

# Energy & Environmental Science

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ISSN 1754–5706 CODEN EESNBY 17(4) 1297–1626 (2024)



### Cover

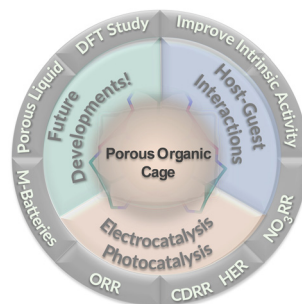
See Michael Saliba et al.,  
pp. 1407–1415.  
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2024, 17, 1407.

## REVIEWS

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### Progress of porous organic cages in photo/electrocatalytic energy conversion and storage applications

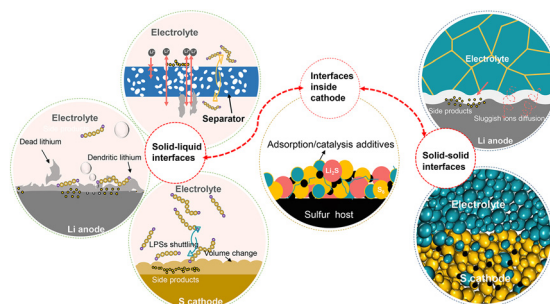
Rahul Anil Borse, Yan-Xi Tan, Daqiang Yuan\* and  
Yaobing Wang\*



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### Interface engineering toward stable lithium–sulfur batteries

Yi Guo, Qian Niu, Fei Pei, Qian Wang, Yun Zhang,  
Liyu Du, Yin Zhang, Yunsheng Zhang, Yueying Zhang,  
Ling Fan, Qianyu Zhang,\* Lixia Yuan\* and Yunhui Huang\*



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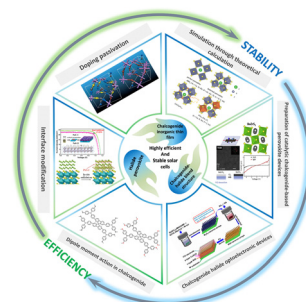


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## Enhancing the inherent stability of perovskite solar cells through chalcogenide-halide combinations

Cheng Wang, Riming Nie,\* Yiming Dai, Huanyu Tai, Bingjian Zhu, Luyao Zhao, Yong Wu, Wanlin Guo\* and Sang Il Seok\*

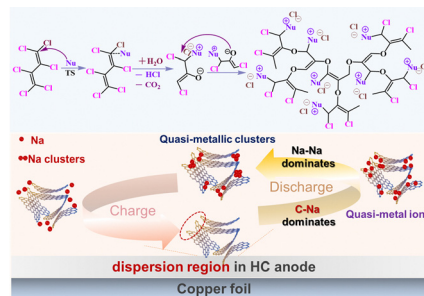


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## Unlocking the local structure of hard carbon to grasp sodium-ion diffusion behavior for advanced sodium-ion batteries

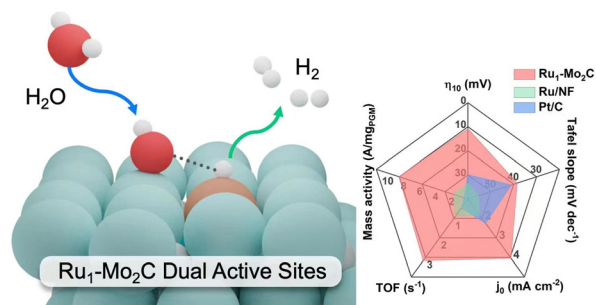
Xin Feng, Yu Li,\* Ying Li, Mingquan Liu, Lumin Zheng, Yuteng Gong, Ripeng Zhang, Feng Wu, Chuan Wu\* and Ying Bai\*



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## Reversible hydrogen spillover at the atomic interface for efficient alkaline hydrogen evolution

Tingting Chao, Wenbo Xie, Yanmin Hu, Ge Yu, Tonghui Zhao, Cai Chen, Zedong Zhang, Xun Hong, Huile Jin, Dingsheng Wang, Wei Chen,\* Xinhua Li,\* P. Hu\* and Yadong Li\*

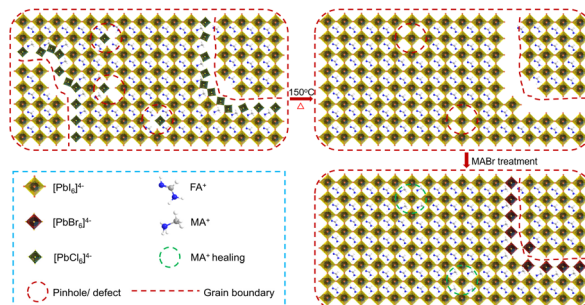


## PAPERS

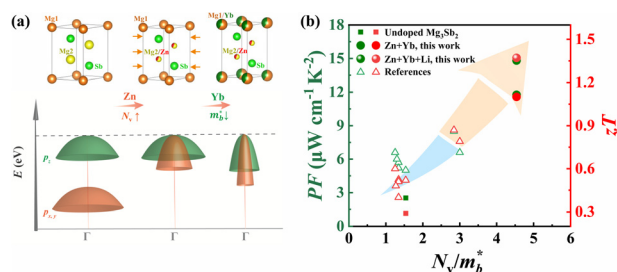
1407

Crystallization dynamics and stabilization of FAPbI<sub>3</sub> single-phase perovskite

Weiwei Zuo, Weifei Fu, Ke Wang, Chittarajan Das, Mahdi Malekshahi Byranvand, Kai-Li Wang, Aditya Chaudhary, Jaekeun Lim, Meng Li\* and Michael Saliba\*



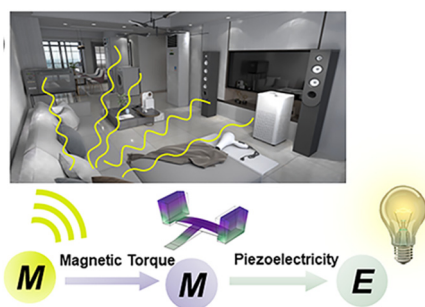
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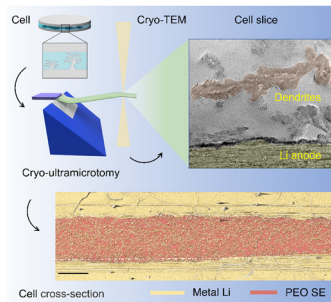
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### Giant tridimensional power responses in a T-shaped magneto–mechano–electric energy harvester

Zhonghui Yu, Jikun Yang,\* Lei Xu, Jianglei Chang, Zhanmiao Li, Xiaoting Yuan and Shuxiang Dong\*

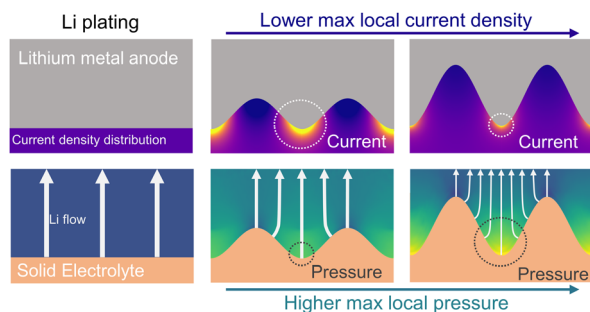
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### Cryo-ultramicrotomy enables TEM characterization of global lithium/polymer interfaces

Xuedong Zhang, Ziang Guo, Xin Li, Qiunan Liu, Huan Hu, Fangyuan Li, Qiao Huang, Liqiang Zhang,\* Yongfu Tang\* and Jianyu Huang\*

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### Influence of contouring the lithium metal/solid electrolyte interface on the critical current for dendrites

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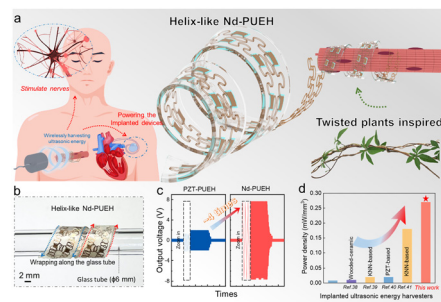




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## A wireless ultrasound energy harvester based on flexible relaxor ferroelectric crystal composite arrays for implanted bio-electronics

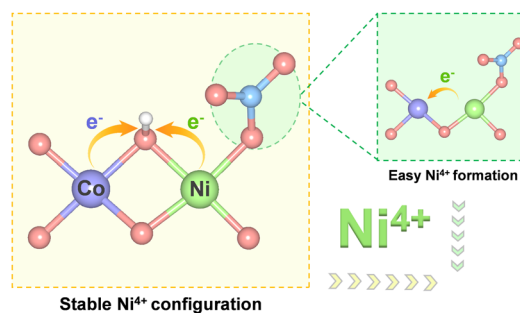
Nanxiang Jia, Qian Li, ChunChun Li, Hongliang Du, Xiangyu Gao,\* Yangbin Liu, Kexin Song, Haonan Jin, Kaile Ren, Chaorui Qiu, Li Ning, Zhuo Xu\* and Fei Li\*



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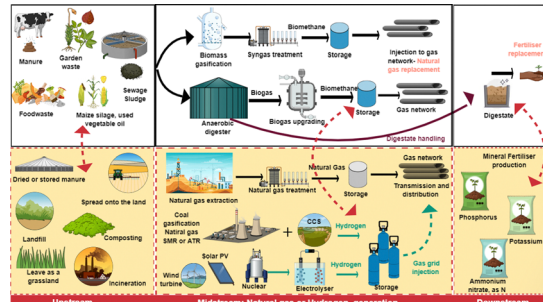
Ya-Nan Zhou, Feng-Ting Li, Bin Dong\* and Yong-Ming Chai\*



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## A comparative study of biogas and biomethane with natural gas and hydrogen alternatives

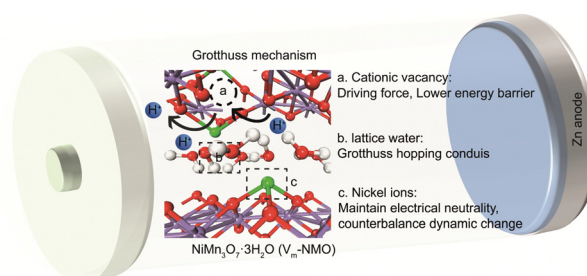
Semra Bakkaloglu\* and Adam Hawkes



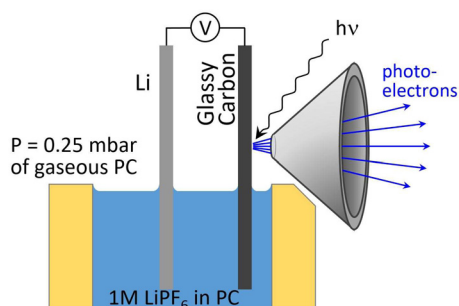
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## Highly stable manganese oxide cathode material enabled by Grotthuss topochemistry for aqueous zinc ion batteries

Fangjia Zhao, Jianwei Li, Arunabharam Chutia, Longxiang Liu, Liqun Kang, Feili Lai, Haobo Dong, Xuan Gao, Yeshu Tan, Tianxi Liu, Ivan P. Parkin\* and Guanjie He\*



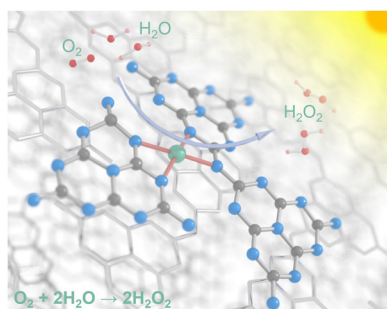
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### Operando observation of the dynamic SEI formation on a carbonaceous electrode by near-ambient pressure XPS

F. G. Capone, J. Sotmann, V. Meunier, L. Pérez Ramírez, A. Grimaud, A. Iadecola, M. Scardamaglia, J.-P. Rueff and R. Dedryvère\*

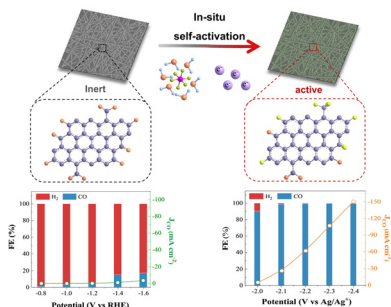
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### Cooperative tungsten centers in polymeric carbon nitride for efficient overall photosynthesis of hydrogen peroxide

Chengyang Feng, Jun Luo, Cailing Chen, Shouwei Zuo, Yuanfu Ren, Zhi-Peng Wu, Miao Hu, Samy Ould-Chikh, Javier Ruiz-Martínez, Yu Han\* and Huabin Zhang\*

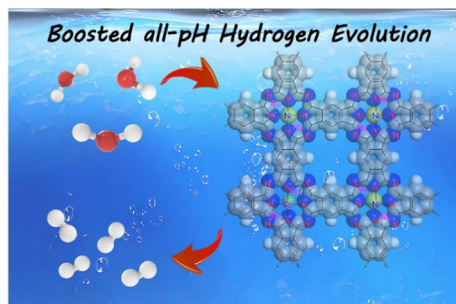
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### Inert is not inactive: origin of carbon dioxide electroreduction activity over a carbon current collector-based electrode

Minyang Dai, Wenpeng Ni, Zhouliangzi Zeng, Wei Zhang, Yan Zhang, Shuangyin Wang and Shiguo Zhang\*

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### Electronic structure optimization of metal-phthalocyanine via confining atomic Ru for all-pH hydrogen evolution

Zhenhui Kou, Yingnan Liu, Wenjun Cui, Bin Yang, Zhongjian Li, Raul D. Rodriguez, Qinghua Zhang, Chung-Li Dong, Xiahan Sang, Lecheng Lei, Tao Zhang\* and Yang Hou\*

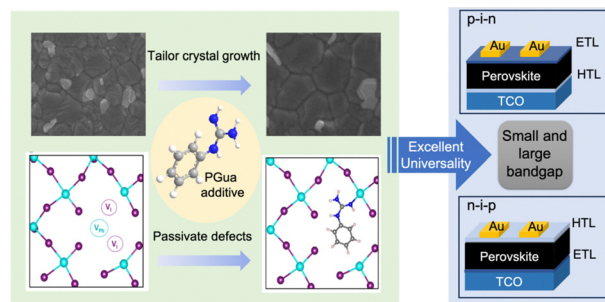


## PAPERS

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### A universal ligand for lead coordination and tailored crystal growth in perovskite solar cells

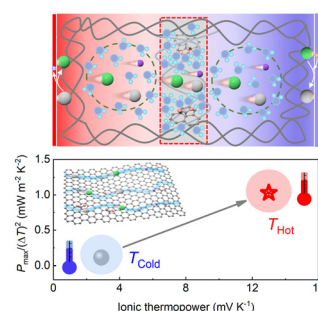
Bowen Yang, Jiajia Suo,\* Dmitry Bogachuk, Waldemar Kaiser, Clemens Baretzky, Oussama Er-Raji, Georgios Loukeris, Asma A. Alothman, Edoardo Mosconi, Markus Kohlstädt, Uli Würfel, Filippo De Angelis and Anders Hagfeldt\*



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### Remarkable high-temperature ionic thermoelectric performance induced by graphene in gel thermocells

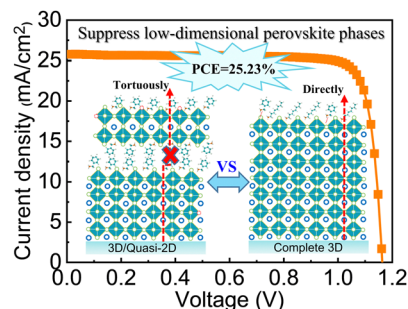
Cheng-Gong Han,\* Yong-Bin Zhu, Lijuan Yang, Jiawei Chen, Shengjie Liu, Haoyu Wang, Yingming Ma, Dongxue Han and Li Niu\*



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### Bi-molecular kinetic competition for surface passivation in high-performance perovskite solar cells

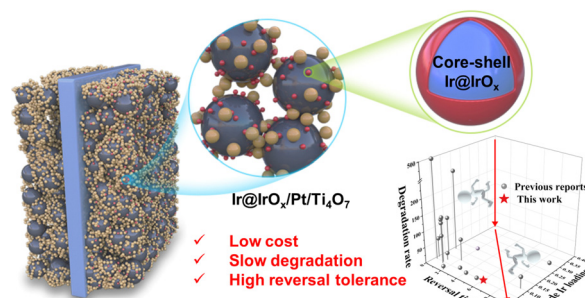
Yinyi Ma, Faming Li, Jue Gong, Lina Wang, Xiao Tang, Peng Zeng, Pok Fung Chan, Weidong Zhu, Chunfu Zhang and Mingzhen Liu\*



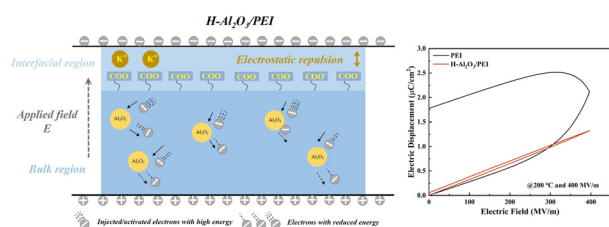
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### Constructing highly durable reversal-tolerant anodes via integrating high-surface-area $\text{Ti}_4\text{O}_7$ supported Pt and $\text{Ir@IrO}_x$ for proton exchange membrane fuel cells

Zheng Li, Yongbiao Mu, Qing Zhang, Haodong Huang, Xianbin Wei, Lin Yang, Guanxiong Wang, Tianshou Zhao,\* Gang Wu\* and Lin Zeng\*



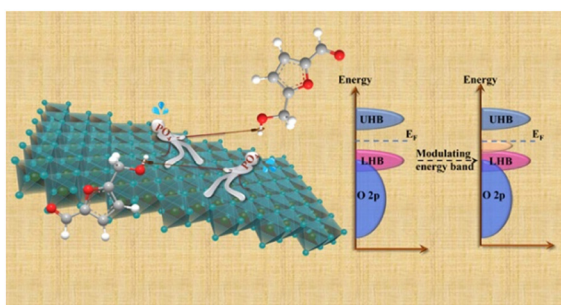
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### Surface ion-activated polymer composite dielectrics for superior high-temperature capacitive energy storage

Minhao Yang,\* Yanlong Zhao, Zepeng Wang, Huarui Yan, Zeren Liu, Qi Li\* and Zhi-Min Dang\*

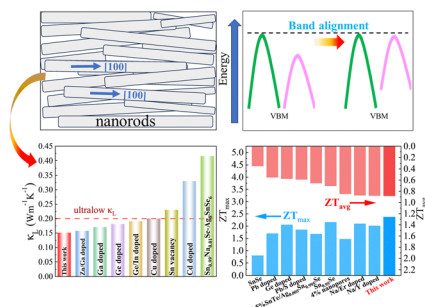
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### Proton transfer mediator for boosting the current density of biomass electrooxidation to the ampere level

Zhaohui Yang, Shao Wang, Chenyang Wei, Lan Chen, Zhimin Xue\* and Tiancheng Mu\*

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### Realizing the high thermoelectric performance of highly preferentially oriented SnSe based nanorods via band alignment

Yaru Gong, Pan Ying, Qingtang Zhang, Yuqi Liu, Xinqi Huang, Wei Dou, Yujing Zhang, Di Li, Dewei Zhang, Tao Feng, Meiyu Wang,\* Guang Chen\* and Guodong Tang\*

