

IN THIS ISSUE

ISSN 1359-7345 CODEN CHCOFS 61(41) 7345–7520 (2025)



Cover

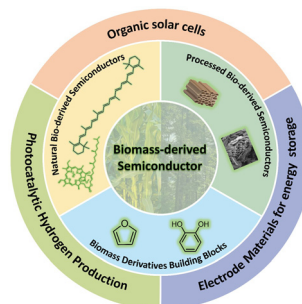
See XiaoYing Sun, Bo Li
et al., pp. 7368–7383.
Image reproduced by
permission of Bo Li from
Chem. Commun.,
2025, **61**, 7368.

HIGHLIGHT

7356

Biomass-derived semiconductors for renewable energy technologies

Siyu Ji, Shuyao Tian, Pengcheng Guan and Xu-Hui Jin*

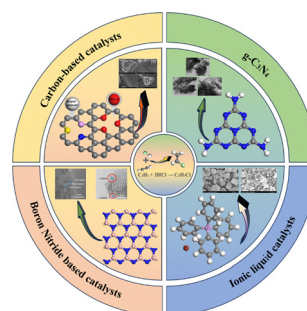


FEATURE ARTICLES

7368

Current status and perspective of metal-free materials as catalysts in acetylene hydrochlorination: active site, dopant, and mechanism

HuiJie Wang, LingLing Shang, BaiRan Wang,
XiaoYing Sun* and Bo Li*



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

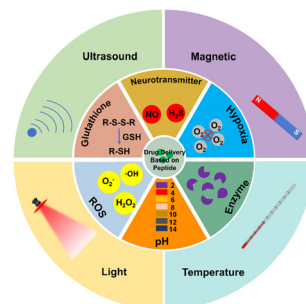


FEATURE ARTICLES

7384

Stimuli-responsive peptide-based nanodrug delivery systems for tumor therapy

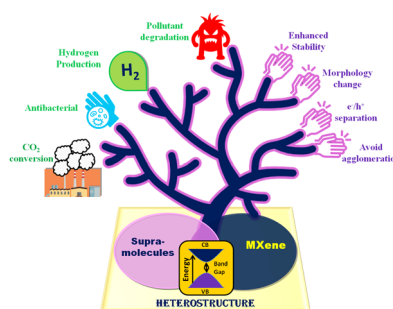
Lei Zhou, Ting-Jie Zhang, Lu Zhang, Qiu-Ying Deng, Zhi-Yu Xia, Si-Lin Chen, Dong-Bing Cheng,* Zeng-Ying Qiao* and Hao Wang*



7408

Supramolecular structure@MXenes for photocatalytic applications – a review

Pankaj Verma, Jan H. van Maarseveen and N. Raveendran Shiju*

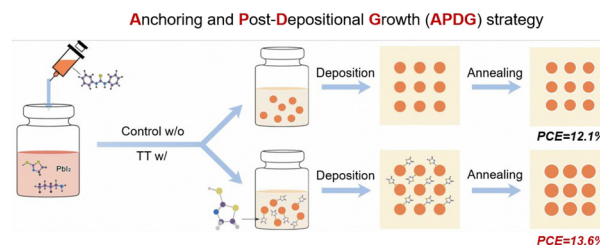


COMMUNICATIONS

7426

Anchoring and post-depositional growth enables matrix manipulation of PbS QD inks and efficient solar cells

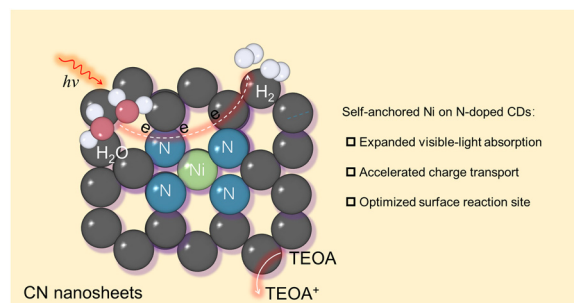
Haotian Gao, Leliang Song, Kunyuan Lu,* Qingda Chang, Haoyu Zhao, Xiaobo Ding, Qianqian Lin, Chuang Zhang, Zeke Liu* and Wanli Ma*



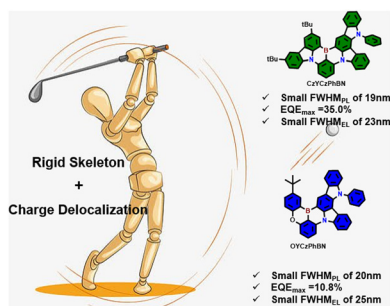
7430

Self-anchored nickel cocatalyst on nitrogen-doped carbon dots for enhanced photocatalytic hydrogen evolution

Wei qin Yin, Ganghua Zhou, Xin Ning,* Xiaozhi Wang* and Xingwang Zhu*



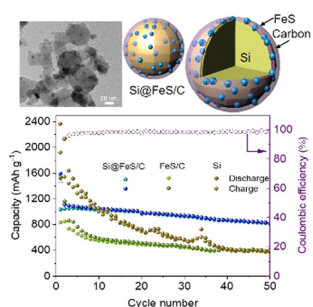
7434



Synergistic optimization of MR-TADF materials via a rigid skeleton and charge delocalization for enhanced photoluminescence and electroluminescence performance

Jun-Yi Wang, Hao-Ran Zheng, Xunwen Xiao* and Xu-Feng Luo*

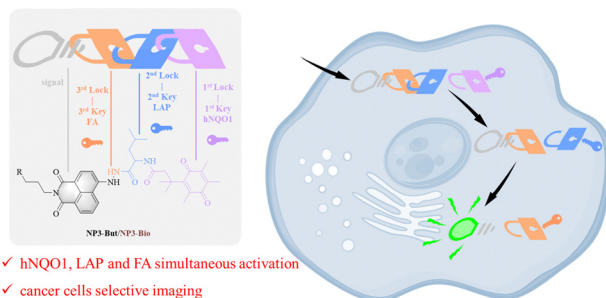
7438



Engineering iron sulfide/carbon co-coated silicon nanoparticles as a lithium-ion battery anode displaying stable capacity and rate-performance

Jinyun Liu,* Hui Zhang, Kehao Tao, Yajun Zhu, Shenglan Li, Yongmei Hua, Huizi Songtian, Tianli Han* and Jinjin Li*

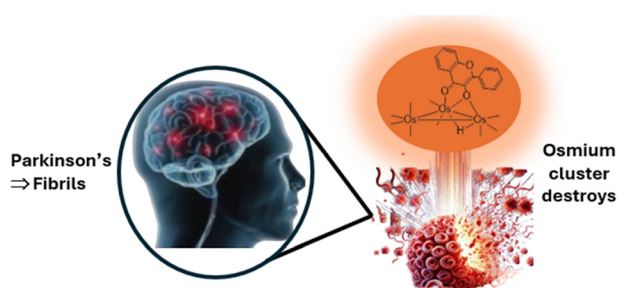
7442



Triple-locked fluorescent probes sequentially activated by hNQO1, LAP and FA: application in bioimaging of cancer cells

Langping Zhou, Han Chen, Weibing Zhang* and Junhong Qian*

7446



A triosmium carbonyl cluster that inhibits α -synuclein aggregation and disassembles preformed aggregates

Xin Liang, Balasz Gulyas, Mathangi Palanivel and Weng Kee Leong*

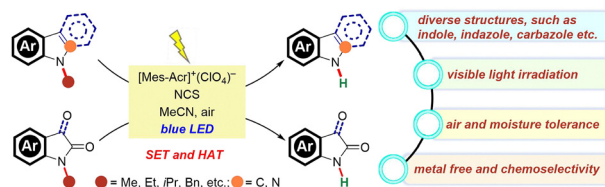


COMMUNICATIONS

7450

Visible-light-induced acridinium-catalyzed selective *N*-dealkylation of *N*-heterocycles

Shanshan Liu,* Yaoyao Zhang, Xianying Zhou and Lin-Yu Jiao*



7454

Electrochemical reaction of indole-tethered alkynes enabling stereoselective synthesis of iodovinyl spiroindolenine-cyclopentanes

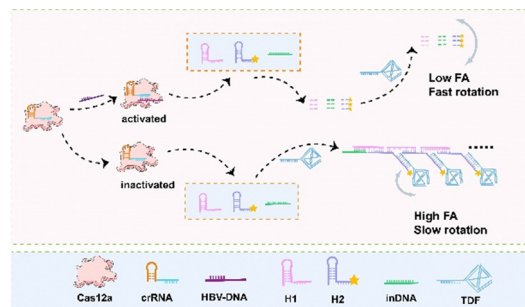
Jingrui He, Xinrui Zhou, Haibo Mei,* Ata Makarem, Ramin Javahershenas, Vadim A. Soloshonok and Jianlin Han*



7458

A novel CRISPR–Cas12a-based fluorescence anisotropy method with a high signal-to-background ratio for sensitive biosensing

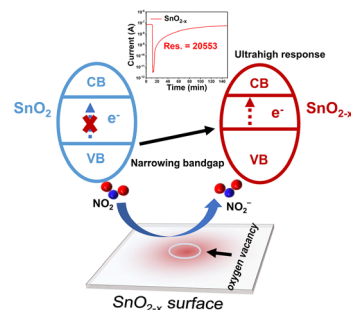
Yu Qin, Jia Li Xie, Kai Mao, Yuan Fang Li, Cheng Zhi Huang, Hong Yan Zou* and Shu Jun Zhen*



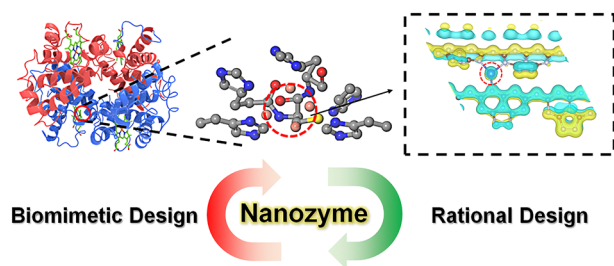
7462

Enriched oxygen vacancies in SnO_{2-x} with narrow bandgap for highly sensitive gas sensing

Pei-Xuan Wu, Bo-Jing Ruan, Ke-Feng Li, Wei-Hua Deng,* Yong-Jun Chen* and Gang Xu



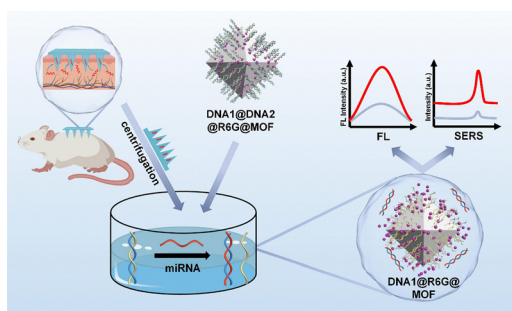
7466



Bioinspired single-atom nanozymes for microplastic degradation

Yonghui Gao, Bin Pan, Yimeng Wang and Zhiling Zhu*

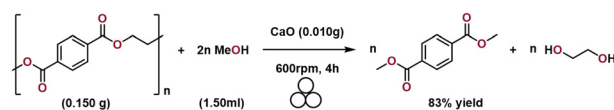
7470



In situ enrichment and ultrasensitive analysis of interstitial fluid miRNA enabled by hydrogel microneedles coupled with DNA-gated metal–organic frameworks

Kun Zou, Zhe Hao, Yu Liu,* Ruizhong Zhang,* Xiyan Li and Libing Zhang*

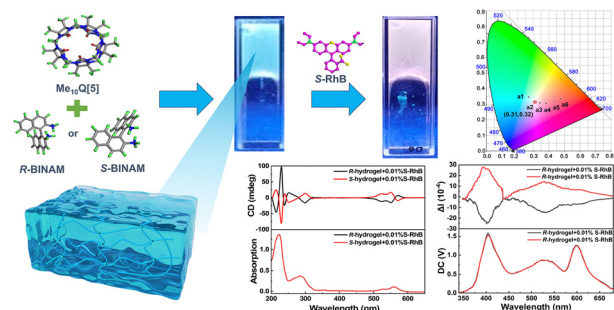
7474



Mechanochemical methanolysis of poly(ethylene terephthalate) using calcium oxide as solid base catalyst: a case study

Sophea Chrea and Atsushi Takagaki*

7478



Circularly polarized luminescence from decamethylcucurbit[5]uril-triggered chiral supramolecular hydrogels

Bing An, Qingmei Ge, Hang Cong* and Ruihan Gao*

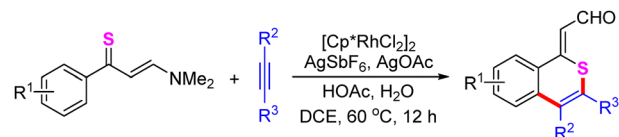


COMMUNICATIONS

7482

Synthesis of 1*H*-isothiochromenes by regioselective C–C and C–S bond formation of enaminothiones with alkynes under rhodium catalysis

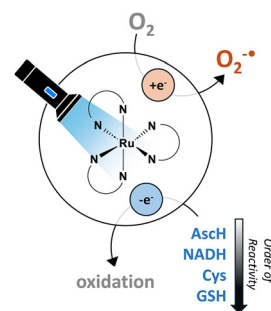
Kelu Yan,* Yuhang Sun, Jiangwei Wen, Qiuyun Li, Xinming Yu, Wenxu Shang and Xiu Wang



7486

Photocatalytic oxidation of biologically relevant reducing agents by [Ru(bpy)₃](PF₆)₂

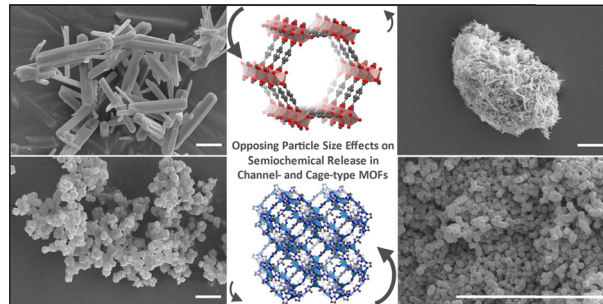
Iman Doumi, Daniella Al Othman, Shao-An Hua, Vincent Lebrun, Franc Meyer and Peter Faller*



7490

Particle size effects on vapour uptake and release dynamics in metal–organic frameworks

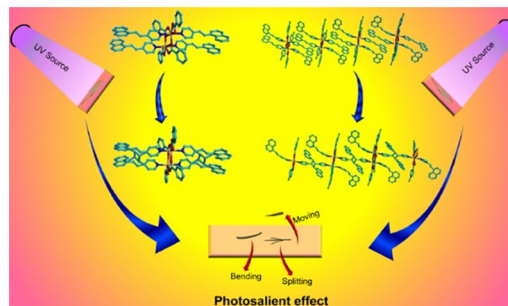
Joshua Nicks,* Cosmin Mudure, Jordan James, Alexander McDougall, William O. H. Hughes, John Spencer, Tina Düren and Andrew D. Burrows*



7494

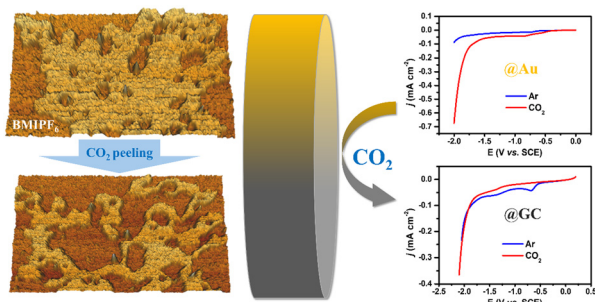
Light-driven structural transformations in isotypical Cd(II) complexes: stereoselectivity and photosalient motion

Uma Kurakula, Sanobar Naaz, Sourav Roy, Samim Khan, Abdul Malik Puthan Peedikakkal,* Raghavender Medishetty* and Mohammad Hedayetullah Mir*



COMMUNICATIONS

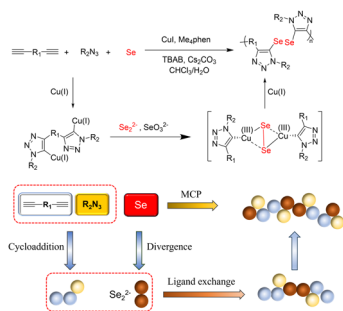
7498



Unveiling the CO₂ electrocatalytic mechanism in ionic liquids via real-time AFM and voltammetry

Kaixuan Li, Shuai Liu, Ting Wang, Bingwei Mao* and Jiawei Yan*

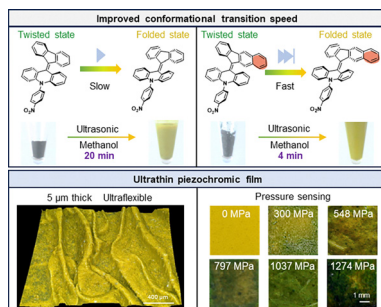
7502



Copper-catalyzed multicomponent polymerization of elemental selenium for regioselective synthesis of poly(5-diselenide-triazole)s

Yangyang Yue, Chen Qu, Nan Zheng, Yubin Zheng* and Wangze Song*

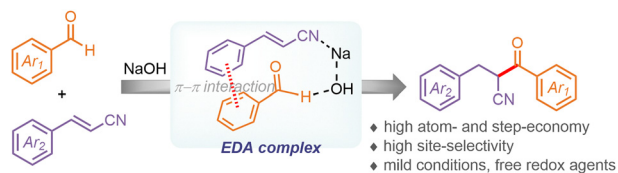
7506



Bistricyclic aromatic enes with fast conformational transition for ultrathin piezochromic films

Xiang-Ru Liu, Yihao Yin, Xian-Xian Xiao, Lin Zheng, Yan-Na Lu, Jun-Shuai Chen, Jin-Hui Gu, Yunjie Lu, Jia-Sen Xie, Mingwei Gu, Zhi-Guang Xu and Jin Ge*

7510



Direct hydroacylation of arylacrylonitriles toward β-ketonitriles assisted by an EDA complex

Zhenhui Wang, Shiqing Huang, Hao Hou, Wei Liu* and Wei Ou*



7514

Electrocatalytic reduction of carbon dioxide using Cu-based ecocatalysts

Hong Phong Duong, Ngoc-Huan Tran, Pierre-Alexandre Deyris, Yves-Marie Legrand, Peter Hesemann, Claude Grison, Claire M. Grison* and Marc Fontecave*

