ChemComm

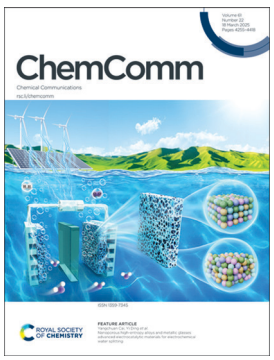
Chemical Communications

rsc.li/chemcomm

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(22) 4255–4418 (2025)



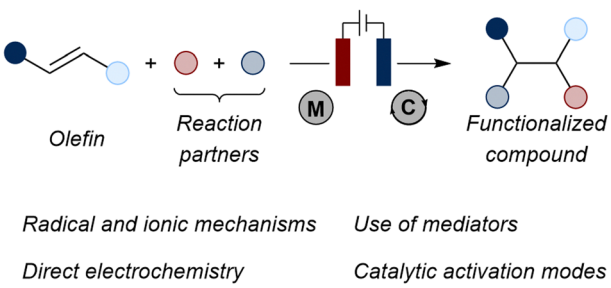
Cover
See Yangchuan Cai, Yi Ding *et al.*, pp. 4279–4292. Image reproduced by permission of Yi Ding from *Chem. Commun.*, 2025, **61**, 4279.

HIGHLIGHT

4265

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

Chun Qi, Marharyta Laktsevich-Iskryk and Daniele Mazzarella*

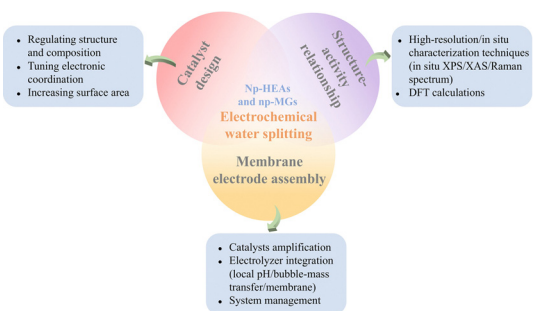


FEATURE ARTICLES

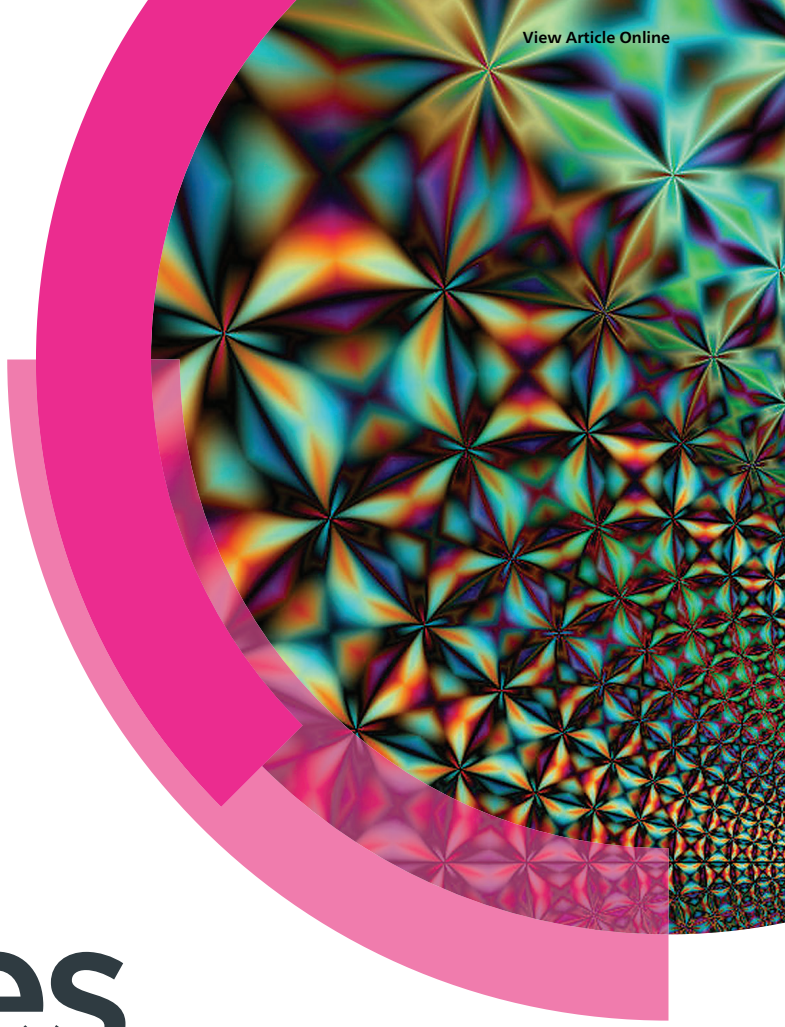
4279

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

Yu Zhang, Yangchuan Cai* and Yi Ding*



ROYAL SOCIETY OF CHEMISTRY



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

@RSC_Adv

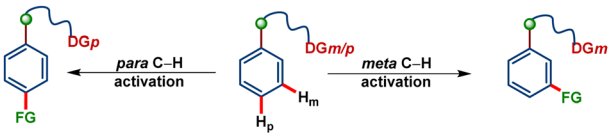
Registered charity number: 207890

FEATURE ARTICLES

4293

Palladium catalyzed regioselective distal C (sp^2)–H functionalization

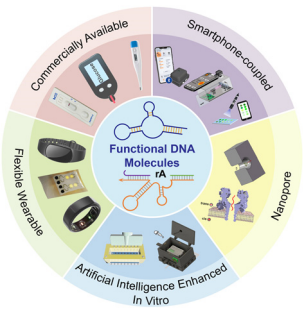
Rachit Singh Chauhan, Yogesh Bairagi, Om Desai, Rafal Kowalczyk* and Debabrata Maiti*



4316

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

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

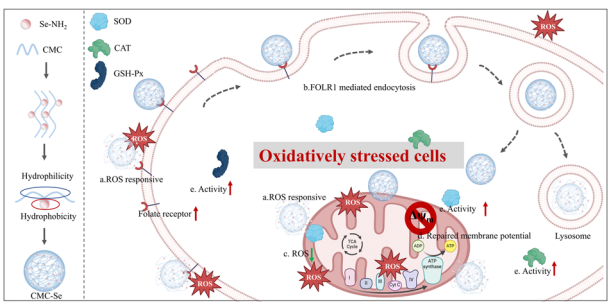


COMMUNICATIONS

4339

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

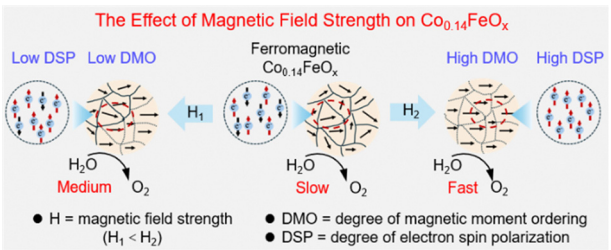
Wanqi Liang, Dong Li, Jinheng Hao, Wenli Dai, Bo-Bo Zhang* and Qiongqiong Yang*



4343

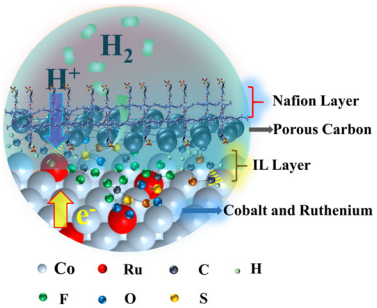
Ferromagnetic transformation of α-Fe_2O_3 *via* Co doping for efficient water oxidation under magnetic field

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*



COMMUNICATIONS

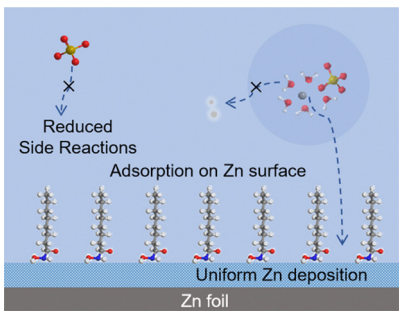
4347



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*

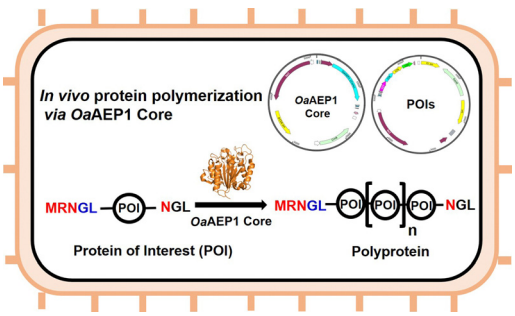
4351



Ultralow and biodegradable electrolyte additives for dendrite-free Zn anodes

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

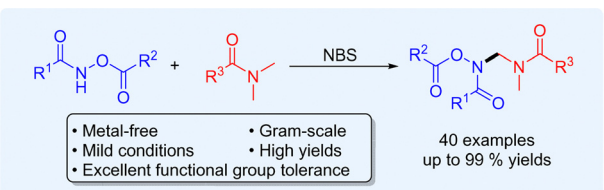
4355



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^3)–H amidation of *N,N*-dimethylamides with *N*-acyloxyamides

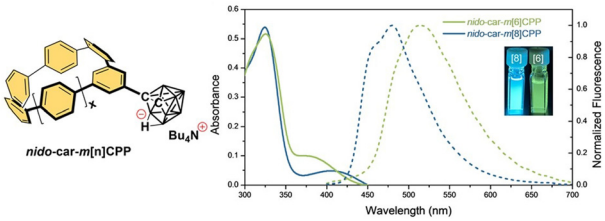
Shuangqing Li, Xianru Xu, Guojuan Yin, Jianhui Chen, Yanshu Luo and Yuanzhi Xia*

COMMUNICATIONS

4363

meta-Cycloparaphenylenes (_m_CPPs) with pendant carborane

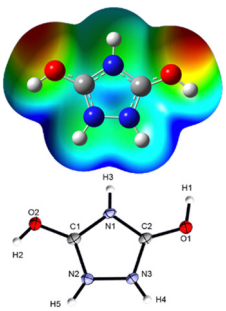
Pengfei Liu, Lingxiao He, Wei Shen, Siliang You, Zhiqiang Song, Bo Du, Sarfaraz Ahmed,* Hong Yan,* Ye Sha* and Xiang Li*



4367

Charge distribution and aromaticity in protonated urazole

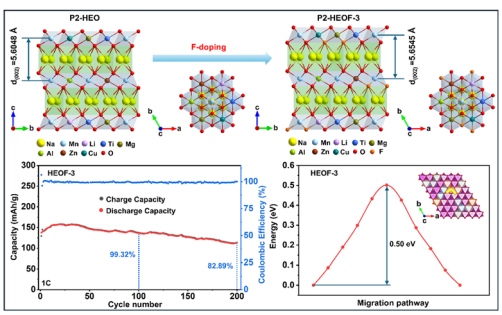
Alexander Nitzer,* Christoph Jessen and Andreas J. Kornath



4371

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

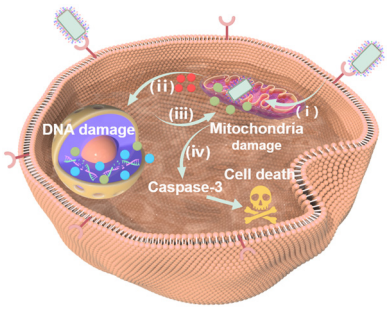
Minghui Cao,* Miao Cui, Yiping Gong, Zewei Guo, Shuangqing Le, Yangjinhua Wu, Chong Lin, Ke Li, Jingyang Tian* and Yi Qi*



4375

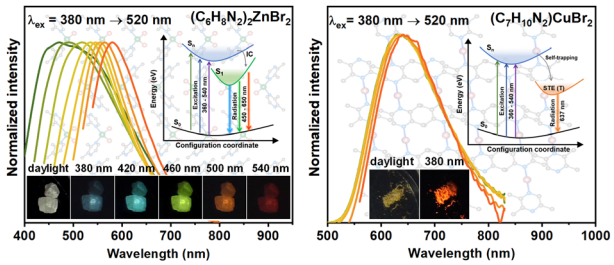
Nanocapsules with dual-targeting of cell and mitochondria functions for enhanced hypoxia-activated drug therapy

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



COMMUNICATIONS

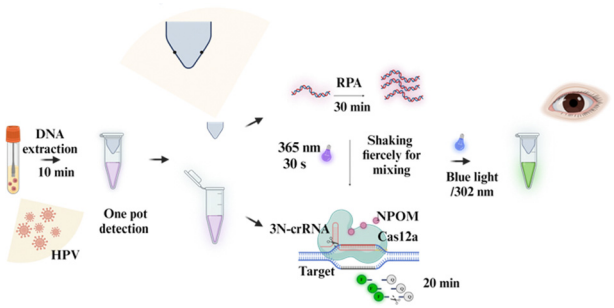
4379



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*

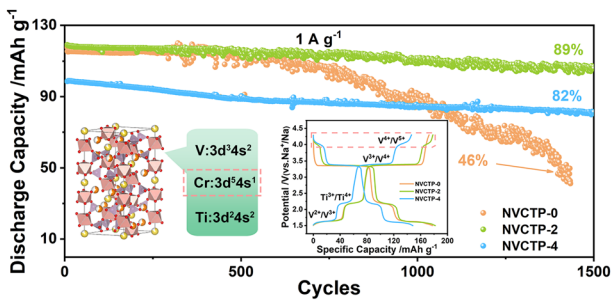
4383



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*

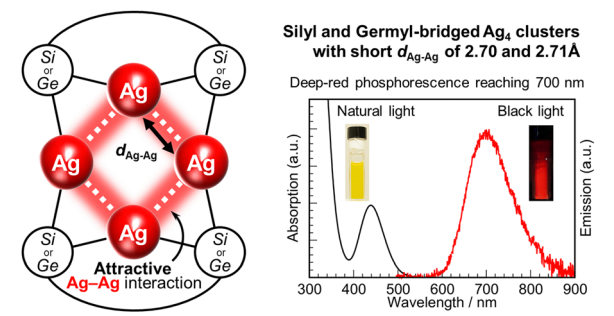
4387



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 germyl-bridged neutral square-planar Ag_4 clusters with short Ag–Ag distances exhibiting red emission

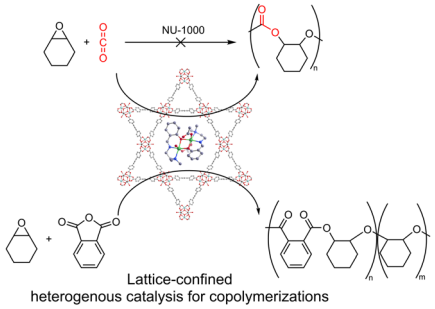
Reon Ishii, Yoshimasa Wada* and Yusuke Sunada*

COMMUNICATIONS

4395

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

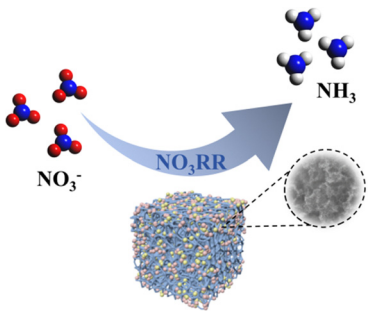
Chao-Yu Chiu, Chia-Her Lin, Pei-Wen Wu, Zhuorigebatu Tegudeer, Chen-Yen Tsai* and Wen-Yang Gao*



4399

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

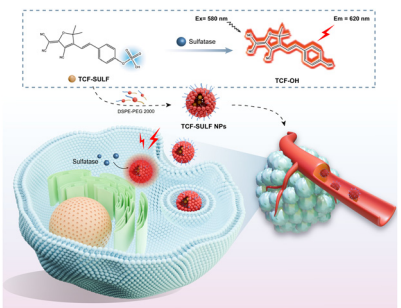
Youqing Wang, Lang Zhang, Caiyun Wang,* Zhiwei Wang, Yanhong Feng* and Xijun Liu*



4403

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

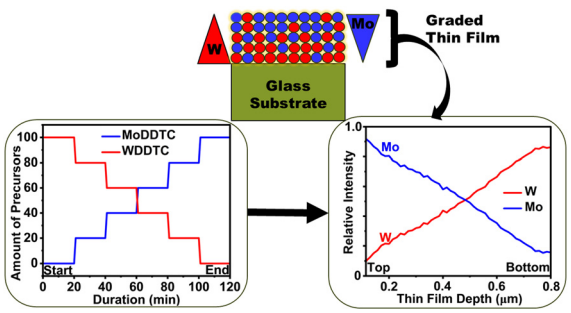
Huijia Liu, Jiaqi Zhang, Li Liu, Wenqing Li, Jing Yang* and Peng Wang*



4407

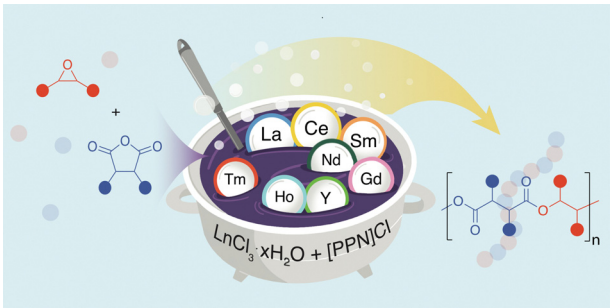
Gradient aerosol chemical vapor deposition (GA-CVD) for vertically graded thin films of $Mo_xW_{1-x}S_2$ and $W_xMo_{1-x}S_2$

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 Mn^{2+} in 2D PEA_2PbBr_4 and BA_2PbBr_4 perovskites

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