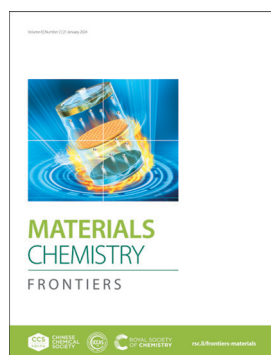


IN THIS ISSUE

ISSN 2052-1537 CODEN MCFAC5 8(2) 299-586 (2024)



Cover

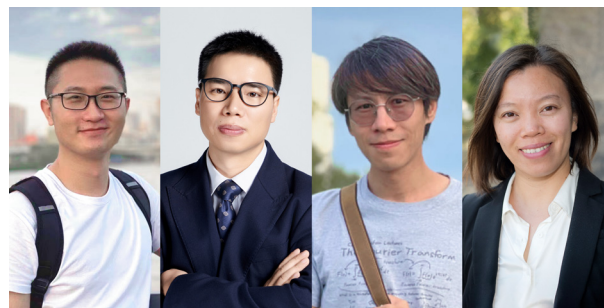
See Boli Tong and Xifei Li, pp. 309–340. Image reproduced by permission of Boli Tong and Xifei Li from *Mater. Chem. Front.*, 2024, 8, 309.

EDITORIAL

307

Celebrating the 10th anniversary of ShanghaiTech University

Pengxin Liu,* Zhijun Ning, Zhujun Wang and Chunhong Ye

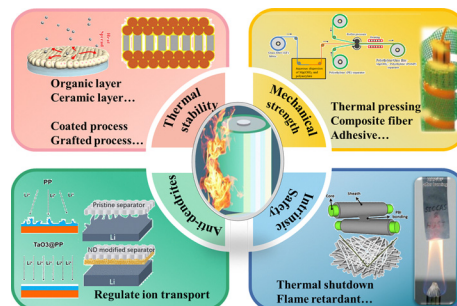


REVIEWS

309

Towards separator safety of lithium-ion batteries: a review

Boli Tong and Xifei Li*



Royal Society of Chemistry approved training courses

Explore your options.
Develop your skills.
Discover learning
that suits you.

**Courses in the classroom,
the lab, or online**

Find something for every
stage of your professional
development. Search our
database by:

- subject area
- location
- event type
- skill level

Members **get at least 10% off**

Visit rsc.li/cpd-training



**SAVE
10%**

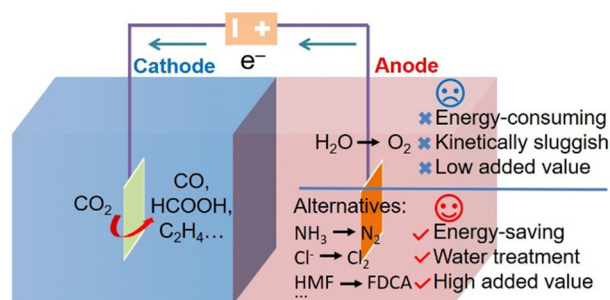


REVIEWS

341

Coupling electrochemical CO₂ reduction with value-added anodic oxidation reactions: progress and challenges

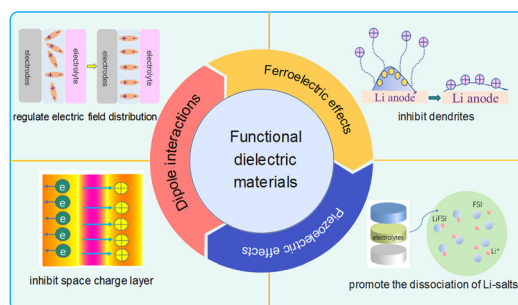
Yu Li and Tong-Bu Lu*



354

Functional dielectric materials for high-performance solid-state batteries

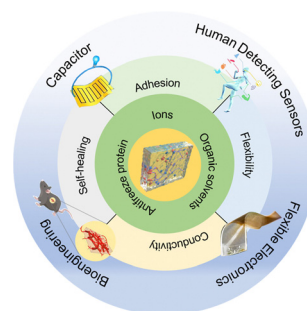
Dongming Wang, Zhuqi Wang,* Wenbiao Liang, Yuxiao Han, Yin Zhao, Yingying Lv, Liyi Shi and Shuai Yuan*



381

Anti-freezing multifunctional conductive hydrogels: from structure design to flexible electronic devices

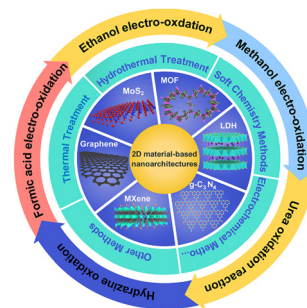
Chao Xu, Kexin Yang, Guoyin Zhu, Changjin Ou,* Jing Jiang, Evgeny Zhuravlev and Yizhou Zhang*



404

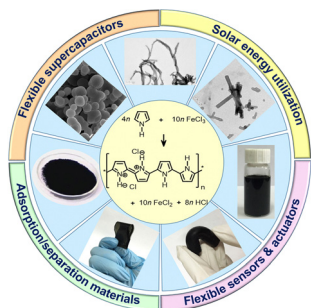
Recent progress on 2D material-based nanoarchitectures for small molecule electro-oxidation

Cuizhen Yang, Tingyao Wang, Chengcheng Li, Yongtao Li,* Dongming Liu* and Qingan Zhang



REVIEWS

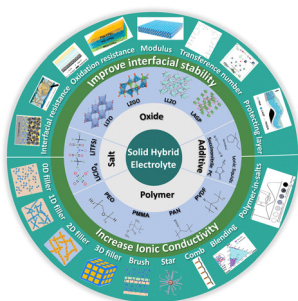
434



Polypyrrole micro/nanostructures and their soft materials in versatile forms: construction and applications

Shi Wang, Yukai Chen, Boyuan Hu, Yong Wang, Xinli Jing and Yu Li*

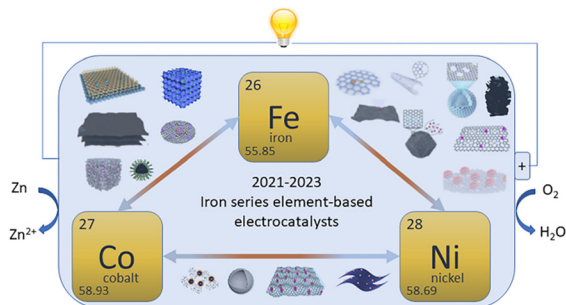
455



Solid hybrid electrolytes based on conductive oxides and polymer electrolytes for all-solid-lithium batteries

Leiwu Tian, Ji-Wan Kim and Dong-Won Kim*

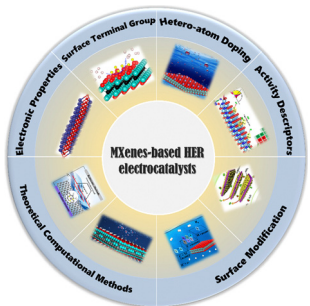
485



Recent progress in iron-series-element-based electrocatalysts for Zn-air batteries

Sanshuang Gao, Xinzhong Wang,* Xijun Liu,* Cao Guo, Qian Liu and Guangzhi Hu*

507



Theoretical progress of MXenes as electrocatalysts for the hydrogen evolution reaction

Pifang Wan and Qing Tang*

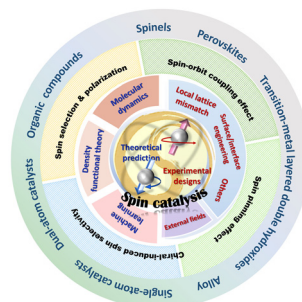


REVIEWS

528

Engineering the spin configuration of electrocatalysts for electrochemical renewable conversions

Yuying Jiang, Ke Yang, Menggang Li,* Denghui Xu* and Zhenhui Ma*

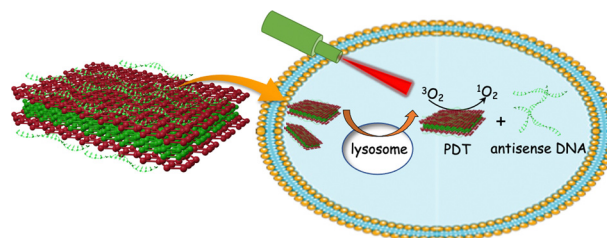


RESEARCH ARTICLES

553

Antisense DNA loaded 2D nanosheets for combined photodynamic and antisense cancer therapy

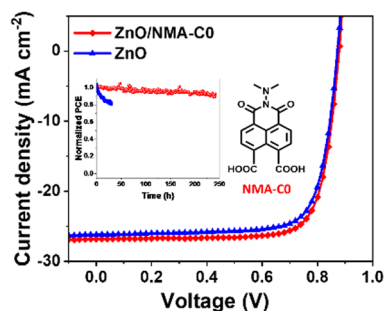
Gowtham Raj, Vasudev D. S, Justin Prasad, Erai Anbu, Soumakanya Ram, Geoffrey Bellson Daniel, Nikhil Dev Narendradev, Srinivasa Murty Srinivasula and Reji Varghese*



562

An efficient interface modification material for improved efficiency and stability in inverted organic solar cells

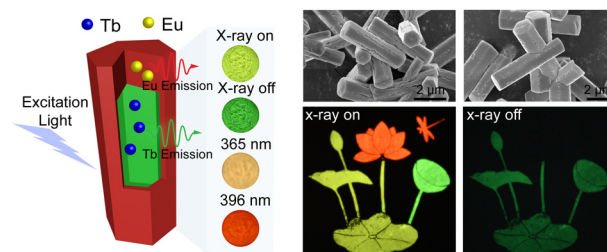
Zhaochen Suo, Jian Liu, Shitong Li, Zhaoyang Yao, Chenxi Li, Xiangjian Wan* and Yongsheng Chen

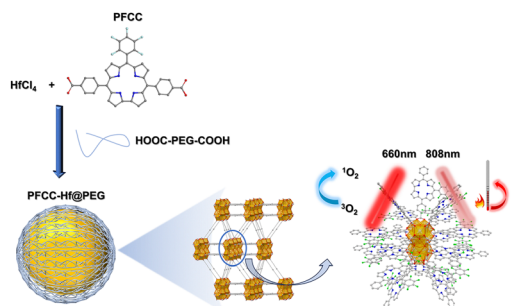


567

Multifaceted luminescence in lanthanide-activated microrods for advanced multicolor anti-counterfeiting

Qianyu Zheng and Lili Xie*





A unique corrole-based metal–organic polymer for synergistic phototherapy

Wenbo Deng, Meng Jia, Quan Shi, Yunhao Xu, Yaqing Feng, Yanming Zhao,* Min Gong* and Bao Zhang*

