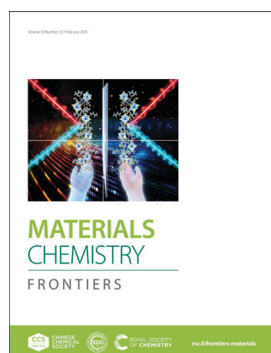


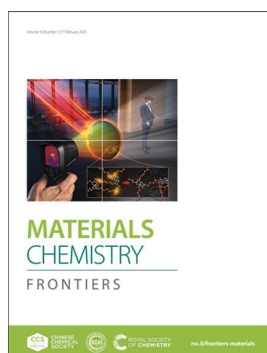
IN THIS ISSUE

ISSN 2052–1537 CODEN MCFAC5 9(3) 341–532 (2025)



Cover

See Bing Sun, Jialiang Xu, Hao-Li Zhang *et al.*, pp. 418–429.
Image reproduced by permission of Hao-Li Zhang from *Mater. Chem. Front.*, 2025, 9, 418.



Inside cover

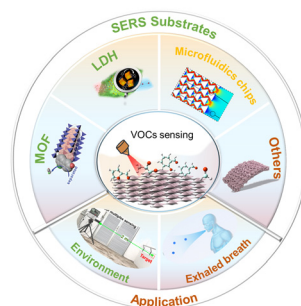
See Sungmin Park, Dong-Gyun Kim *et al.*, pp. 430–435.
Image reproduced by permission of Dong-Gyun Kim from *Mater. Chem. Front.*, 2025, 9, 430.

REVIEWS

349

Application and development of SERS technology in detection of VOC gases

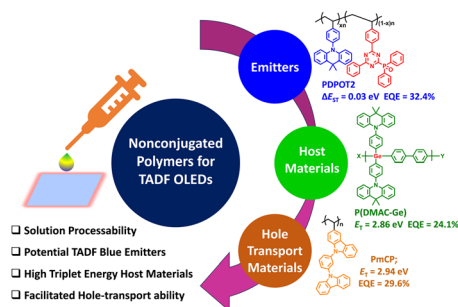
Xiangyu Meng, Yuening Wang, Xiaoyu Song, Yue Liu, Yujiao Xie, Lei Xu, Jian Yu,* Lin Qiu,* Xiaotian Wang* and Jie Lin*



367

Recent breakthroughs in non-conjugated polymers for thermally activated delayed fluorescent OLEDs: emitters, hosts, and hole-transport materials

Purusottam Reddy Bommireddy, Naresh Mamede, Chandra Sekhar Musalikunta, Young-Woong Lee, Youngsuk Suh, Mallesham Godumala* and Si-Hyun Park*



**GOLD
OPEN
ACCESS**

EES Solar

**Exceptional research on solar
energy and photovoltaics**



Part of the EES family

**Join
in**

Publish with us

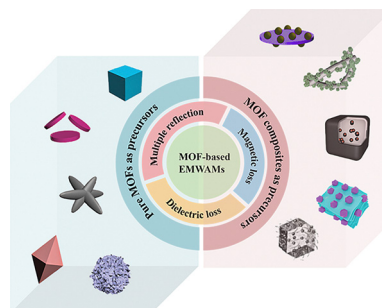
rsc.li/EESolar

REVIEWS

403

High-performance MOF-based electromagnetic wave absorption materials: design and performance optimization

Xiao-Xuan Fan, Zhan-Zhan Wang, Xin-Ci Zhang,* Lin Li* and Mao-Sheng Cao*

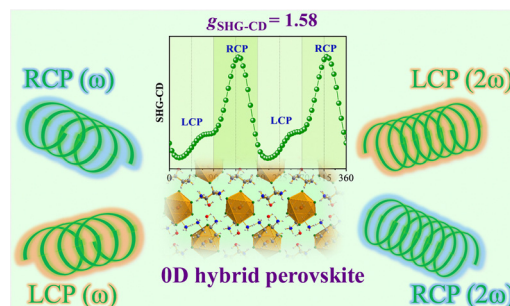


RESEARCH ARTICLES

418

Chiral 0D hybrid lead-bromide perovskites with strong nonlinear chiroptical properties

Huan Yang, Bing Sun,* Junjie Guan, Shun-Da Wu, Peihan Wang, Qiang Wang, Jialiang Xu* and Hao-Li Zhang*

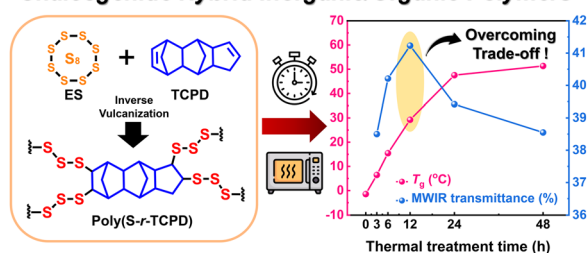


430

Unveiling thermal treatment effects on the thermomechanical and IR optical properties of chalcogenide hybrid inorganic/organic polymers

Wonmoo Byun, Jae Hyuk Hwang, Jiseok Han, Juntae Joo, Sangmin Park, Woohwa Lee, Hyun Kim, Chang-Geun Chae, Sungmin Park* and Dong-Gyun Kim*

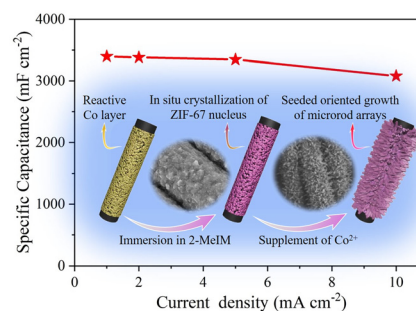
Systematical Thermal Treatment of Chalcogenide Hybrid Inorganic/Organic Polymers



436

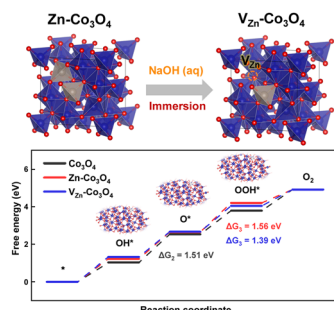
Constructing vertically aligned ZIF-67 microrod arrays on carbon cloth with commercial-level mass-loading for high-performance supercapacitors

Chenchen Bai, Bingjun Li, Dejun Li, Yan Han* and Caiyun Wang*



RESEARCH ARTICLES

445



Constructing cation defects through selective etching of tetrahedral sites in Co_3O_4 for an enhanced oxygen evolution reaction

Xiaotian Wu, Qian Zhu, Yingge Cong, Zhibin Geng, Keke Huang, Mei Han* and Zhiyu Shao*

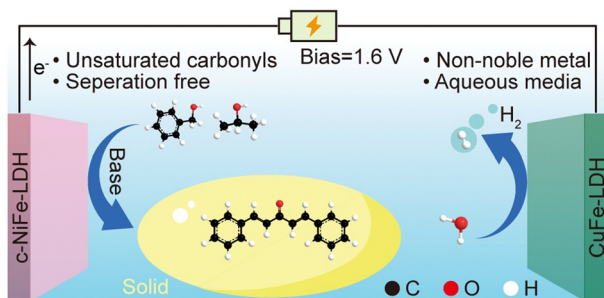
451



A pillararene-based supramolecular polymer hydrogel for removal of organic dyes from water

Jiaxin Ma, Shanhao Gong, Yujie Cheng, Wei Cao, Xuehong Wei, Pi Wang* and Danyu Xia*

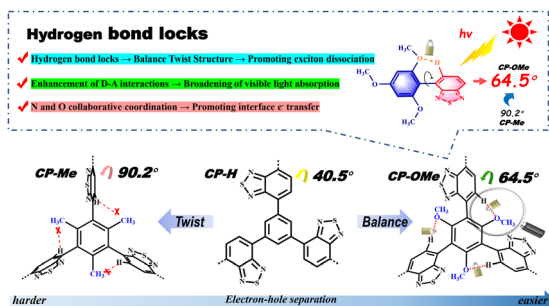
460



A noble-metal-free electrocatalytic system for direct synthesis of α,β -unsaturated carbonyl solids in aqueous solution

Tianyu Shao, Jialu Li, Chao Wang* and Ren Su*

468



"Hydrogen bond locks" promoted exciton dissociation and carrier separation in copolymers for enhancing uranyl photoreduction

Yiping Liu, Mei Xu, Mengxiong Lin, Maomao Zhao, Guihong Wu, Fangru Song, Yan Liu, Chengrong Zhang, Fengtao Yu* and Jianding Qiu*

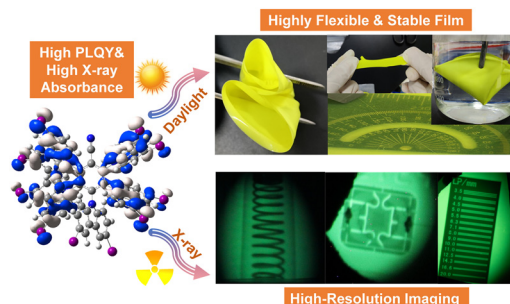


RESEARCH ARTICLES

480

Flexible TADF-based organic X-ray scintillating films for high-resolution imaging

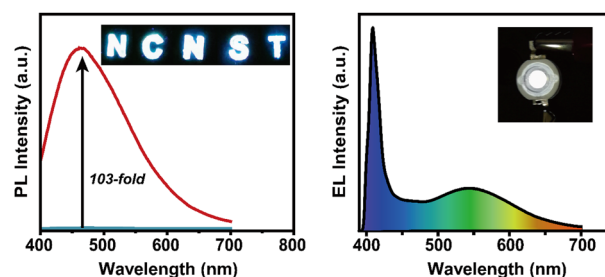
Haoqiang Xu, Wenjing Zhao, Xinning Zhang, Jingjing Cui, Zhenhua Wang, Xiaowang Liu, Junqing Shi* and Lei Ji*



487

A general strategy for enhancing the photoluminescence of TMD quantum sheets

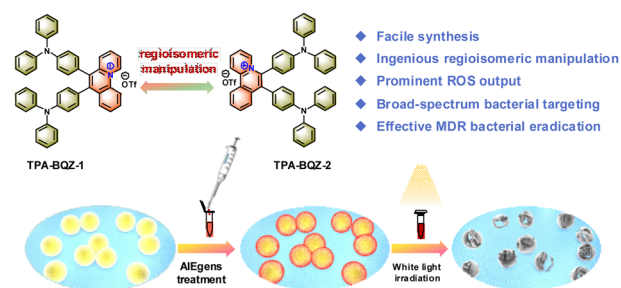
Zhangqiang Li, Xuanping Zhou, Ce Zhao, Liuyang Xiao and Yong Zhang*



496

Regioisomeric manipulation of AIE-active photosensitizers towards multidrug-resistant bacterial eradication

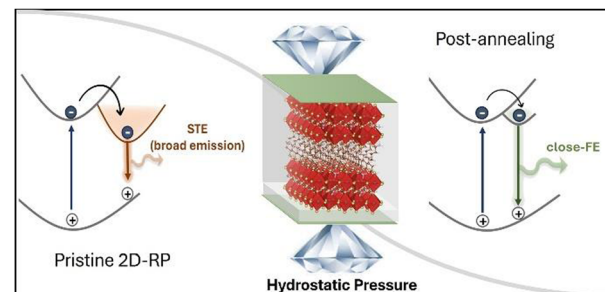
Meiliang Zhi, Tun Sun, Deliang Wang, Qiyong Zeng, Ying Li, Xiang Su,* Xing Feng* and Ben Zhong Tang*



507

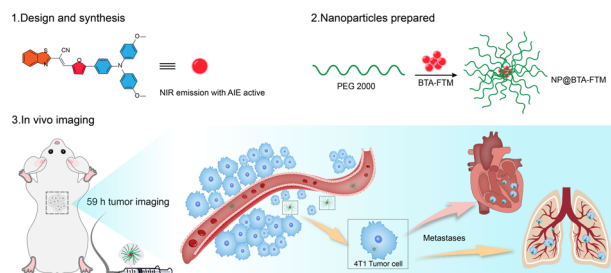
Releasing trapped excitons in 2D perovskites via pressure annealing: a cooperative interplay between lattice strain and the electronic structure

Andre L. M. Freitas,* Naidel A. M. S. Caturello, Aryane Tofanello, Ulisses F. Kaneko, Lucas E. Correa, Ricardo D. dos Reis, Fabio F. Ferreira, Gustavo M. Dalpian and Jose A. Souza*



RESEARCH ARTICLES

520



NIR AIE luminogens for primary and metastasis tumor imaging and tracking applications

Yujiao Zhu, Yuhang Zeng, Huimin Liu, Yuting Yin, Bin Chen* and Rong Hu*

