

# ChemComm

Chemical Communications

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## IN THIS ISSUE

ISSN 1359-7345 CODEN CHCOFS 61(54) 9723-9984 (2025)



### Cover

See Tsuyoshi Minami *et al.*, pp. 9872–9875.  
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### Inside cover

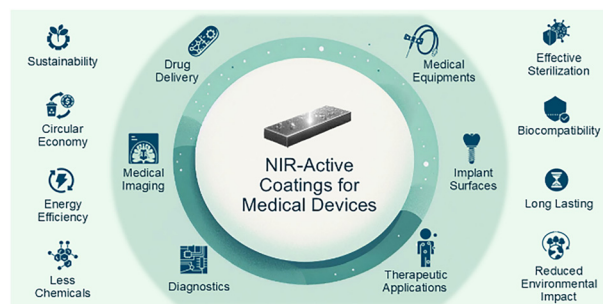
See Kenjiro Higashi *et al.*, pp. 9876–9879.  
Image reproduced by permission of Kenjiro Higashi from *Chem. Commun.*, 2025, 61, 9876.

## HIGHLIGHTS

9736

### Innovative and sustainable approaches to NIR-active coatings for next-generation medical devices

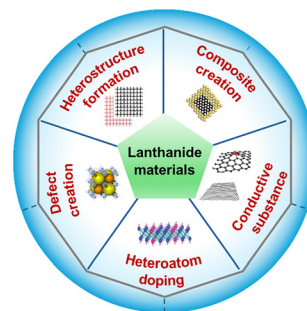
G. S. Lekshmi,\* Karthika Prasad, Katia Alexander and Vignesh Kumaravel\*



9753

### Lanthanide-based catalysts for electrochemical water splitting: unraveling the interplay of structure, properties, and performance

Baghendra Singh



# Environmental Science: Atmospheres

GOLD  
OPEN  
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Fundamental questions  
Elemental answers

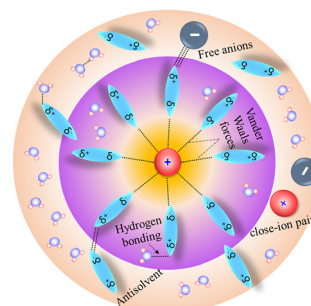


## HIGHLIGHTS

9780

## Strategies for electrolyte modification in aqueous zinc-ion batteries: an antisolvent approach

Asis Sethi, Chaithra Rajeev, Anil Kumar U., Jefin F., Santoshkumar D. Bhat and Vishal M. Dhavale\*

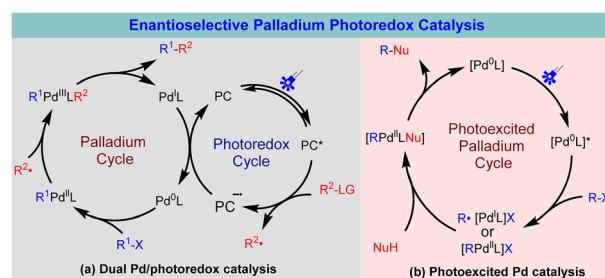


## FEATURE ARTICLES

9802

## Enantioselective palladium photoredox catalysis

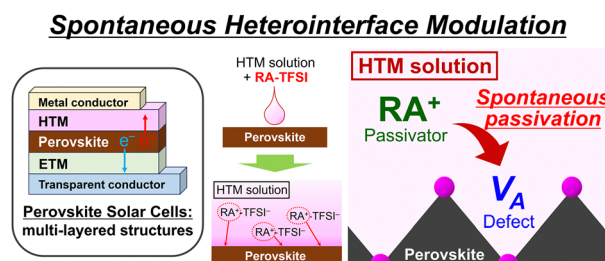
Sheng Tang, Runquan Kang, Zhenyu Zhang and Shouyun Yu\*



9816

## Spontaneous heterointerface modulators for perovskite solar cells

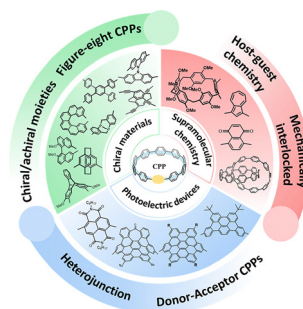
Naoyuki Nishimura



9836

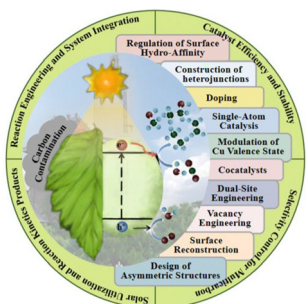
## Recent advances in functionalized cycloparaphenylenes: from molecular design to applications

Xiaonan Li, Shengzhu Guo and Hua Jiang\*



## FEATURE ARTICLES

9853

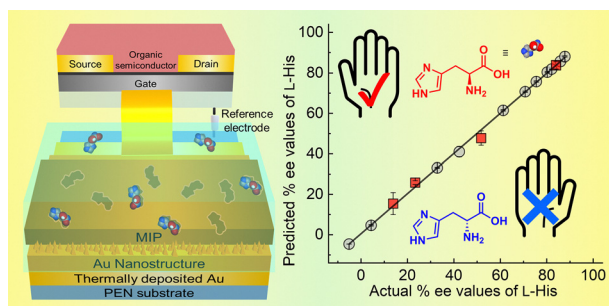


### Catalyzing a cleaner future: recent advancement in photocatalytic conversion for CO<sub>2</sub>-to-solar fuels

Zhengdao Li,\* Xiaotian Yang, Zimu Zhang, Yecheng Leng, Xi Zhu, Zhigang Zou and Yong Zhou\*

## COMMUNICATIONS

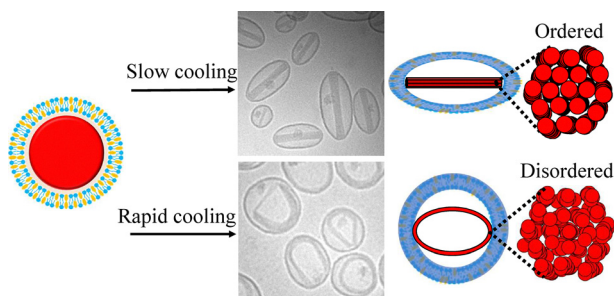
9872



### Accurate determination of enantiomeric excess of an amino acid using an extended-gate-type organic transistor

Yijing Zhang, Yui Sasaki, Xiaojun Lyu, Jun-ichi Ogawa, Hidenosuke Itoh and Tsuyoshi Minami\*

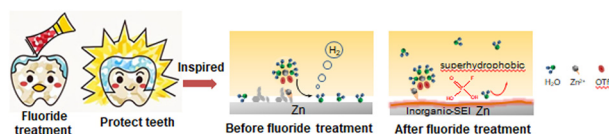
9876



### Nanomorphology tuning in doxorubicin-loaded liposomes *via* cooling-induced doxorubicin-crystallization and membrane phase transition

Koki Nishimura, Taiki Fujimoto, Taisei Tokumoto, Kenjiro Higashi,\* Ryo Hidaka, Keisuke Ueda, Takeshi Morita and Kunikazu Moribe

9880



### Biomimetic fluoride-coated zinc anodes: pediatric dentistry inspires stable zinc batteries

Shi Wang,\* Tao Chen, Yuqi Miao, Wu Hao, Huibo Wang,\* Qian Wang,\* Zhong Jin and Lei Zhang\*

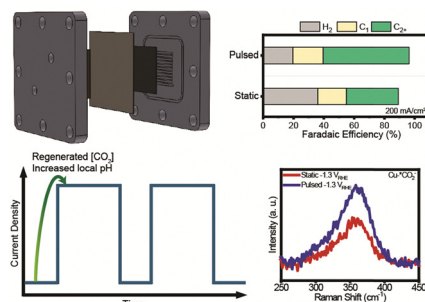


## COMMUNICATIONS

9884

Insight into the effects of pulsed CO<sub>2</sub> electrolysis in a zero-gap electrolyzer

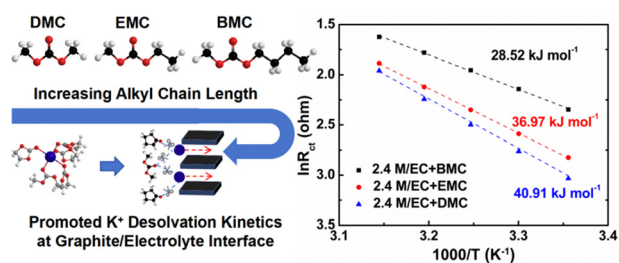
Xiao Kun Lu, Weiyan Ni, Adrien E. Deberghes and Linsey C. Seitz\*



9888

## Tailoring the alkyl chain length of linear esters in moderately concentrated electrolyte for a high-performance graphite anode in K-ion batteries

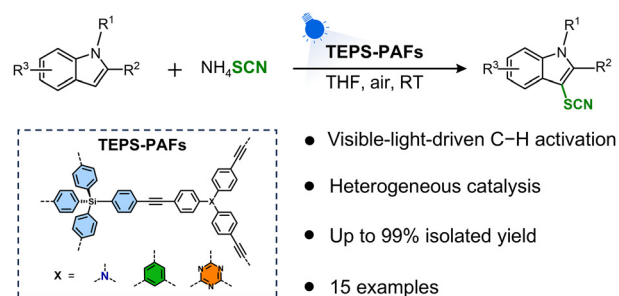
Yuqin Fan, Xueao Jiang, Wenjie Luo, Yang Gao, Hussein A. Younus, Weijian Liu, Minghan Zhou, Xiwen Wang\* and Shiguo Zhang\*



9892

## Efficient photocatalytic C-3 thiocyanation of indoles over tetraphenylsilane-based porous aromatic frameworks

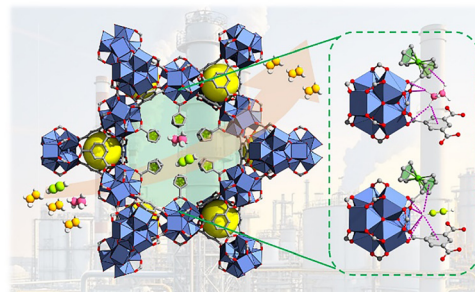
Yuxuan He, Linzhu Cao, He Wang, Fengchao Cui\* and Xin Tao\*



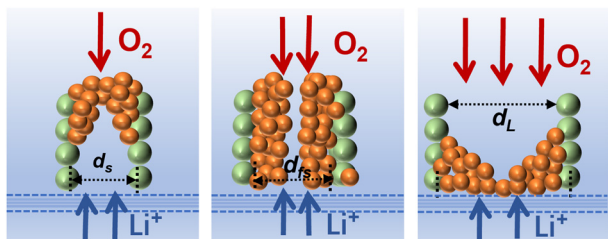
9896

Decorating nonpolar units in robust MOFs for one-step purification of C<sub>2</sub>H<sub>4</sub> from C<sub>2</sub>H<sub>2</sub>/C<sub>2</sub>H<sub>4</sub>/C<sub>2</sub>H<sub>6</sub>

Qi Zhang, Rui Song, Lin Liu\* and Zhengbo Han\*



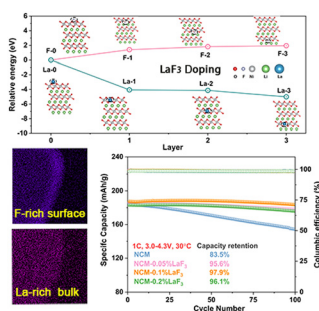
9900



### Redefining the capacity limitation of Li-air batteries by uncoupling the competitive multiple-transport and nucleation

Junjie Li, Qingxu Zhang, Chongyan Yao, Xiangyu Li, Jiucong Liu, Jian Wang,\* Gang Liu\* and Xizheng Liu\*

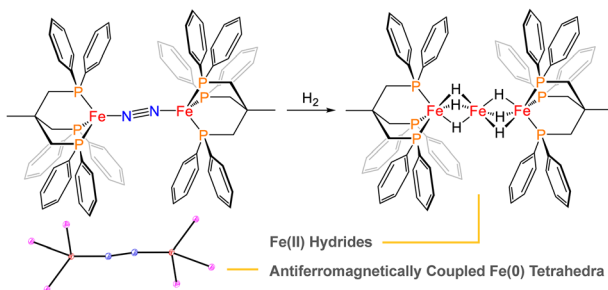
9904



### A bifunctional LaF<sub>3</sub> doping strategy achieving coupled bulk and interfacial reconstruction for Ni-rich cathodes

Sihan Li, Yunhai Zhang, Le Zhao, Huimin Ji, Zhouhao Fu, Jie Tan, Jun Bao, Yixin Li, Qi Zhang,\* Yougen Tang and Haiyan Wang

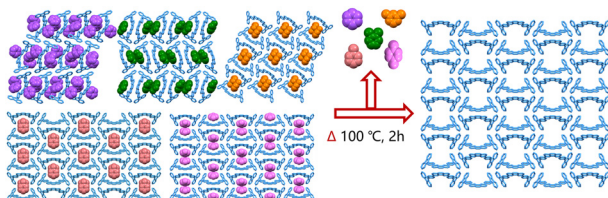
9908



### Historical account of dinitrogen-bridged diiron complex synthesis using a commercial tripodal ligand

Nathan C. Smythe,\* Joydeb Mondal, Juan G. Duque, Russell K. Feller, Marco Flores, John C. Gordon,\* Neil J. Henson, Moshe Paz-Pasternak, Francisca N. Rein, Brian L. Scott, R. Dean Taylor and Ryan J. Trovitch\*

9912



### A V-shaped small molecule-based crystalline nonporous supramolecular organic framework for capturing benzene-based contaminants

Jin-Fa Chen,\* Yuxuan Wang, Bingbing Shi, Hong Yao, Tai-Bao Wei and Qi Lin\*

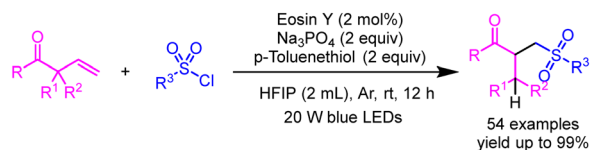


## COMMUNICATIONS

9916

## Visible-light-induced radical 1,3-hydrosulfonylation of allylketones with sulfonyl chlorides

Xin Zheng, Xiang Li,\* Xinglong Han, Xinlong Zhang, Qin Zhang, Tuanli Yao\* and Guodong Zhang\*

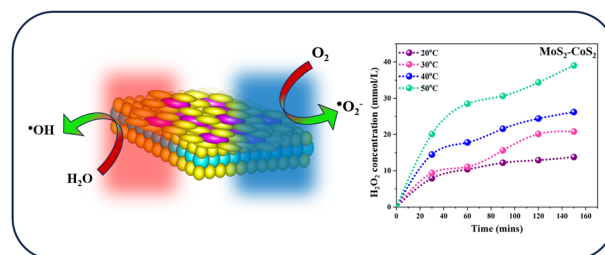


- 1,3-Hydrosulfonylation
- 1,2-Carbonyl migration
- Mild conditions
- Broad substrate scope
- Good functional group tolerance
- Scalable

9920

MoS<sub>2</sub>/CoS<sub>2</sub> heterostructures as a thermoelectric-catalyst for H<sub>2</sub>O<sub>2</sub> generation under a small temperature gradient

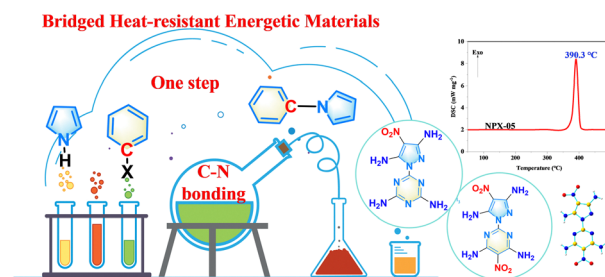
Johnson Mary Leeda Rani Abisharani, Yangyang Wan, Qian Yu,\* Yuyan Xu, Yinhua Jiang, Jun Qian, Shun Li, Li Li, Siew Yee Wong, Xu Li\* and Jianming Zhang\*



9924

## Facile synthesis of bicyclic heat-resistant energetic materials via a C–N coupling strategy

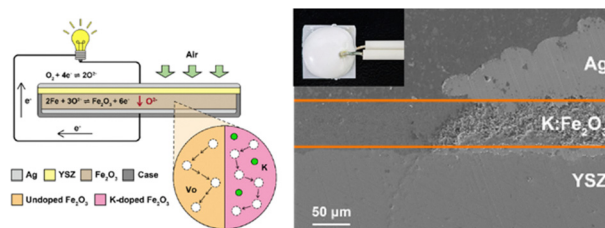
Xiu'e Jiang, Mingren Fan, Ruihui Wang, Yi Wang\* and Qinghua Zhang\*



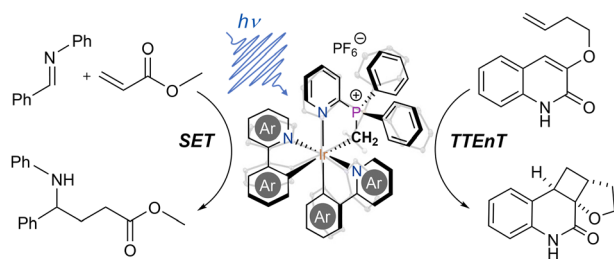
9928

Enhanced all-solid-state iron–air batteries via low-level K<sup>+</sup> doping in iron oxide

Hao Wang, Bingqian Sun and Cheng Peng\*



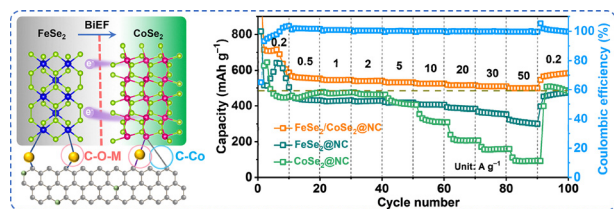
9932



### Cyclometallated phosphonium ylide-based iridium(III) photocatalysts

Oussama Fayafrou, Juliette Zanzi, Carine Duhayon, Jean-Baptiste Sortais, Olivier Baslé\* and Yves Canac\*

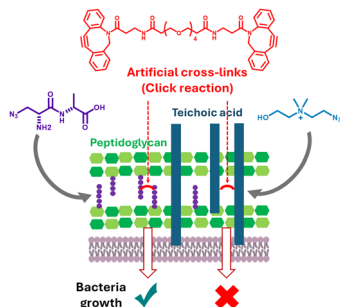
9936



### Bimetallic FeSe<sub>2</sub>/CoSe<sub>2</sub> heterojunction nanoparticles anchored on porous N-doped carbon nanosheets for high-rate sodium-ion storage

Xinqi Shen, Mingxing Yang, Chengkun Guo, Dandan Wang, Shuocong Duan, Zhuosen Wang, Yunfeng Chao, Jianhua Zhu\* and Xinwei Cui

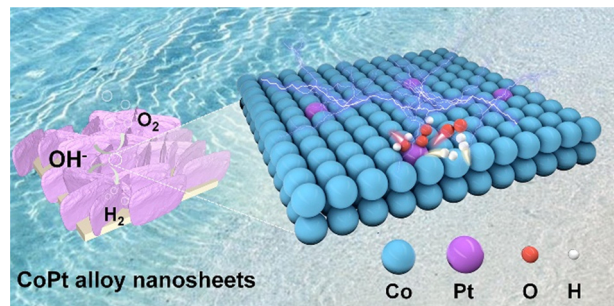
9940



### Cross-linking teichoic acids by click chemistry prevents bacterial cell growth

Morgane Baudoin, Anne Chouquet, Célia Boyat, Cédric Laguri, André Zapun, Basile Pères, Cecile Morlot, Yung-Sing Wong\* and Claire Durmort\*

9944



### Ultralow platinum-doped self-supported CoPt alloy nanosheets for efficient overall water splitting

Yatao Yan, Zhi-An Ye, Yongjian Xu, Jingjing Jiang,\* Rongfang Zhao, Fang Guo,\* Chunsheng Li\* and Ming Chen\*

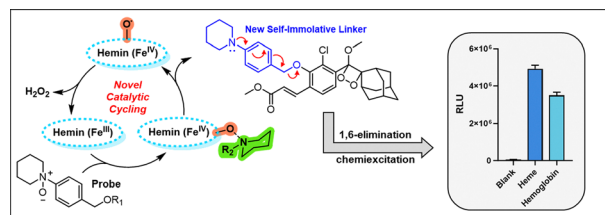


## COMMUNICATIONS

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### Heme-catalyzed reduction of N-oxide and its application to sensing heme and hemoglobin via a chemiluminescent probe

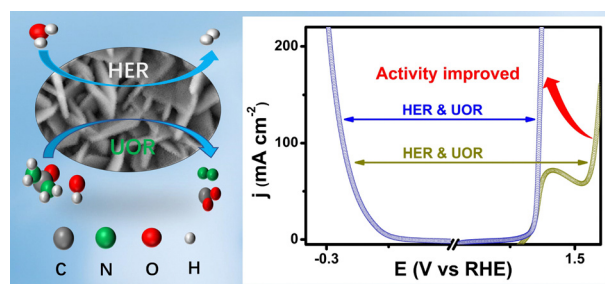
Pengfei Lei, Chen Chen, Xuehui Liu, Shuang Wang, Jing Li, Xiang Lv and Chong-Jing Zhang\*



9952

### NiMoO<sub>4</sub> decorated Co(OH)<sub>2</sub> nanosheets as an efficient bifunctional electrocatalyst for urea-assisted water splitting

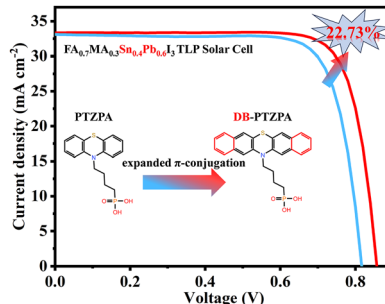
Feng Jing,\* Zhen Liu, Sihan Fu, Bo Cheng, Zhiyi Wang and Kangwen Qiu\*



9956

### Expanding the conjugated benzene rings of phenothiazine phosphonic acid for efficient tin-lead mixed perovskite solar cells with a Sn/Pb ratio of 0.4 : 0.6

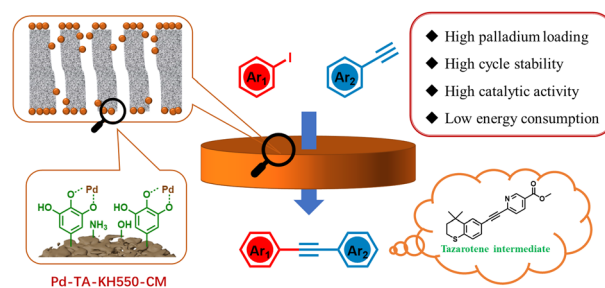
Gangsen Su, Qiang Sun, Dong He, Tianle Cheng, Haojie Chen, Yuchen Pan, Jinfeng Huang, Siyuan Tang and Zhubing He\*



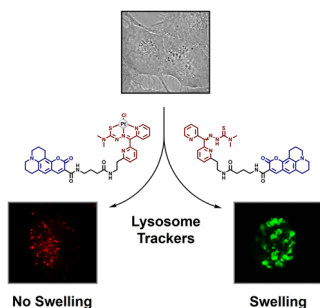
9960

### A Pd-tannic acid-loaded ceramic catalytic membrane for the flow-through Sonogashira reaction

Haoran Li, Xiaochun Bao, Jiacheng Rui, Yong Zhou, Liang Shen, Lianzeng Zhang, Chenjie Zhu, Rizhi Chen\* and Xiaojin Wu\*



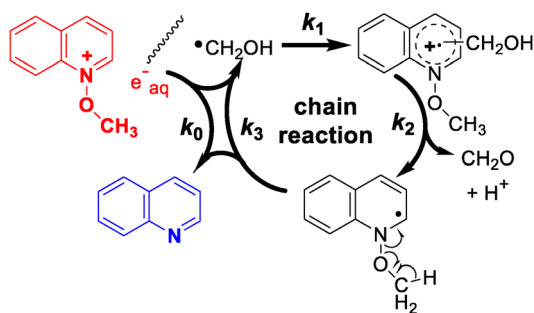
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### Design and application of a non-toxic platinum derivative of the metal chelator Dp44mT for use as a long-term stable lysosome tracker

Nandan Sheernaly, Axel Steinbrueck, Jasmine Ochs, Frank Peeters, Ronja Fiedler, Franz Narberhaus, Jacqueline Heinen-Weiler and Nils Metzler-Nolte\*

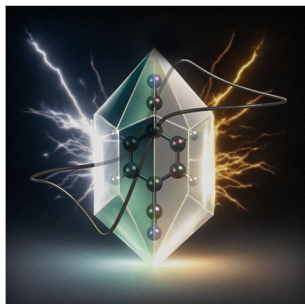
9968



### Chain-release of quinoline-based drugs from *N*-alkoxyquinoline prodrugs upon radiolytic one-electron reduction

Robert F. Anderson,\* Hamish S. Sutherland and Andrew J. Marshall

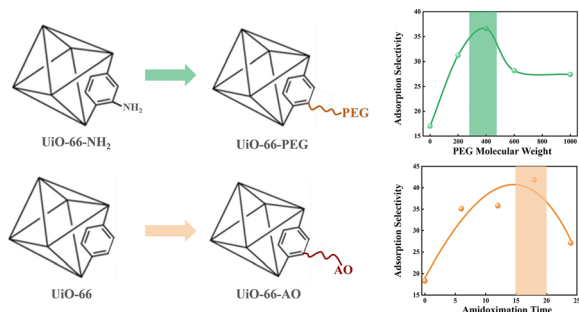
9972



### Syntheses and characterisation of terephthalonitrile radical salts

Meng-Ting Suo, Jouke A. Fleege, Nathan J. Yutronkie, Vincent L. Nadurata, Dmitry Chernyshov, Mathieu Rouzières, Aaron Mailman, Rodolphe Clérac\* and Pierre Dechambenoit\*

9976



### CO<sub>2</sub>-selective molecular recognition in UiO-66 via post-synthetic polyethylene glycol/amidoxime functionalization

Tao Hong, Mengdan Ma, Yu Li, Shujuan Wang, Anning Zhou and Xinli Jing\*



## CORRECTION

9980

**Correction: Ratiometric fluorescent probes for selective and sensitive visualization of bacterial microenvironment protease activity**

Qinghua Wang, Xiang Wang, Ying Sun, Xiaoxiao Yang, Leilei Zhang, Qingyang Zhang, Zhi-Qiang Hu and Hai-Yu Hu\*

