

# Journal of Materials Chemistry A

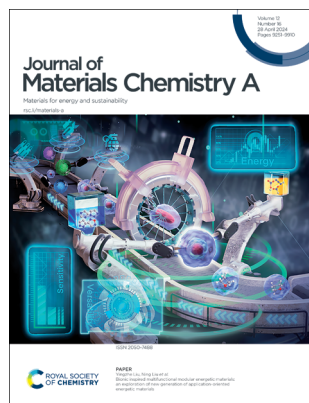
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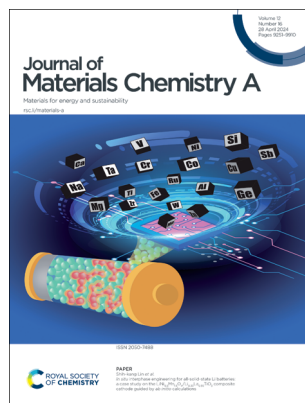
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ISSN 2050-7488 CODEN JMCAET 12(16) 9251–9910 (2024)



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See Yingzhe Liu, Ning Liu *et al.*, pp. 9427–9437. Image reproduced by permission of Ning Liu from *J. Mater. Chem. A*, 2024, 12, 9427.



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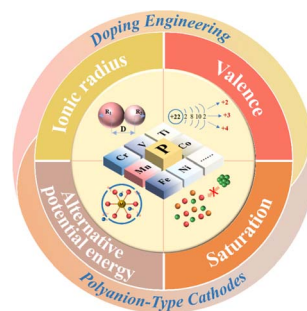
See Shih-kang Lin *et al.*, pp. 9438–9453. Image reproduced by permission of Shih-kang Lin from *J. Mater. Chem. A*, 2024, 12, 9438.

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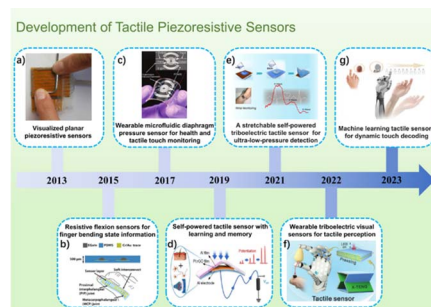
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Qianhe Shu, Yuncong Pang, Qiqi Li, Yuzhe Gu, Zhiwei Liu,\* Baoguang Liu, Jianmin Li\* and Yang Li\*



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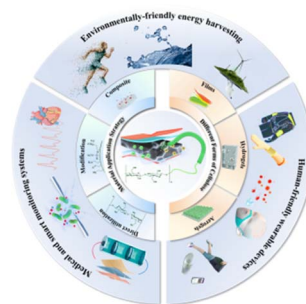
**Fundamental questions  
Elemental answers**

## REVIEWS

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**Cellulose-based green triboelectric nanogenerators: materials, form designs, and applications**

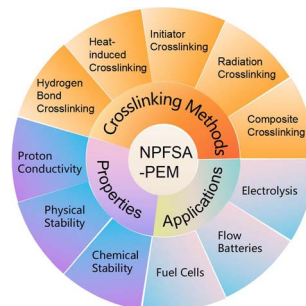
Shize Fang, Xingxiang Ji, Huihui Wang,\* Hong Jiang, Meng Gao,\* Hongbin Liu, Yang Liu\* and Bowen Cheng



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**Conductive nanocomposite hydrogels for flexible wearable sensors**

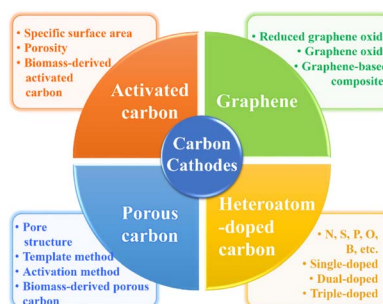
Wen-Yan Guo and Ming-Guo Ma\*



9400

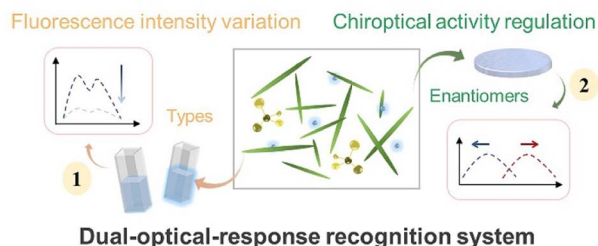
**Recent progress on carbon materials for emerging zinc-ion hybrid capacitors**

Lai Yu, Jie Li, Nazir Ahmad, Xiaoyue He, Guanglin Wan, Rong Liu, Xinyi Ma, Jiacheng Liang, Zixuan Jiang and Genqiang Zhang\*



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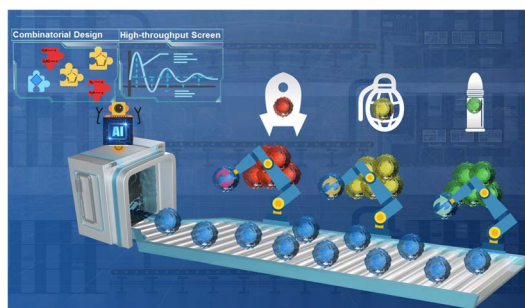


### Recognizing chiral amino acids with a dual-optical-response system

Yaxin Wang, Yajie Zhou, Shanshan Zhao, Mingjiang Zhang, Anqi Li, Guangen Li, Qi Guo, Xueru Guo, Zhi Tong, Zeyi Li, Jing Lin and Taotao Zhuang\*

## PAPERS

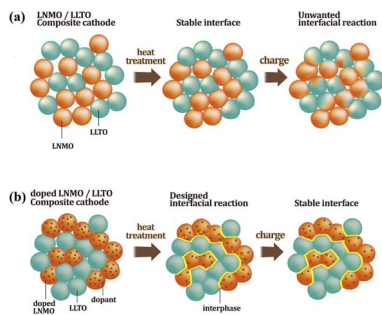
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### Bionic inspired multifunctional modular energetic materials: an exploration of new generation of application-oriented energetic materials

Yujia Wen, Linyuan Wen, Bojun Tan, Jinkang Dou, Minghui Xu, Yingzhe Liu,\* Bozhou Wang and Ning Liu\*

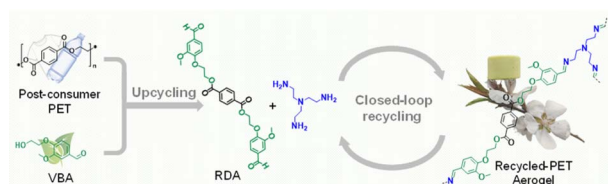
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Che-an Lin, Martin Ihrig, Kuan-chen Kung, Hsiang-ching Chen, Martin Finsterbusch, Olivier Guillon and Shih-kang Lin\*

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### Chemical recycling of post-consumer PET into high-performance polymer aerogels

Zihe Liu, Shunjie Liu,\* Hongming Zhang and Xianhong Wang\*



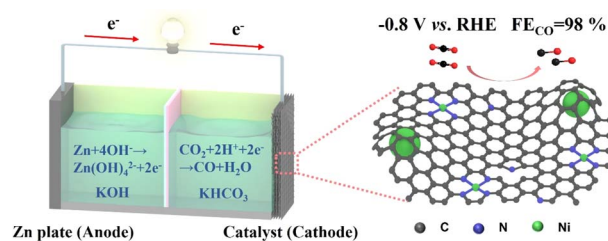


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# Red blood cell (RBC)-like Ni@N–C composites for efficient electrochemical CO<sub>2</sub> reduction and Zn–CO<sub>2</sub> batteries

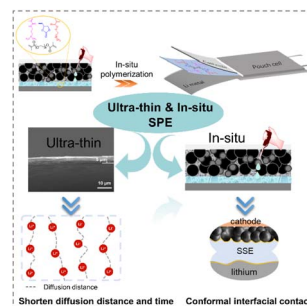
Liu Han, Cheng-wei Wang, Hai-ping Xu, Ming Yang, Bing Li\* and Ming Liu\*



9469

# In situ construction of an ultra-thin and flexible polymer electrolyte for stable all-solid-state lithium-metal batteries

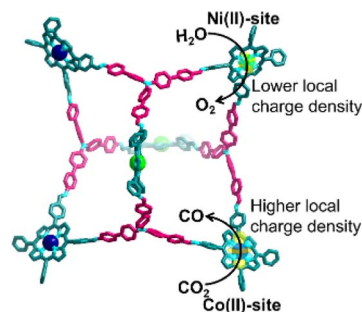
Shilun Gao, Mengxiang Ma, Youjia Zhang, Lin Li, Shuangshuang Zhu, Yayue He, Dandan Yang, Huabin Yang\* and Peng-Fei Cao\*



9478

# Coupling electrocatalytic redox-active sites in a three-dimensional bimetalloporphyrin-based covalent organic framework for enhancing carbon dioxide reduction and oxygen evolution

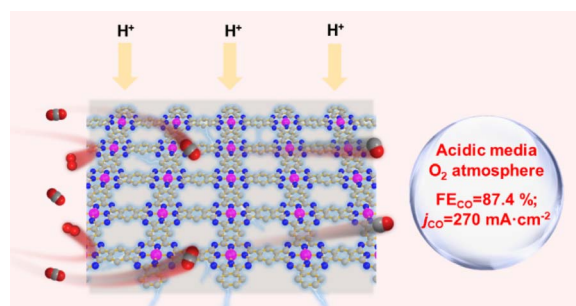
Jie Li, Yan-Xi Tan,\* Jing Lin, Yangyang Feng, Xiang Zhang, Enbo Zhou, Daqiang Yuan and Yaobing Wang\*



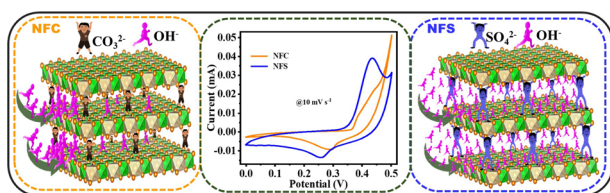
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# Boosting oxygen-resistant CO<sub>2</sub> electroreduction reaction in acidic media over conjugated frameworks

Li-Yao Liu, Qiao Wu, Hui Guo, Lili Han, Shuiying Gao, Rong Cao\* and Yuan-Biao Huang\*



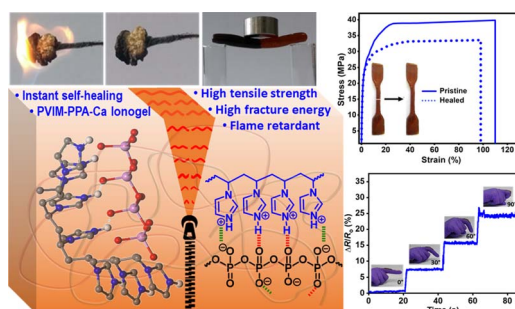
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### Exchanging interlayer anions in NiFe-LDHs nanosphere enables superior battery-type storage for high-rate aqueous hybrid supercapacitors

Harishchandra S. Nishad, Vishal Kotha, Pradip Sarawade, Atul C. Chaskar, Sagar Mane, Jaewoong Lee and Pravin S. Walke\*

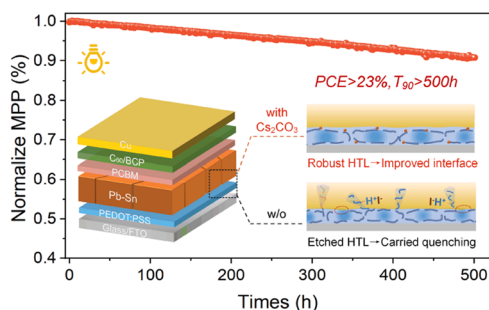
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### Rapid self-healing and superior toughness in ionically crosslinked polymer ionogels and strain sensing applications

Anil Kumar Padhan, Diksha Sharma, Tino S. Thomas, Aayushi Prakash Sinha, Adarsha Narayan Mallick and Debaprasad Mandal\*

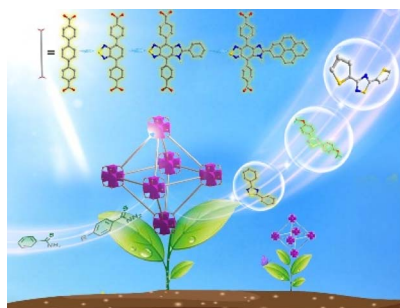
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### Tin-lead halide perovskite solar cells with a robust hole transport layer

Chunyan Li, Yao Zhang, Haiyan Zhao, Zhongxun Yu, Jixiang Zhang, Peng Zhang and Han Chen\*

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### Linker engineering in UiO-68-type metal-organic frameworks for the photocatalytic thioamide cyclization

Hua Liu, Shu-Ya Zhao, Quan-Quan Li, Xu-Sheng Li, Yu-Jie He, Ping Liu,\* Yao-Yu Wang and Jian-Li Li\*



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# Mechanistic insights into electrocatalytically reduced OER performance in marigold-like trimetallic NiFe-based LDH: charge localisation and d-band orbital filling

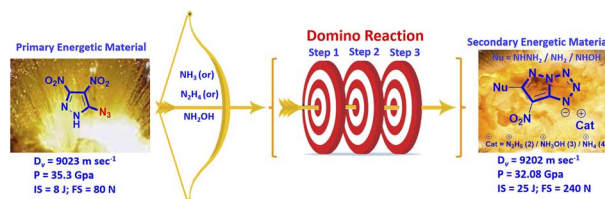
Suvankar Deka, Manju Kumari Jaiswal, Parasmani Rajput and Biswajit Choudhury\*



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# A domino reaction from a sensitive azide: the impact of positional isomerism on chemical reactivity featuring *ortho* azido/nitro substituted derivatives

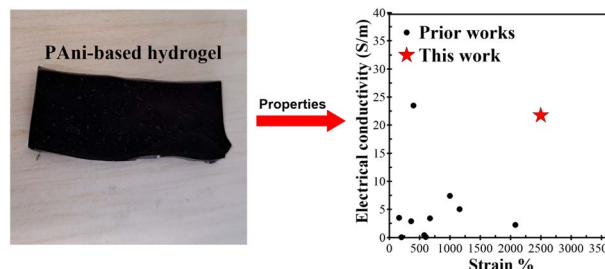
Vikranth Thaltiri, Jatinder Singh, Richard J. Staples and Jean'ne M. Shreeve\*



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# A highly conductive and ultra-stretchable polyaniline/cellulose nanocrystal/polyacrylamide hydrogel with hydrophobic associations for wearable strain sensors

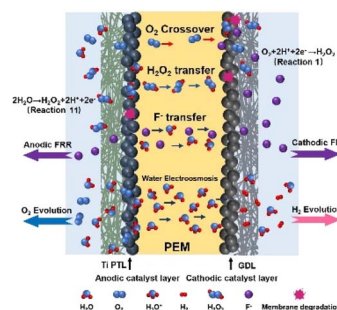
Pooria Rahmani, Akbar Shojaei\* and Michael D. Dickey\*



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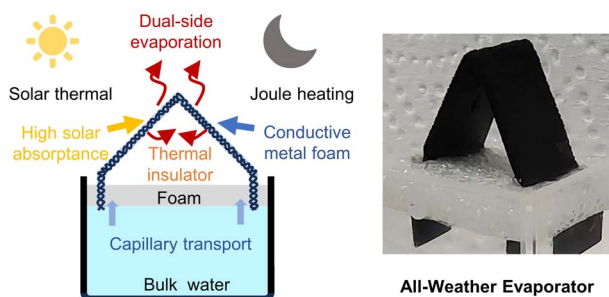
# A new insight into the chemical degradation of proton exchange membranes in water electrolyzers

Zhiyan Rui, Kang Hua, Zhenlan Dou, Aidong Tan, Chunyan Zhang, Xiaoyun Shi, Rui Ding, Xiaoke Li, Xiao Duan, Yongkang Wu, Yipeng Zhang, Xuebin Wang, Jia Li\* and Jianguo Liu\*



## PAPERS

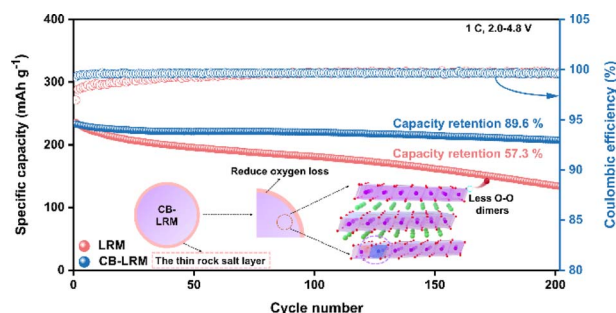
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### 3D bridge-arch-structured dual-side evaporator for practical, all-weather water harvesting and desalination

Meijie Chen,<sup>\*</sup> Shuang Li, Xingyu Chen, Yimou Huang, Bin Liu, Hongjie Yan, Brian W. Sheldon, Qing Li<sup>\*</sup> and Changmin Shi<sup>\*</sup>

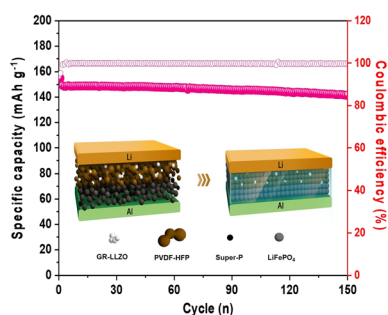
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### Simultaneous dual modification of Li-rich Mn-based cathode in restraining oxygen release and structure distortion

Shaowei Kang, Xianbin Wei, Youqi Chu, Yongbiao Mu, Lingfeng Zou, Xiaoqian Xu, Qing Zhang<sup>\*</sup> and Lin Zeng<sup>\*</sup>

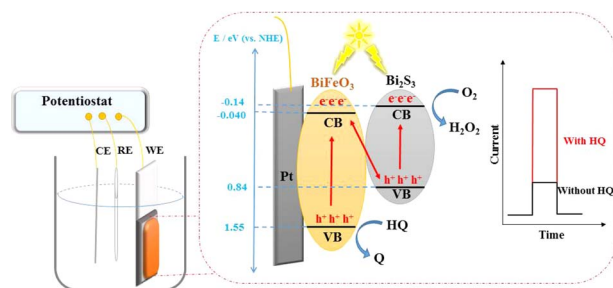
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### Thin-film type *in situ* polymerized composite solid electrolyte for solid-state lithium metal batteries

Young-Woong Song, Sang-Jun Park, Hyochan Lee, Min-Young Kim, Ho-Sung Kim, Sung-Won Kang, Sanghyun Lee, Yooshin Kim, Jaekook Kim and Jinsub Lim<sup>\*</sup>

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### Boosting the charge for the selective photoelectrochemical oxidation of hydroquinone in hazardous environments using a fine-tuned heterojunction catalyst

Mohamed G. Abdelkader, Nada F. Atta<sup>\*</sup> and Ahmed Galal<sup>\*</sup>

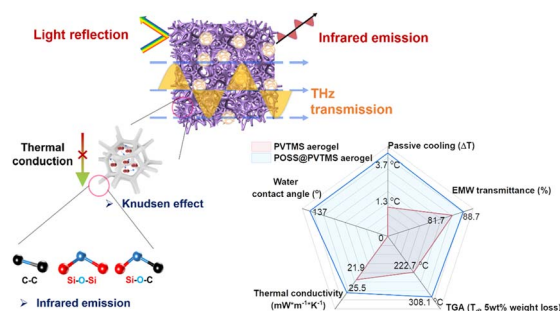




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## POSS/PVTMS aerogels for passive cooling and THz communication *via* cross-linking density regulation and nanoscale bimodal design

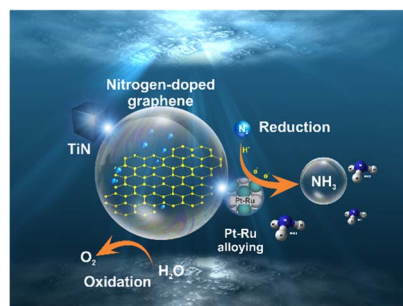
Haoyu Ma, Maryam Fashandi, Zeineb Ben Rejeb, Piyapong Buahom, Jianxiang Zhao, Pengjian Gong, Qiwu Shi, Guangxian Li\* and Chul B. Park\*



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## Solar-powered plasmon-boosted graphene towards enhanced ammonia production

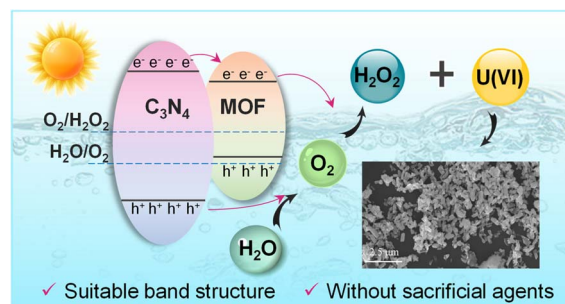
Manpreet Kaur, Avinash Alagumalai, Rad Sadri, Saana Tandon, Sameh M. Osman, Edward P. L. Roberts and Hua Song\*



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## MOF-modified $\text{C}_3\text{N}_4$ for efficient photo-induced removal of uranium under air without sacrificial agents

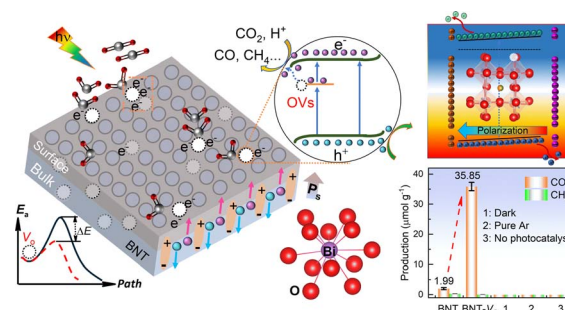
Lingyu Zhang, Yuhao Yang, Nan Zhao, Shuang Liu, Zhe Wang,\* Xiangke Wang and Yuexiang Lu\*



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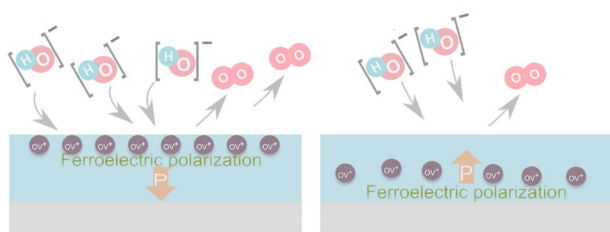
## Surface oxygen vacancy engineering in weak Bi–O bonded ferroelectric bismuth sodium titanate for boosting the photocatalytic $\text{CO}_2$ reduction reaction

Xiao Liu,\* Jicong Wang, Fangyuan Zhu, Yanrui Li, Wenchao Tian, Weijia Wang, Ruiyun Guo, Laijun Liu and Jing Shi\*



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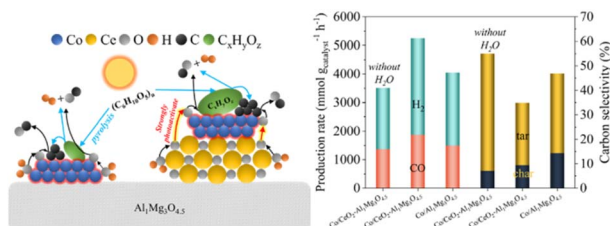
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### Oxygen vacancy redistribution and ferroelectric polarization relaxation on epitaxial perovskite films during an electrocatalytic process

Keyu An, Zhichao Yu, Haoyun Bai, Di Liu, Lulu Qiao, Xingshuai Lv, Lianyi Shao, Jinxian Feng, Youpeng Cao, Lun Li, Zhaorui Wen, Shi Chen, Zhongbin Pan, Shuangpeng Wang\* and Hui Pan\*

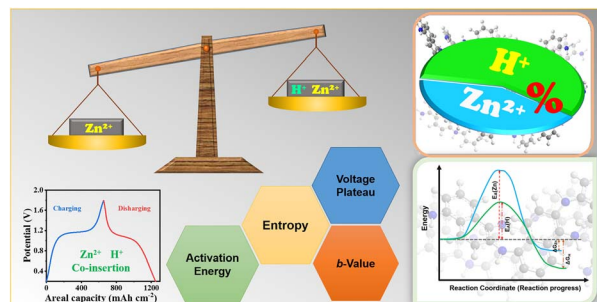
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### Key role of light in highly efficient photothermocatalytic steam cellulose reforming on Co/CeO<sub>2</sub>-Al<sub>1</sub>Mg<sub>3</sub>O<sub>4.5</sub>

Yaqi Hu, Jichun Wu, Yuanzhi Li,\* Mengqi Zhong, Qianqian Hu, Huamin Cao and Lei Ji

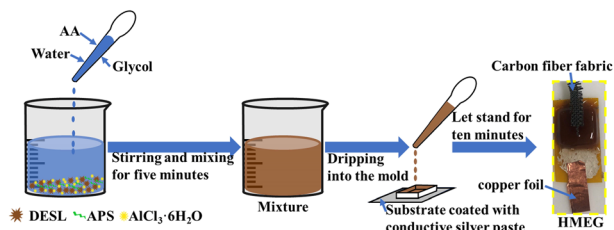
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### New insights into the charge storage chemistry of polymer cathodes in aqueous Zn batteries

Xiangcheng Yuan, Zhengjie Wang, Yiqing Li, Mi Gan, Chen Si\* and Jinzhang Liu\*

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### Easy hydrogel preparation with high-purity lignin separated from DES pretreatment with excellent performance for moisture-electric generators and motion sensors

Zhuang Liu, Yi Hou, Lirong Lei and Songqing Hu\*



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**NiFeLDH/Mo<sub>4/3</sub>B<sub>2-x</sub>T<sub>z</sub>/NF composite electrodes to enhance oxygen evolution performance**

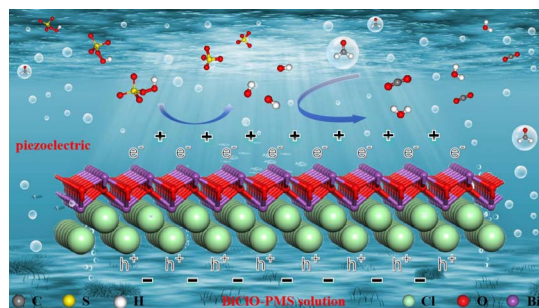
Lulu Xu, Peng Yang, Ruilong Ye, Xingcai Wu\* and Yourong Tao\*



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**Bubble induced piezoelectric activation of peroxymonosulfate on BiOCl for formaldehyde degradation during the absorption process: a density functional theory study**

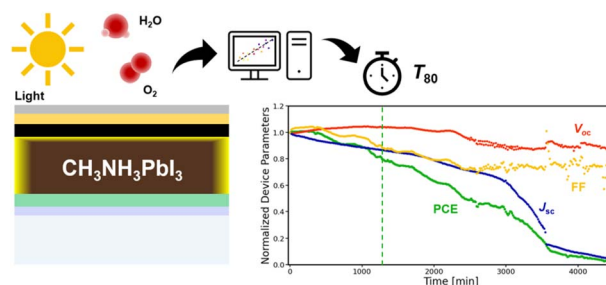
Wenwen Xu, Binghua Jing, Qianyu Li, Jiachun Cao, Junhui Zhou, Juntian Li, Didi Li and Zhimin Ao\*



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**Physiochemical machine learning models predict operational lifetimes of CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub> perovskite solar cells**

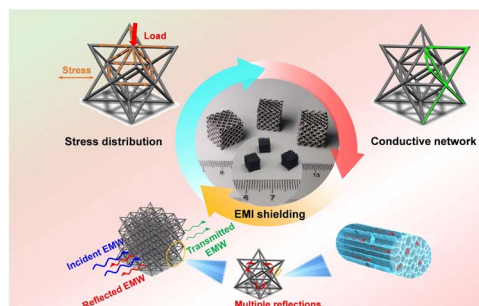
Wiley A. Dunlap-Shohl, Yuhuan Meng, Preetham P. Sunkari, David A. C. Beck, Marina Meilă and Hugh W. Hillhouse\*



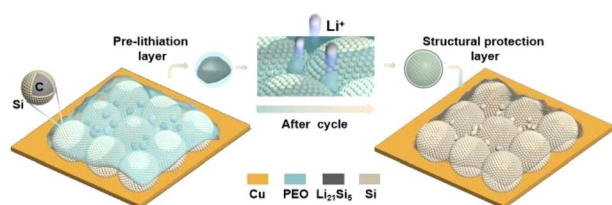
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**Embedded 3D printing of RGO frameworks with mechanical strength, and electrical and electromagnetic interference shielding properties**

Yue Wang, Jialiang Luo, Cao Yang, Lei Xiao, Gazi Hao, Suwei Wang\* and Wei Jiang\*



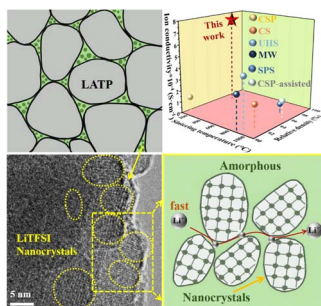
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### PEO-Li<sub>21</sub>Si<sub>5</sub> as a pre-lithiation and structural protection layer for lithium-ion batteries

Zhiyong Zhang, Zhefei Sun, Shanpeng Pei, Yan Liu, Linshan Luo, Shengshi Guo, Xiang Han, Ziqi Zhang, Fuming Wang\* and Songyan Chen\*

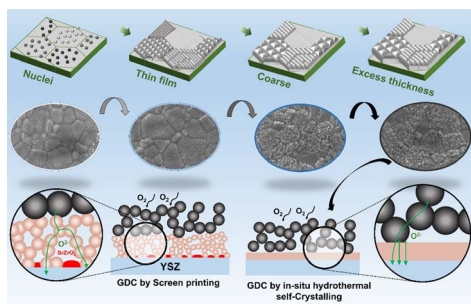
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### Two-step cold sintering of Li<sub>1.3</sub>Al<sub>0.3</sub>Ti<sub>1.7</sub>(PO<sub>4</sub>)<sub>3</sub> composite solid electrolyte with non-equilibrium microstructures for enhanced electrochemical performance

Jiabin Jiao, Ziqian Xie, Yangdong Zhang, Chunlin Zhao, Xiao Wu, Tengfei Lin, Min Gao and Cong Lin\*

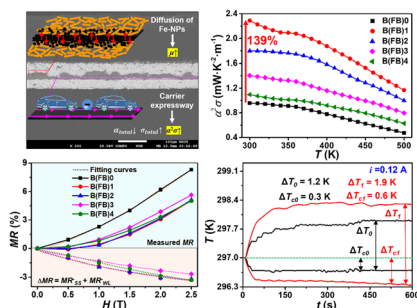
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### An *in situ* hydrothermally self-crystallized dense ceria-based barrier layer for solid oxide fuel cells

Qiuqiu Lyu, Haoyu Zhao, Jianyu He, Yuhao Wang,\* Yongkang Xiang, Hongxia Qu, Qin Zhong, Yifei Sun\* and Tenglong Zhu\*

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### Interlayer carrier high-speed conductive channels and excellent electrical transport performance of multilayer films

Shaoqiu Ke, Tiantian Chen, Xiaolei Nie,\* Xiaoling Ai, Tonglu Huang, Haojun Zhang, Longzhou Li, Wenjie Xu, Chengshan Liu, Wanting Zhu, Ping Wei, Danqi He, Wenyu Zhao\* and Qingjie Zhang



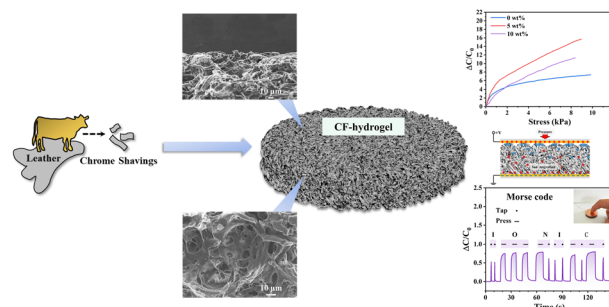


## PAPERS

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## Hydrogels from chrome shavings for a highly sensitive capacitive pressure sensor

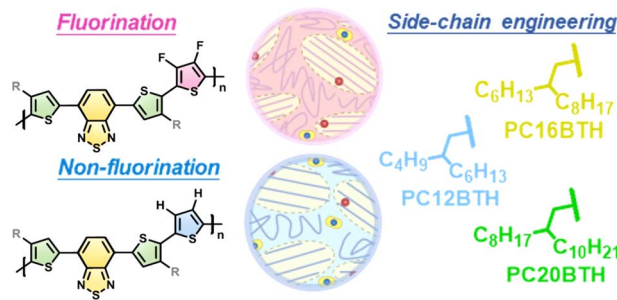
Hua Yuan, Manting Wang, Jiaqi Zhang, Jiexin Wang and Yuan Le\*



9806

## Enhancing the thermoelectric performance of donor–acceptor conjugated polymers through dopant miscibility: a comparative study of fluorinated substituents and side-chain lengths

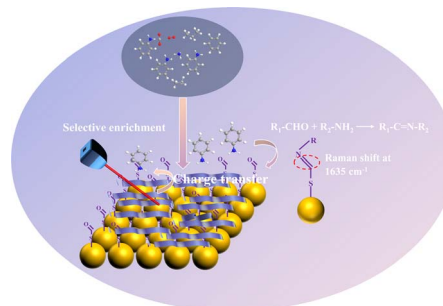
Jian-Fa Ding, Guan-Lin Chen, Pang-Hsiao Liu, Kai-Wei Tseng, Wei-Ni Wu, Jhih-Min Lin, Shih-Huang Tung, Leeyih Wang\* and Cheng-Liang Liu\*



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SERS sensing chip based on  $Ti_3C_2$ /nano-Au@MA for ultrasensitive amine gas detection

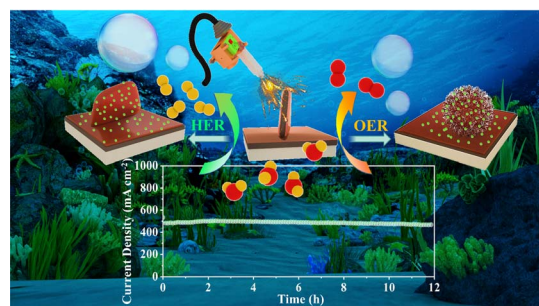
Liwei Hou, Xinyue Xu, Xiaoli Wang, Li Wang, Fengchun Tian\* and Yi Xu\*



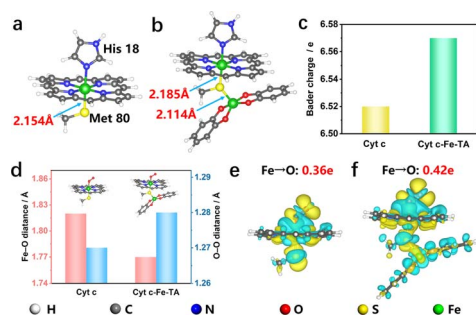
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## Coupled plasma etching and electrodeposition of CoP/NiO nanosheets with surface reconstruction for water-splitting

Qingdian Liao, Tao You, Xuesong Liu, Kuan Deng, Peng Liu, Wen Tian\* and Junyi Ji\*



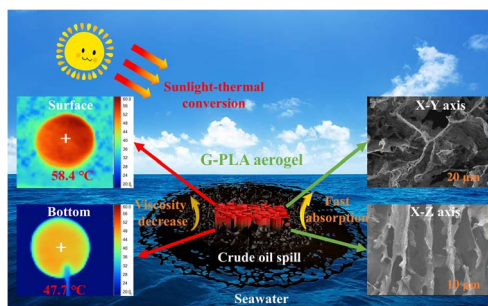
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### Modifying cellular properties via rational chemical design for unnatural oxygen reduction electrocatalysis of a cell

Yangdi Niu, Gaofu Guo, Deming Xue, Xiaoli Yang, Xianqi Dai,\* Zhengyu Bai\* and Lin Yang\*

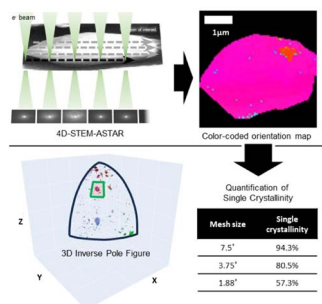
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### Bioinspired superhydrophobic polylactic acid aerogel with a tree branch structure for the removal of viscous oil spills assisted by solar energy

Yihao Guan, Bingqian Bi, Di Qiao, Sijing Cao, Wenjun Zhang, Zhining Wang, Hongbo Zeng and Yiming Li\*

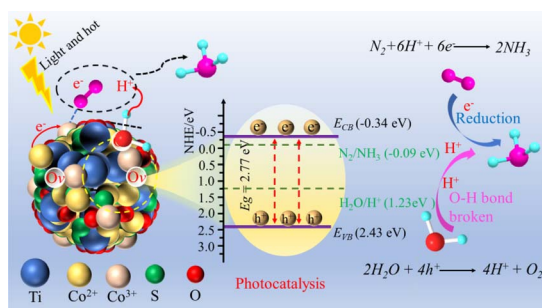
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### Quantification of single crystallinity in single crystal cathodes for lithium-ion batteries

Ju-Young Cha, Jinseok Hong, Minki Kim, Yongjo Jung, Joon Ha Chang, Hyunbin Kim, Sojin Kim, Ju Seong Kim, Seon-Hwa Lee, Kijoo Hong and Seung-Yong Lee\*

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### Synergism of heterovalent valence state and oxygen vacancy defect engineering in Co/S co-doped TiO<sub>2</sub> for nitrogen photoreduction to ammonia

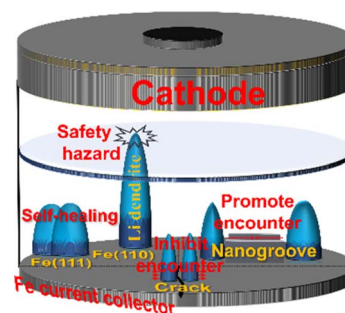
Longyan Chen, Pengkun Zhang, Dong-Hau Kuo,\* Jianmei Jiang, Binghong Wu, Zhengjie Su, Osman Ahmed Zelekew, Jinguo Lin,\* Dongfang Lu\* and Xiaoyun Chen\*



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## Mechanism of lithium dendrite growth on iron surfaces toward high-performance and safe anode-free lithium metal batteries

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## Unlocking the synergetic potential of cobalt iron phosphate and multiwalled carbon nanotube composites towards supercapacitor application

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