

# ChemComm

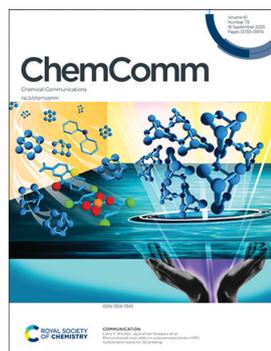
Chemical Communications

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## IN THIS ISSUE

ISSN 1359-7345 CODEN CHCOFS 61(73) 13733-13974 (2025)



### Cover

See Larry F. Rhodes, Jayaraman Sivaguru *et al.*, pp. 13864–13867. Image reproduced by permission of Rhodes *et al.* from *Chem. Commun.*, 2025, **61**, 13864. Cover image created by Robert Musser.



### Inside cover

See Haruki Nagakawa and Tetsu Tatsuma, pp. 13868–13871. Image reproduced by permission of Haruki Nagakawa from *Chem. Commun.*, 2025, **61**, 13868.

## PROFILE

13746

### Contributors to the Emerging Investigators collection 2025: Part 1

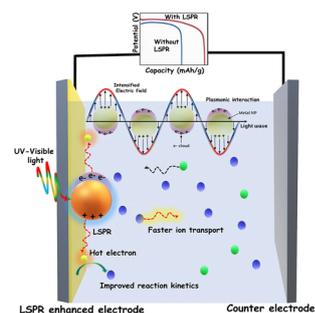


## HIGHLIGHTS

13753

### Harnessing plasmonic charge dynamics for next-generation battery chemistries

Padmini Moorthy, Sakthivel Kaliyaperumal, Tim Albrecht and Karthik Kiran Sarigamala\*



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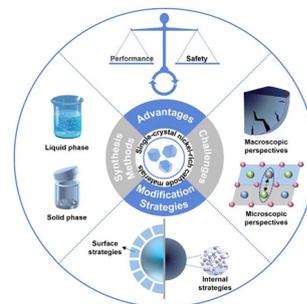
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## HIGHLIGHTS

13780

**Single-crystal nickel-rich cathode materials: fundamentals, challenges and prospects**

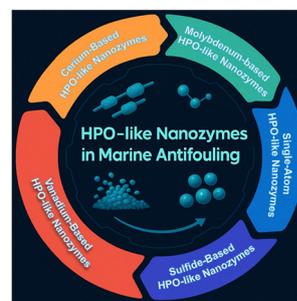
Jianzheng Gao, Congrui Ouyang, Jin Wang, Wenhao Yu,\* Jiapei Wang,\* Shengming Xu and Xuewei Lv\*



13795

**Nanozymes in marine antifouling applications: a focus on haloperoxidase activity**

Junzhi Yi, Yihe Zhang,\* Na Zhang,\* Caixia Gao, Shuo Zhao, Jiangbin Zhao, Jing Liu and Ruoyu Jia

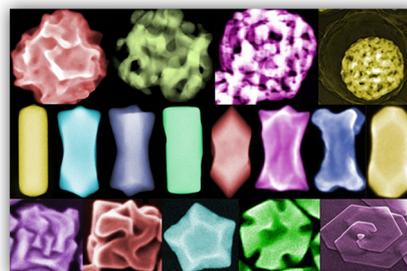


## FEATURE ARTICLES

13807

**A repertoire of gold-based nanostructures with integrated optical and catalytic tunabilities**

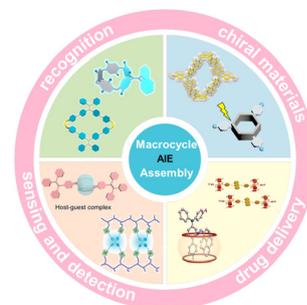
Hui Wang



13827

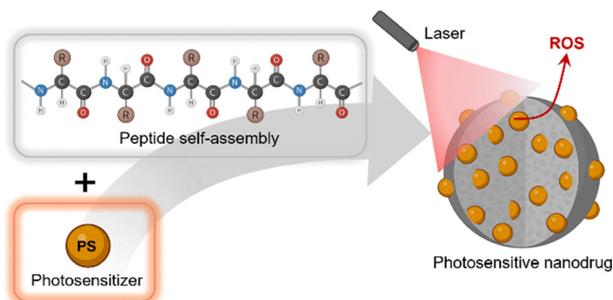
**Aggregation-induced emission in synthetic macrocycle-based supramolecular systems**

Ao Liu and Ying-Wei Yang\*



## FEATURE ARTICLES

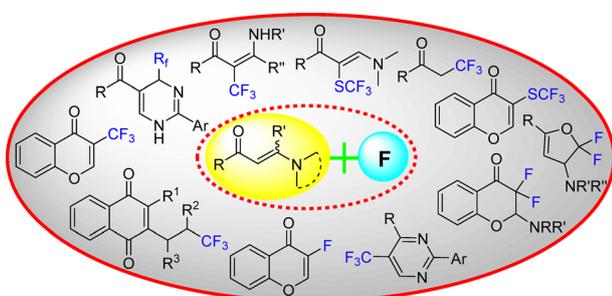
13841



### Peptide self-assembly meets photodynamic therapy: from molecular design to antitumor applications

Shukun Li, Jan C. M. van Hest, Ruirui Xing\* and Xuehai Yan\*

13852

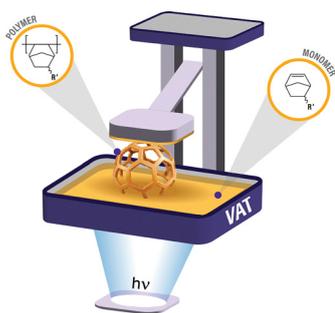


### Accessing diverse fluorinated organic molecules by fluoro-functionalization reactions of enaminones

Baoli Zhao,\* Jingyan Liu and Jie-Ping Wan\*

## COMMUNICATIONS

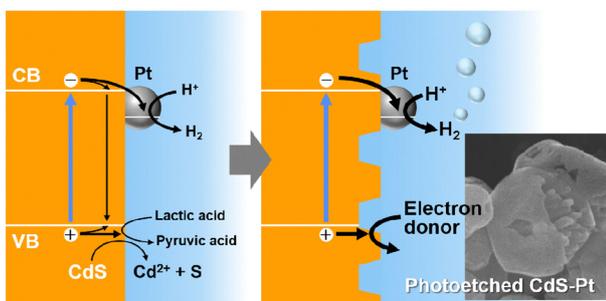
13864



### Photoinitiated vinyl addition polymerized (photo-VAP) norbornene resins for 3D printing

Kyle Cushman, Guodong Deng, Kavyasree Manal, Mark R. Yarolimek, Caleb L. Cipkar, Steffen Jockusch, Larry F. Rhodes\* and Jayaraman Sivaguru\*

13868



### Morphology optimization of a CdS–Pt photocatalyst by photoetching for hydrogen production with high quantum efficiency

Haruki Nagakawa\* and Tetsu Tatsuma\*

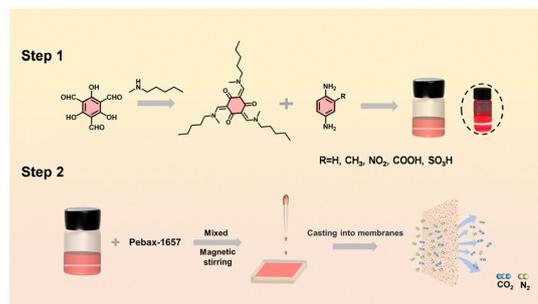


## COMMUNICATIONS

13872

### Building high-performance mixed matrix membranes from stable COF colloids for CO<sub>2</sub>/N<sub>2</sub> separation

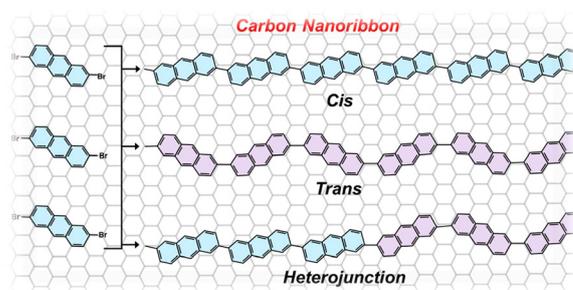
Qingyang Zou, Handan Cui, Feng Zhang, Qianpan Guo, Yufei Liu, Chenxiang Ai, Chunyue Pan, Shuai Gu, Guipeng Yu, Baosheng Wei\* and Juntao Tang\*



13876

### On-surface synthesis and characterization of carbon nanoribbon heterojunctions from a single precursor

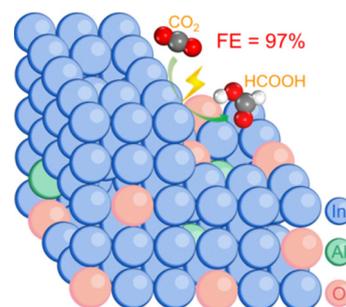
Like Sun, Yanglong Liao, Yunfei Ma, Ying Tao, Ying Li,\* Zhi Chen,\* Hongli Sun\* and Chenliang Su



13880

### Lewis acid-mediated In/In<sub>2</sub>O<sub>3</sub> heterointerfaces with abundant oxygen vacancies boosting CO<sub>2</sub> electroreduction into formate

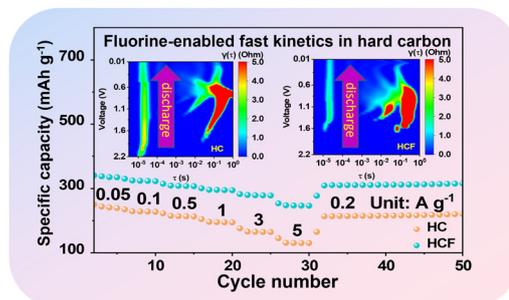
Dongxing Tan,\* Xianfang Yin, Hengrui Kang, Jing Wang, Dan Zhang and Yuanyuan Feng\*



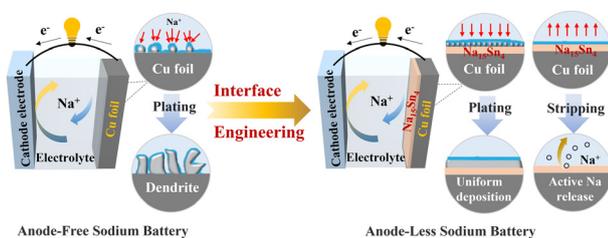
13884

### Fluorine doping of biomass-derived hard carbon for boosted sodium-ion storage

Kongqing Yu, Tiantian Wei, Xin Tao,\* Rulin Zhu, Jingjing Xie, Jun Li,\* Huile Jin,\* Shun Wang and Jichang Wang\*



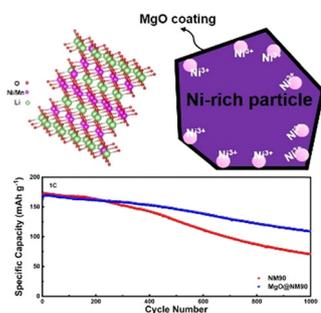
13888



### A chemically pre-sodiated $\text{Na}_{15}\text{Sn}_4$ interphase enables high-reversibility anode-less sodium-metal batteries

Jiacheng Liu, Liuyan Hou, Ahu Shao, Helin Wang, Zhiqiao Wang, Jiawen Tang and Yue Ma\*

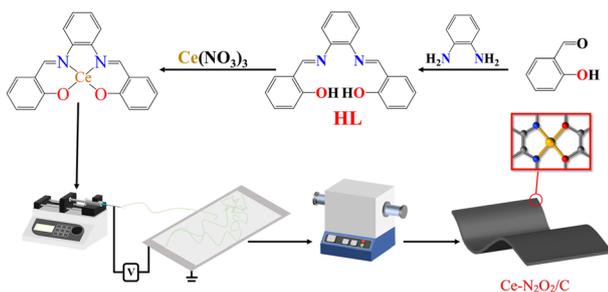
13892



### Enhancing the cycling stability of Co-free high-Ni layered cathodes through MgO surface engineering

Zi-Ting Zhou, Rui-Jie Luo, Chong-Yu Du, Chong-Hin Tam, Jie Zeng, Zhe Qian, Zhe Mei, Yue Gu, Cheng Zhang, Shuang-Fu Li, Ming-Xuan Yang, Hang Wang, Huan Ni, Xiang Yin, Liu Na, Kai Wu and Yong-Ning Zhou\*

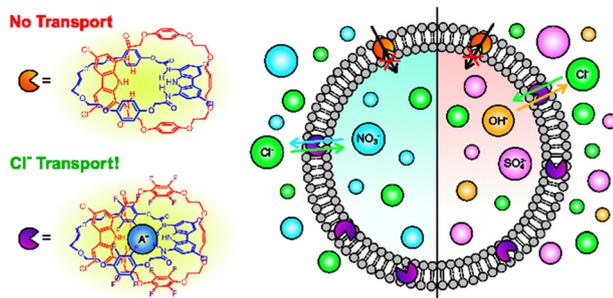
13896



### Uniformly structured asymmetric coordination Ce single-atom catalysts for stable and efficient oxygen reduction reaction

Guangxu Yao, Dong Liu, Rongwei Xu, Guolong Qiu, Han Guo, Huijuan Zhang\* and Yu Wang\*

13900



### Anion transport across lipid bilayers by a hydrogen bonding homo[2]catenane

Krzysztof M. Bąk, Olga Kisiel, Debashis Mondal, Magdalena M. Zimnicka and Michał J. Chmielewski\*

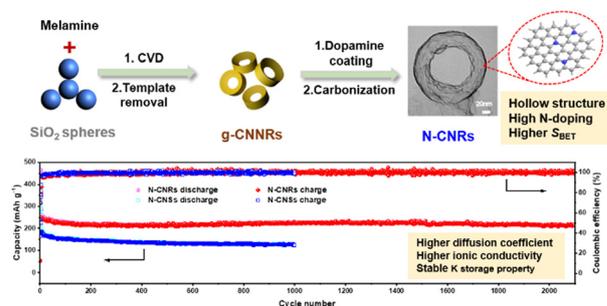


## COMMUNICATIONS

13904

## Novel hollow carbon nanorings with biconcave structure for advanced potassium ion batteries

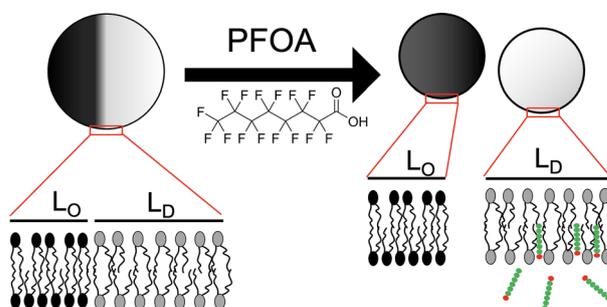
Xin Pan, Honghui Bi, Xuzhen Wang,\* Zongbin Zhao, Lishen Ai and Jieshan Qiu



13908

## PFOA induces fission of phase-separated phospholipid vesicles

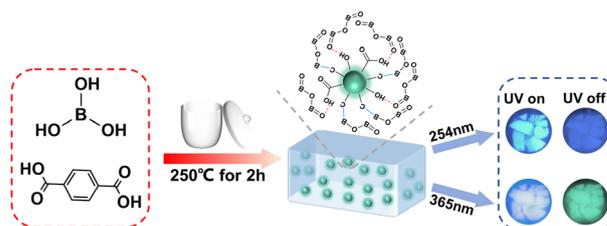
Seungsu Han, Emad Pirhadi, Xin Yong\* and Sangwoo Shin\*



13912

## Long-lived room-temperature phosphorescent carbon dot-based composites for anti-counterfeiting and information encryption

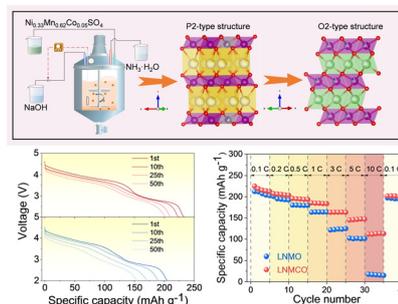
Yanni Jie,\* Jiang Yan, Zengbo Fan, Fuchun Li, Ting Meng, Zhenli Guo and Penggao Dai\*



13916

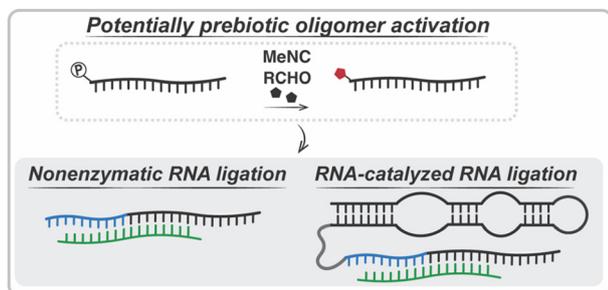
## Tuning the rate performance in O2-type layered manganese-based oxides through cobalt doping

Junda Li, Xiaoxia Yang,\* Guanjie Yan,\* Jilu Zhang, Qin Wang, Chunliu Li, Lajun Liu\* and Weibo Hua\*



## COMMUNICATIONS

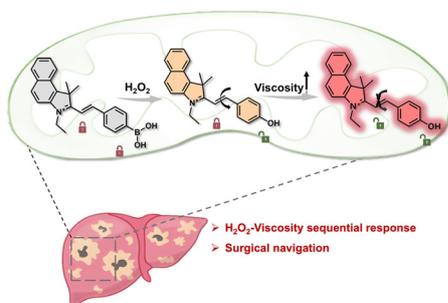
13920



## Potentially prebiotic isocyanide activation chemistry drives RNA assembly

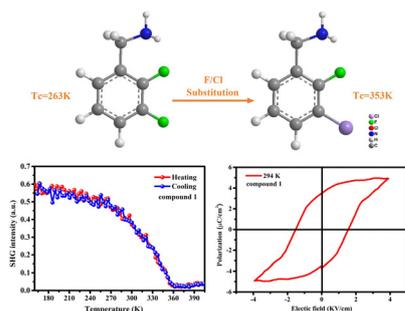
Stephanie J. Zhang, Xiwen Jia, Saurja DasGupta\* and Jack W. Szostak\*

13924

A mitochondria-targeted sequence-activated fluorescent probe responsive to H<sub>2</sub>O<sub>2</sub> and viscosity for imaging and surgical navigation of hepatocellular carcinoma

Wen Zhang, Yuting Sheng, Min Zhang, Qiong Wang, Xin Wang, Hui Wang, Wei Zhang, Ping Li\* and Bo Tang

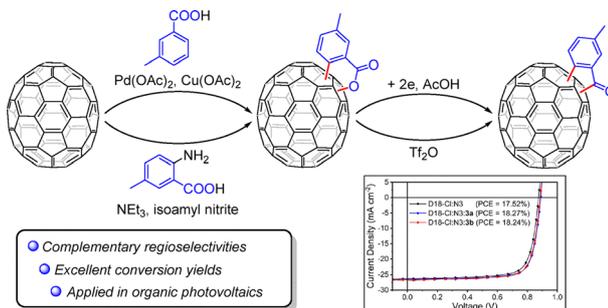
13928



## Benzylamine cation-directed introduction of a polar structure in a stator-rotor crown ether system

Feiyan Liu, Yaozhen Wu, Guoyong Chen, Guobing Yan,\* Xiancai Li\* and Zhenhong Wei\*

13932



## [70]Fullerene-fused lactones: synthesis, conversion and photovoltaic application

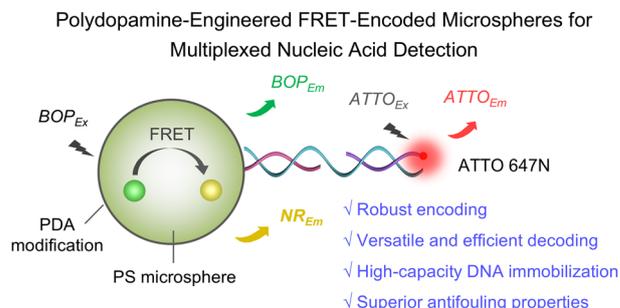
Wen-Jie Qiu, Zhiwei Xu and Guan-Wu Wang\*



13936

### Polydopamine-engineered FRET microspheres for robust dual-readout multiplexed nucleic acid analysis

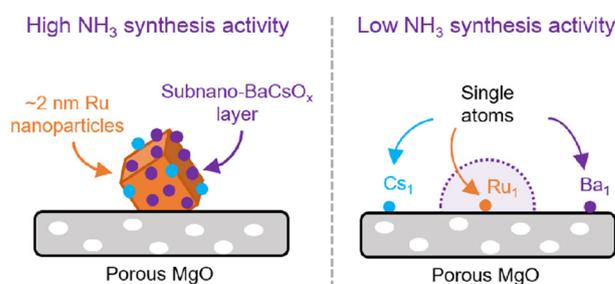
Xinrui He, Yilei Zhu, Yu Guo, Jing Chen, Liwen Tang, Jie Song, Yi Chen,\* Dongzhi Yang\* and Chao Guo\*



13940

### Porous MgO-supported Ba–Cs–Ru/MgO catalysts for superior NH<sub>3</sub> synthesis and the effect of Ru loading on dispersion of Ru and promoters

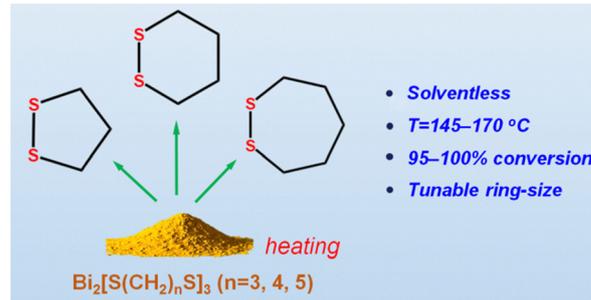
Shunsheng Wang, Xiaoliang Yang and Long Kuai\*



13944

### Thermolysis of bismuth(III) dithiolates toward cyclic disulfides with tunable ring size and near-unity conversion

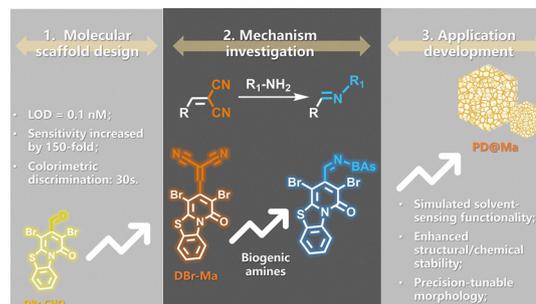
Xianglong Liu, Tingting Wang, Longhua Li\* and Junli Wang\*



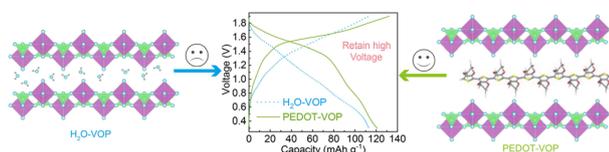
13948

### Real-time monitoring of food spoilage in a stable gel platform using a benzothiazole-based fluorescent sensor

Zheng-Xing Zeng, Nan Wang,\* Yi-Miao Zhang, Guo-Xiang Lan, Hua-Feng Mao, Hou-Qi Ning,\* Lin-Jia Zhang, Jing-Ting Wen, Zhou-Yu Wang\* and Xiao-Qi Yu



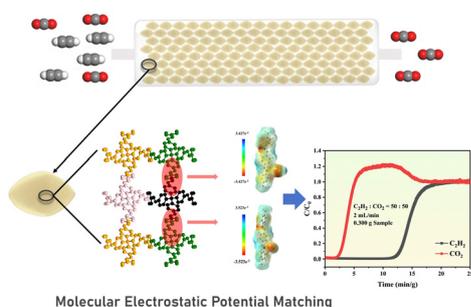
13952



### A polymer pillar for the VOPO<sub>4</sub> cathode to retain voltage stability in aqueous zinc batteries

Yijie Jiang, Tianshun He, Ruoyao Wang, Hua-Yu Shi,\*  
Chen Li, Shuo Li, Xiao-Xia Liu and Xiaoqi Sun\*

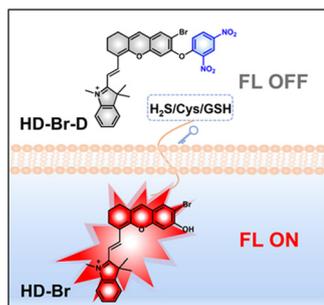
13956



### Electrostatic potential matching guided ultra-microporous COF-300 for C<sub>2</sub>H<sub>2</sub>/CO<sub>2</sub> separation with scale-up synthesis

Qianlong Wang, Xu Yang, Hui Li, Baoju Li,\*  
Bingwen Li,\* Xinfang Wang and Zhe Wang\*

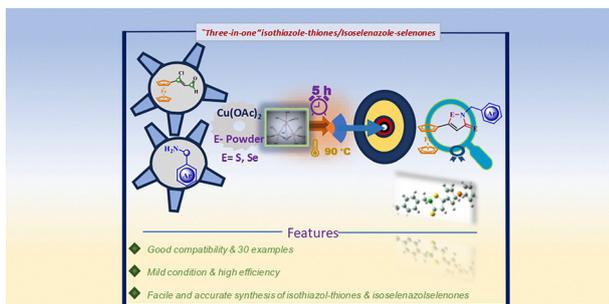
13960



### A mitochondria-targeted near-infrared fluorescent probe for detecting H<sub>2</sub>S, Cys, and GSH simultaneously in tumors

Miaomiao Zhang, Ying Yang, Zijuan Hai,  
Shusheng Zhang and Bin Zhao\*

13964



### Synthesis of ferrocenyl/phenyl isothiazole-3-thione and isoselenazole-3-selenone as new heterocycles

Deepak Sharma, Vijesh Tomar and Raj K. Joshi\*

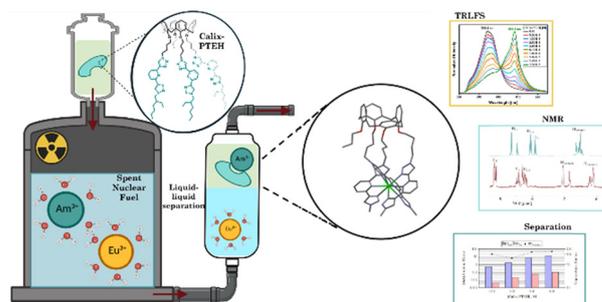


## COMMUNICATIONS

13968

### A preorganized triarmed bis-triazolypyridine-calix[4]arene with high affinity and selectivity for minor actinides for nuclear waste treatment

Davide Baccelli, Jonas Stracke, Maria Chiara Gullo, Patrik Weßling, Symeon Grivas, Francesco Rispoli, Stefano Volpi, Andrea Mele, Andreas Geist, Petra J. Panak, Francesco Sansone, Thomas Sittel,\* Elena Macerata\* and Alessandro Casnati\*



## CORRECTION

13972

### Correction: A Lewis basic CeO<sub>2</sub> cocatalyst expedites two-electron air electroreduction at the theoretical limit

Lili Jiang, Shan Ding, Haiyun Li, Jingjing Duan, Minmin Yan\* and Sheng Chen\*

