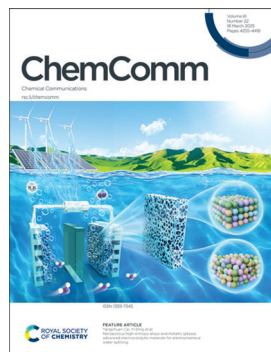


## IN THIS ISSUE

ISSN 1359-7345 CODEN CHCOFS 61(22) 4255-4418 (2025)



### Cover

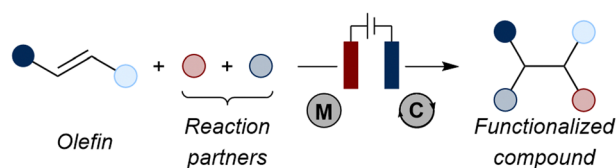
See Yangchuan Cai, Yi Ding *et al.*, pp. 4279–4292.  
Image reproduced by permission of Yi Ding from *Chem. Commun.*, 2025, 61, 4279.

## HIGHLIGHT

4265

### Navigating electrochemical oxidative functionalization of olefins: selected mechanistic and synthetic examples

Chun Qi, Marharyta Laktsevich-Iskryk and Daniele Mazzarella\*



Radical and ionic mechanisms

Use of mediators

Direct electrochemistry

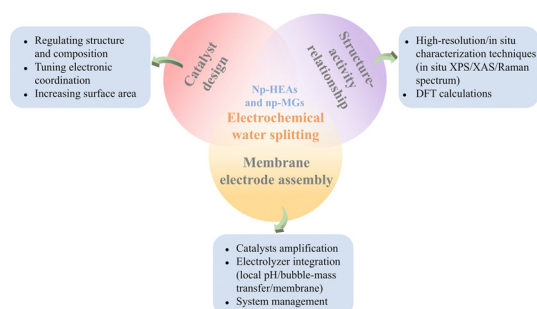
Catalytic activation modes

## FEATURE ARTICLES

4279

### Nanoporous high-entropy alloys and metallic glasses: advanced electrocatalytic materials for electrochemical water splitting

Yu Zhang, Yangchuan Cai\* and Yi Ding\*



# RSC Advances

At the heart of open access for  
the global chemistry community

Editor-in-chief

Russell J Cox

Leibniz Universität Hannover, Germany

We stand for:



**Breadth** We publish work in all areas of chemistry and reach a global readership



**Affordability** Low APCs, discounts and waivers make publishing open access achievable and sustainable



**Quality** Research to advance the chemical sciences undergoes rigorous peer review for a trusted, society-run journal

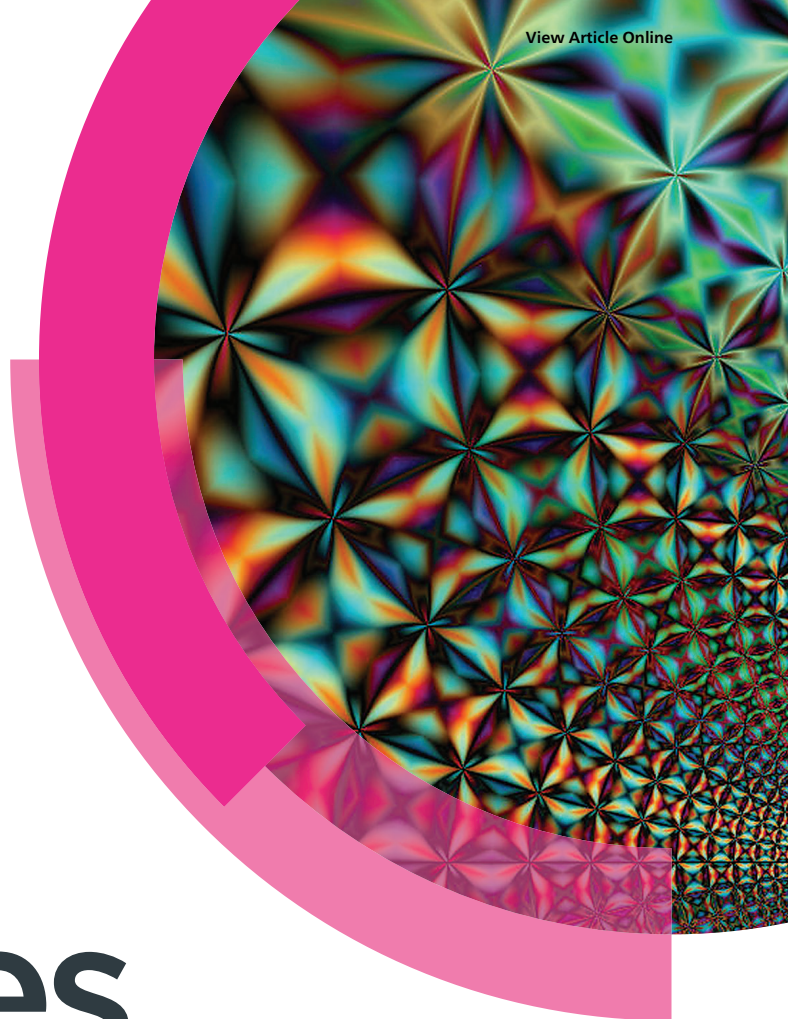


**Community** Led by active researchers, we publish quality work from scientists at every career stage, and all countries

Submit your work now

[rsc.li/rsc-advances](https://rsc.li/rsc-advances)

@RSC\_Adv

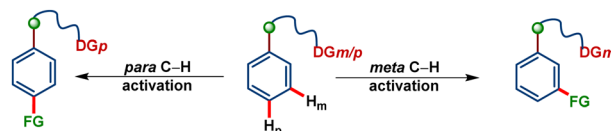


## FEATURE ARTICLES

4293

Palladium catalyzed regioselective distal C (sp<sup>2</sup>)–H functionalization

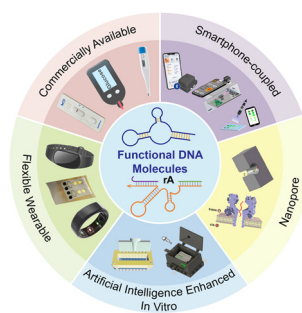
Rachit Singh Chauhan, Yogesh Bairagi, Om Desai, Rafal Kowalczyk\* and Debabrata Maiti\*



4316

## Molecular engineering of functional DNA molecules toward point-of-care diagnostic devices

Jiayin Zhan,\* Siyuan Wang, Xiang Li and Jingjing Zhang\*

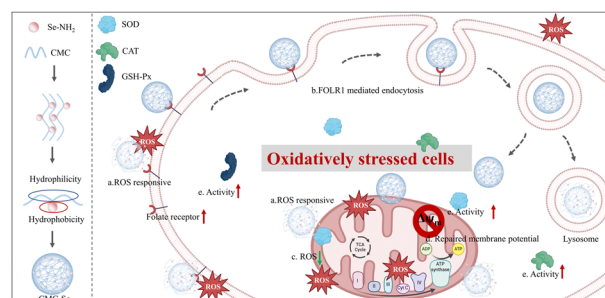


## COMMUNICATIONS

4339

## Cellular uptake mechanisms of a diselenide-based ROS-responsive nanocarrier in oxidatively stressed colon cells

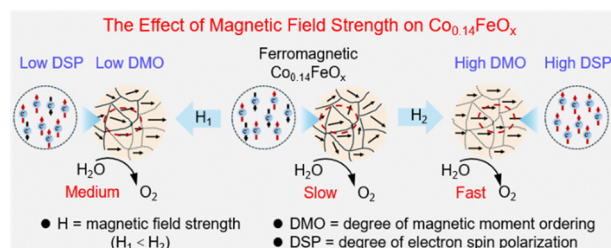
Wanqi Liang, Dong Li, Jinheng Hao, Wenli Dai, Bo-Bo Zhang\* and Qiongqiong Yang\*



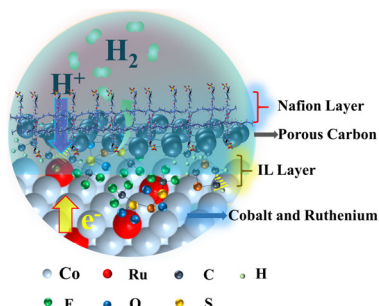
4343

Ferromagnetic transformation of  $\alpha$ -Fe<sub>2</sub>O<sub>3</sub> via Co doping for efficient water oxidation under magnetic field

Hong Wang, Yuan Dong, Jie Ying,\* Ziheng Zhu, Yuan Feng, Yu-Xuan Xiao, Ge Tian, Ling Shen, Wei Geng, Yi Lu, Siming Wu and Xiao-Yu Yang\*



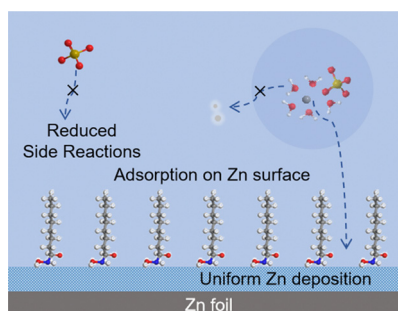
4347



### A hydrophobic ionic liquid enhances electrocatalytic hydrogen evolution reaction on high specific-surface ruthenium-doped cobalt catalysts

Tao Zhang, Longjiang Li, Shucheng Liu and Yi Liu\*

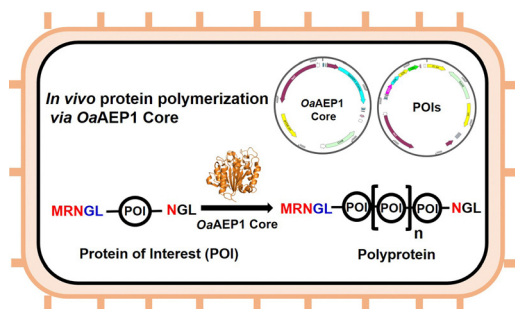
4351



### Ultralow and biodegradable electrolyte additives for dendrite-free Zn anodes

Xinyu Chen, Dongdong Wang, Shaojie Zhang, Gulian Wang, Xiaojian Ma\* and Jian Yang\*

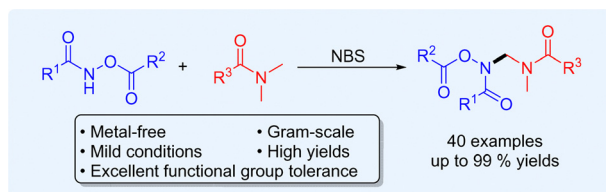
4355



### Intracellular protein ligation and polyprotein synthesis using an asparaginyl endopeptidase core

Renming Liu, Jun Qiu, Yifen Huang, Ziyi Wang and Peng Zheng\*

4359



### NBS-mediated C(sp<sup>3</sup>)-H amidation of *N,N*-dimethylamides with *N*-acyloxamides

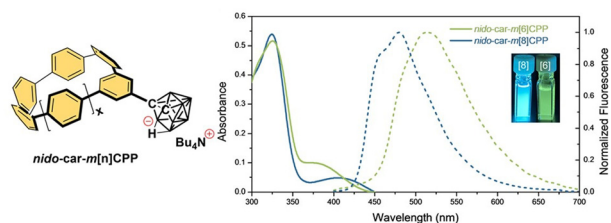
Shuangqing Li, Xianru Xu, Guojuan Yin, Jianhui Chen, Yanshu Luo and Yuanzhi Xia\*



4363

**meta-Cycloparaphenylenes (mCPPs) with pendant carborane**

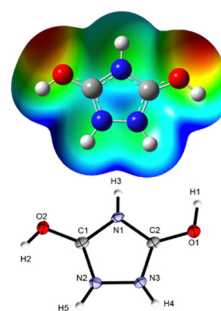
Pengfei Liu, Lingxiao He, Wei Shen, Siliang You, Zhiqiang Song, Bo Du, Sarfaraz Ahmed,\* Hong Yan,\* Ye Sha\* and Xiang Li\*



4367

**Charge distribution and aromaticity in protonated urazole**

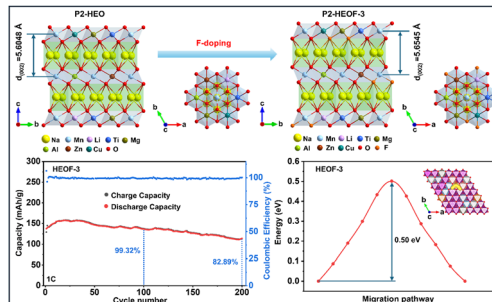
Alexander Nitzer,\* Christoph Jessen and Andreas J. Kornath



4371

**Synthesis of F-doped high-entropy layered oxide as cathode material towards high-performance Na-ion batteries**

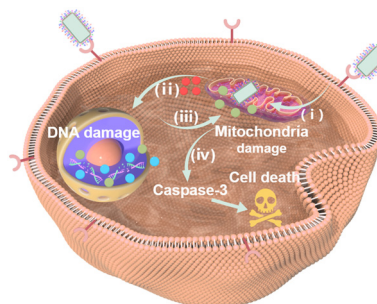
Minghui Cao,\* Miao Cui, Yiping Gong, Zewei Guo, Shuangqing Le, Yangjinhua Wu, Chong Lin, Ke Li, Jingyang Tian\* and Yi Qi\*



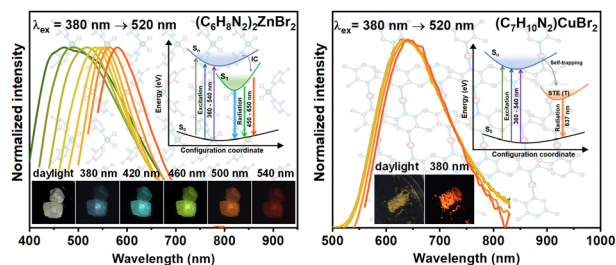
4375

**Nanocapsules with dual-targeting of cell and mitochondria functions for enhanced hypoxia-activated drug therapy**

Fen Li, Ziyi Li, Jing Zhao, Qingqing Zhang, Mengting Wu and Yingshu Guo\*



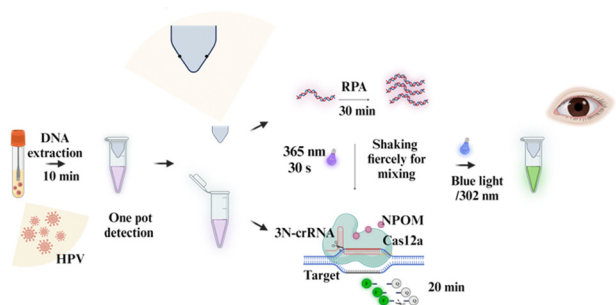
4379



### Unveiling the photophysical mechanisms in low-dimensional Zn/Cu-based metal halides

Chuanyao Yang, Jia Zheng, Chang Xu, Chong Xiao, Yuanyuan Chang, Lei Zhou\* and Xiangnan Gong\*

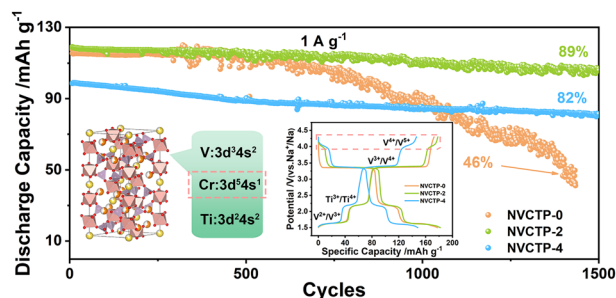
4383



### Visual detection of HPV16 using a photoactivatable CRISPR–Cas12 system

Xiaoya Gu, Zhe Ma, Lin Zhou, Na Li, Shijiang Yu, Fu Wang\* and Ruifang An\*

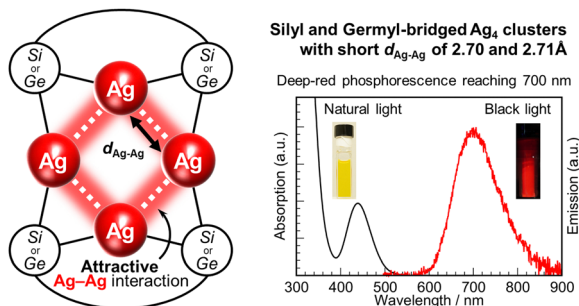
4387



### Activating the high-potential $V^{4+}/V^{5+}$ redox couple for an advanced NASICON sodium-ion cathode

Miaomiao Wang, Lin Zhu, Shuang Xiang, Xiaobing Huang, Huanhuan Li, Haiyan Wang, Yougen Tang and Dan Sun\*

4391



### Silyl- and germeryl-bridged neutral square-planar $Ag_4$ clusters with short Ag–Ag distances exhibiting red emission

Reon Ishii, Yoshimasa Wada\* and Yusuke Sunada\*

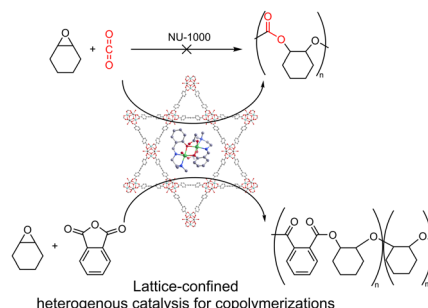


## COMMUNICATIONS

4395

### Teaching copolymerization catalysis to metal–organic frameworks by confining molecular catalysts in lattices

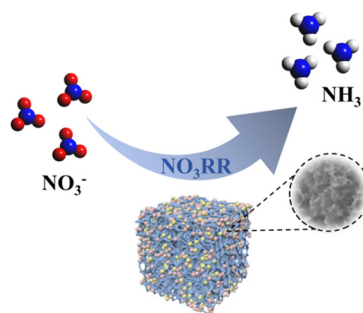
Chao-Yu Chiu, Chia-Her Lin, Pei-Wen Wu, Zhuorigebatu Tegudeer, Chen-Yen Tsai\* and Wen-Yang Gao\*



4399

### Co-engineering of Fe–Mn nanoclusters with porous carbon for enhanced electrocatalytic ammonia synthesis

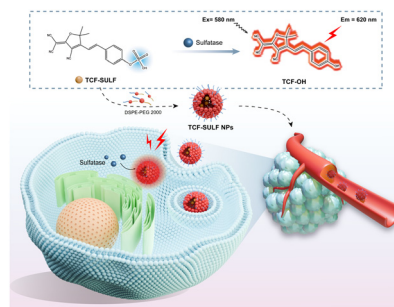
Youqing Wang, Lang Zhang, Caiyun Wang\*, Zhiwei Wang, Yanhong Feng\* and Xijun Liu\*



4403

### A sensitive fluorescent nanoprobe for sulfatase detection and imaging in living cells and *in vivo*

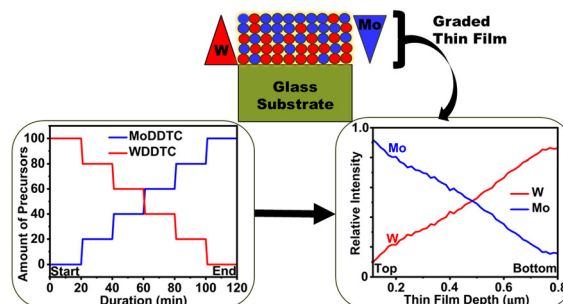
Huijia Liu, Jiaqi Zhang, Li Liu, Wenqing Li, Jing Yang\* and Peng Wang\*



4407

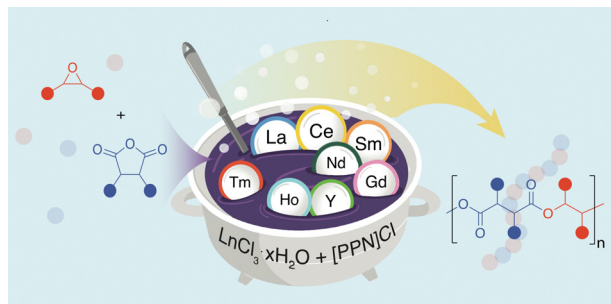
### Gradient aerosol chemical vapor deposition (GA-CVD) for vertically graded thin films of $\text{Mo}_x\text{W}_{1-x}\text{S}_2$ and $\text{W}_x\text{Mo}_{1-x}\text{S}_2$

Abraham Barde, Huda Salam Al-Jurani, Brendan Ward-O'Brien, Mark A. Buckingham, Robert Cernik and David J. Lewis\*



## COMMUNICATIONS

4411



### Effects of Lewis acidity and size of lanthanide salts for ring-opening copolymerization

Zachary A. Wood, Mrityunjay Giri, Harrison Min, Aren Ohanyan, Adrian Guerrero, Mikiyas K. Assefa and Megan E. Fieser\*

## CORRECTION

4415

### Correction: Interstitial and substitutional doping of $\text{Mn}^{2+}$ in 2D $\text{PEA}_2\text{PbBr}_4$ and $\text{BA}_2\text{PbBr}_4$ perovskites

Udara M. Kuruppu, Alvaro J. Magdaleno, Anuraj S. Kshirsagar, Bruno Donnadieu, Ferry Prins\* and Mahesh K. Gangishetty\*

