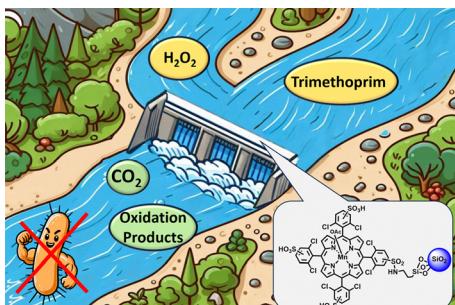
COMMUNICATIONS

476

Colorimetric quantitative detection of steroid hormones using an indicator displacement assay-based chemosensor arrayYui Sasaki, Yusuke Yamanashi, Kohei Ohshiro,
Xiaojun Lyu and Tsuyoshi Minami*

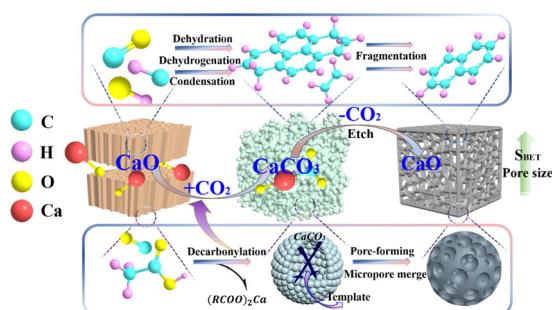
COMMUNICATIONS

480

**Advancing continuous flow techniques in effective trimethoprim oxidation: combatting bacterial resistance in wastewater**

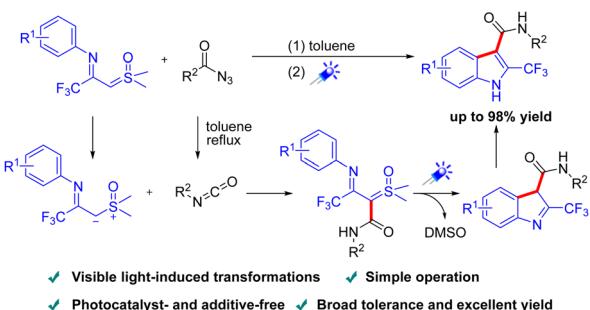
Diana L. Marques, Giusi Piccirillo, Fábio M. S. Rodrigues, Rafael T. Aroso, Lucas D. Dias, Gabriela J. da Silva, Mário J. F. Calvete* and Mariette M. Pereira*

484

**Activation of biochar by CO₂ produced from the same pyrolysis process and captured *in situ* by CaO**

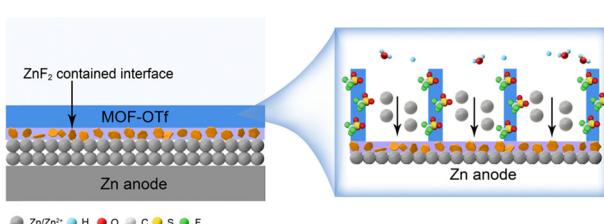
Mengjiao Fan, Yuewen Shao, Chao Li, Yuchen Jiang, Yunyu Guo, Shu Zhang, Kai Sun, Yi Wang and Xun Hu*

488

**Visible light-induced cascade annulation of sulfoxonium ylides with azides for the synthesis of 2-trifluoromethyl indoles**

Jia-Huan Cui, Qian-Yu Chen, Jun Zhang, Yan He,* Xingguang Li* and Pei-Nian Liu*

492

**A triflate porous layer stabilizing Zn anodes for high-performance Zn-ion batteries**

Ruijun Rao, Jingtao Chen, Mengxi Bai, Qiufen Li, Xiang Wang, Jiashuai Li, Dongze Li, Xiaoyan Lin, Siyuan Shao and Ziqi Wang*

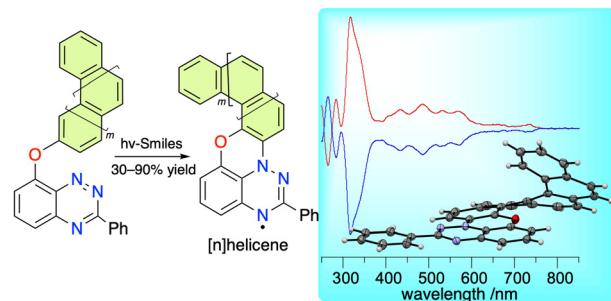


COMMUNICATIONS

496

 π -Curved Blatter radicals: Blatter helicenes

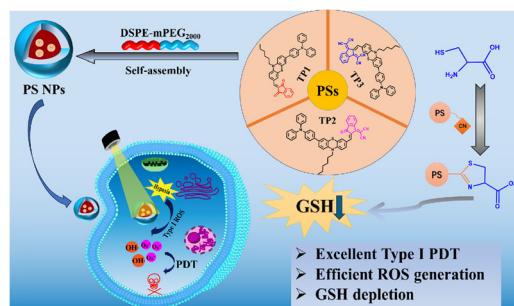
Hemant K. Singh, Agnieszka Bodzioch,
Anna Pietrzak and Piotr Kaszyński*



500

Molecular acceptor engineering to precisely design a NIR type I photosensitizer for efficient PDT-based synergistic therapy

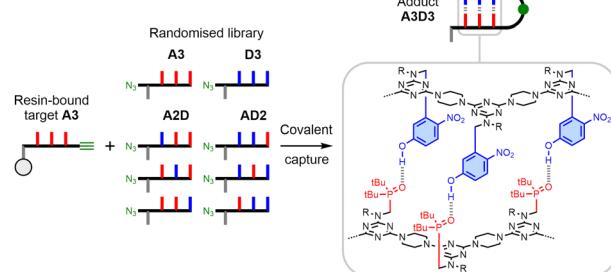
Ziqi Zou, Yili Xie, Jiaxing Wan, Qing Wan, Jianwen Tian,*
Xiaoyong Zhang* and Yen Wei*



504

Sequence-selective pulldown of recognition-encoded melamine oligomers using covalent capture on a solid support

Luis Escobar, Daniel Sun, Mohit Dhiman and
Christopher A. Hunter*



508

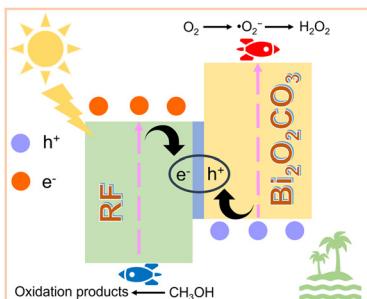
Robust phosphine-based covalent-organic framework palladium catalysts for the highly efficient carbonylation coupling reaction

Benling Yu, Liqing He, Shiyuan Wei, Jiawei Li,*
You Wang, Juan Zhong, Jianhan Huang* and
You-Nian Liu



COMMUNICATIONS

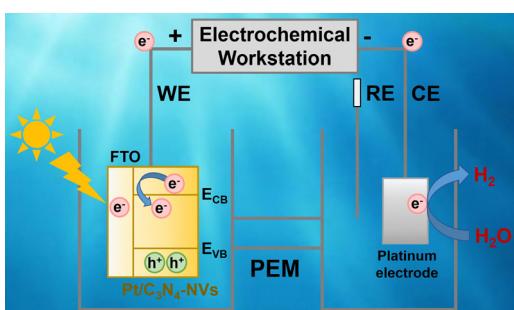
512



Organic–inorganic complex S-scheme photocatalyst resorcinol–formaldehyde resins/ $\text{Bi}_2\text{O}_2\text{CO}_3$ with enhanced photocatalytic H_2O_2 production

Meichao Gao,* Jianting Wang, Huichao Cui, Mingyang Meng, Yuanyuan Feng,* Yunyun Gong and Changlong Sun*

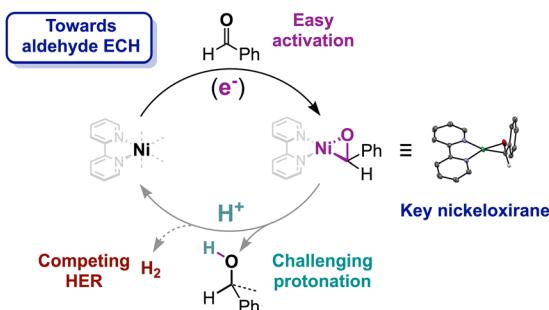
516



Rapid Joule heating synthesis of $\text{Pt}/\text{C}_3\text{N}_4\text{-NVs}$ for photoelectrocatalytic water splitting to produce H_2

Zehui Zhao and Xiangchao Meng*

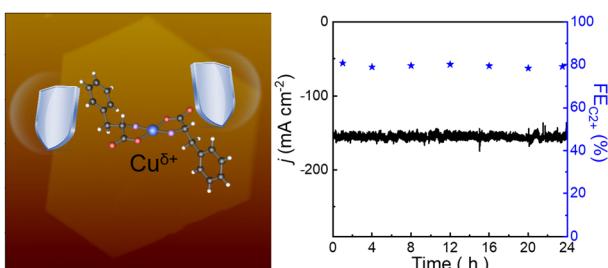
520



Electrochemical aldehyde hydrogenation: probing the inner-sphere strategy with nickel-bipyridine complexes

Gabriel Durin, Mijung Lee, Martina A. Pogany, Christian Kahl, Thomas Weyhermüller, Walter Leitner and Nicolas Kaeffer*

524



Two-dimensional Cu-phenylalanine nanoflakes for efficient and robust CO_2 electroreduction to C_{2+} products

Wenda Zhou, Mingyue Chen, Xingfang Luo, Cailei Yuan,* Shoujie Liu, Wen Lei and Shouguo Wang*

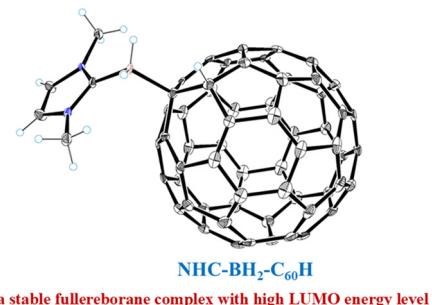


COMMUNICATIONS

528

NHC-BH₂-C₆₀H: synthesis, characterization and electrochemical properties of the N-heterocyclic-carbene-stabilized fullerene–borane complex

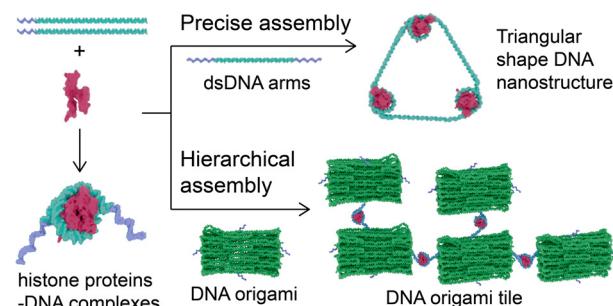
Sheng-Hu Yuan, Shu-Chao Ma, Jian Wu, Xiu-Ying Zheng, Jun Xuan* and Fei Li*



532

A versatile approach for geometry-based self-assembly of DNA–protein hybrid nanostructures using histone–DNA interactions

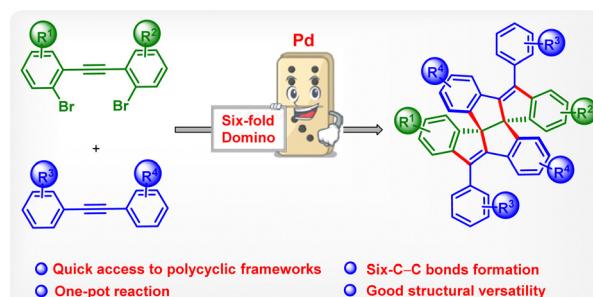
Hajar Al-Zarah, Maged F. Serag, Faisal Alkhaldi and Satoshi Habuchi*



536

A rapid pathway to molecular complexity: a palladium-catalyzed six-fold domino process to access polycyclic frameworks

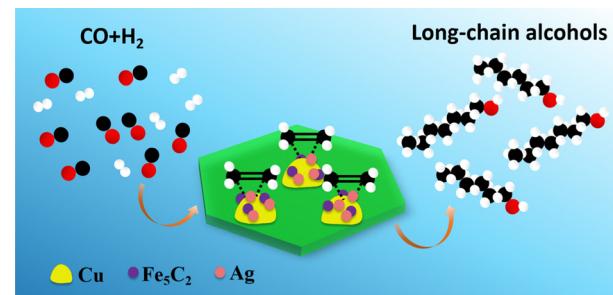
Komal Goel and Gedu Satyanarayana*



540

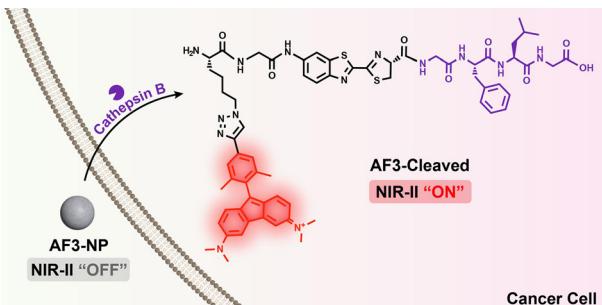
Promotion effect of Ag on syngas transformation to long-chain alcohols over CuFe catalysts

Zhiwei Qin, Yinwen Li,* Meng Wang, Yanrui Su, Wa Gao,* Ding Ma and Lin Yang



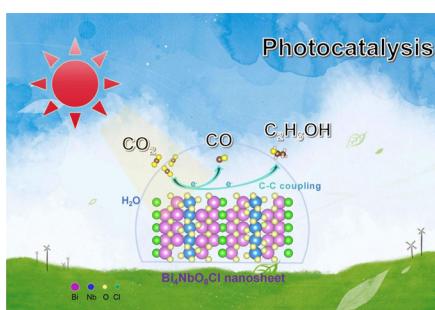
COMMUNICATIONS

544

**"Turn-on" NIR-II fluorescence of a dually quenched probe for sensitive imaging of cathepsin B *in vivo***

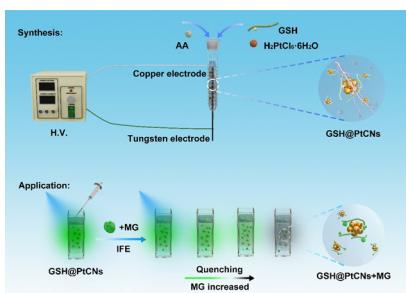
Yu Deng, Kui Yan, Lingling Xu, Xiaoyang Liu, Furong Zhao, Shangfeng Wang, Fan Zhang, Gaolin Liang* and Rui Wang*

548

**Crystal-facet modulated pathway of CO_2 photoreduction on $\text{Bi}_4\text{NbO}_8\text{Cl}$ nanosheets boosting production of value-added solar fuels**

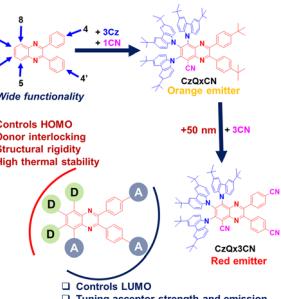
Peiting Hao, Haoqiang Chi, Zhengdao Li,* Xinxin Lu,* Yong Yang, Yongcai Zhang, Zhigang Zou and Yong Zhou*

552

**Dielectric barrier discharge-mediated one-pot rapid synthesis of platinum nanoclusters for fluorescent sensing of malachite green**

Bingxin Ma, Bodong Wang, Yuqi Li, Lianshuang Jiang, Xiandeng Hou and Kailai Xu*

556

**Leveraging quinoxaline functionalization for the design of efficient orange/red thermally activated delayed fluorescence emitters**

Shantaram Kothavale, Rajendra Kumar Konidena, Hyunjung Lee and Jun Yeob Lee*

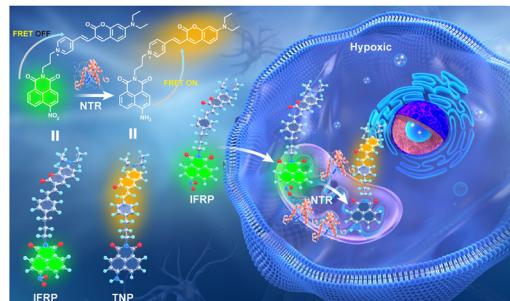


COMMUNICATIONS

560

A ratiometric two-photon fluorescent probe for the quantification of nitroreductase in hypoxic neurons

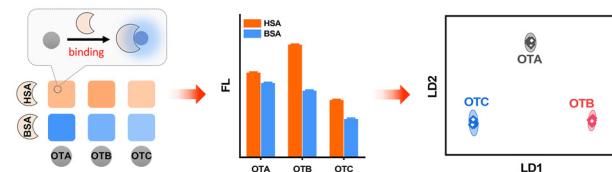
Zhiqian Tang, Hong Huang,* Yuanyuan Yao, Shumei Gao, Bingyong Lin, Qianshou Zong, Wanpeng Hu,* Jianguo Xu, Yangang Wang and Longhua Guo*



564

An albumin fluorescent sensor array discriminates ochratoxins

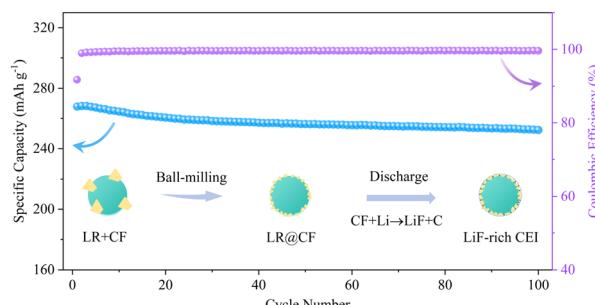
Zhongyong Xu, Yilin Zhan, Shiwei Zhang, Zhiqing Xun, Lei Wang, Xiaoqiang Chen, Bin Liu* and Xiaojun Peng



568

Constructing LiF-rich cathode electrolyte interphase to enhance the cyclic stability of lithium-rich manganese-based oxide cathode

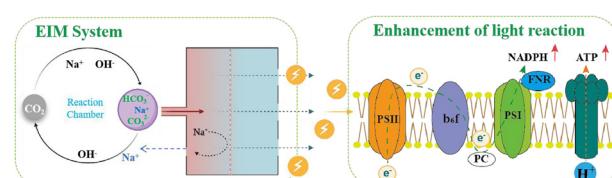
Yang Yang, Yajun Zhao, Junjie Song, Xiqian Yu* and Hong Li*



572

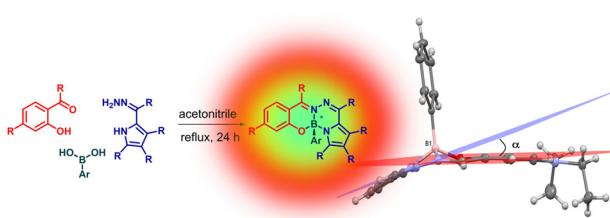
The electrochemical ion membrane system (EIMs) enhanced light reactions of photosynthesis with intermittent electrical stimulation

Bicheng Deng, Yuyong Hou, Sihan Lu, Suihao Yan, Zhile Guo, Zhiyong Liu, Xinqi Wang, Changhong Jia, Weijie Wang,* Longjiang Yu* and Lei Zhao*



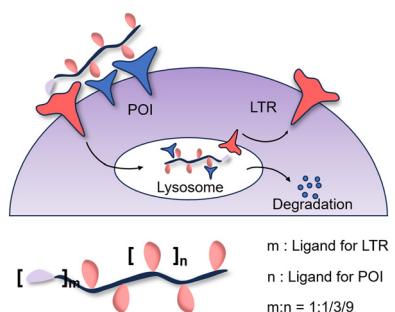
COMMUNICATIONS

576

**Multicomponent synthesis of stereogenic-at-boron fluorophores (BOSPYR) from boronic acids, salicylaldehydes, and 2-formylpyrrole hydrazones**

Ezgi Bayer Kömündoğan, Sania Batool, Ertan Şahin, Erol Yıldırım, Murat İşik* and Cihangir Tanyeli*

580

**Controllable multivalent LYTACs enhance targeted protein degradation**

Yuheng Lv, Yicun Li, Qin Fu and Peng Shi*

CORRECTION

584

Correction: Photochemical upcycling of polymers via visible light-driven C–H bond activation

Yi Wei,* Jing Liu and Xiao-Qiang Hu*

