

Energy & Environmental Science

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See Guoming Ma, Dingguo Xia, Hao Zhao *et al.*, pp. 8756–8767. Image reproduced by permission of Hao Zhao from *Energy Environ. Sci.*, 2025, **18**, 8756.



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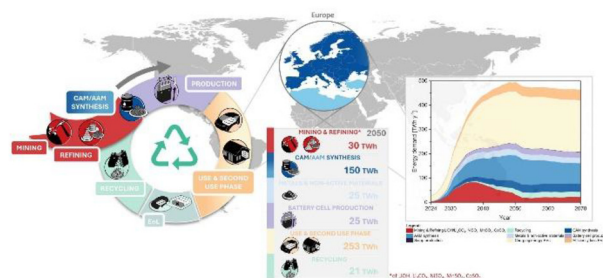
See Xiaodong Shi, Wei Zhang, Xinlong Tian *et al.*, pp. 8768–8779. Image reproduced by permission of Xinlong Tian from *Energy Environ. Sci.*, 2025, **18**, 8768.

ANALYSIS

8724

Future energy demand for automotive and stationary lithium- and sodium-ion battery production towards a European circular economy

Lukas Ihlbrock, Anne Sehnal, Moritz Gutsch and Simon Lux*

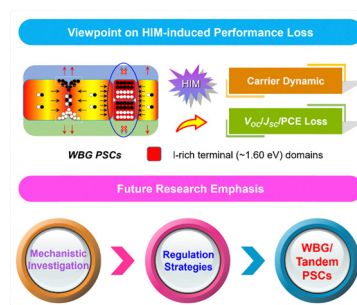


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Deciphering halide ion migration and performance loss in wide-bandgap perovskite solar cells: connection, mechanism, and solutions

Yuxiao Guo, Hairan Tan* and Bo Xu*



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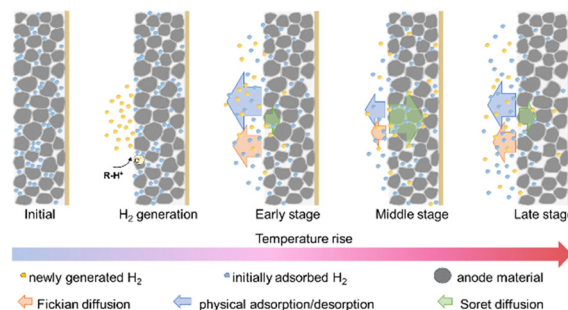


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Operando observing hydrogen evolution in commercial lithium-ion batteries

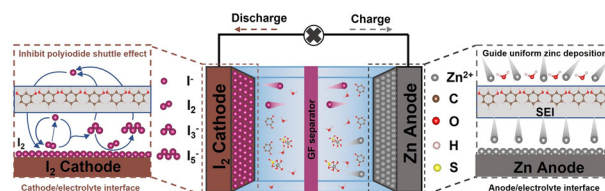
Yuan Wang, Shuyan Guo, Yuntian Guo, Peng Zhang, Guoming Ma,* Dingguo Xia* and Hao Zhao*



8768

Taming polyiodides: phenol chemistry for shuttle-free and durable zinc-iodine batteries

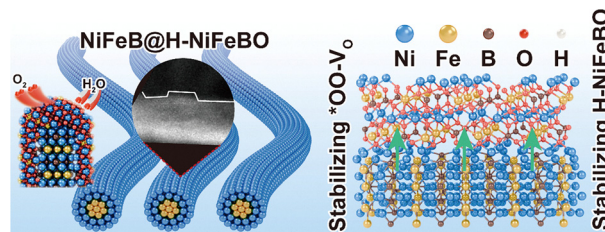
Zhixiang Chen, Xinlei Gao, Lutong Shan, Qingjin Fu, Zhenyue Xing, Peng Rao, Zhenye Kang, Xiaodong Shi,* Wei Zhang* and Xinlong Tian*



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High-index facet NiFeB@H-NiFeBO core-shell nanowires for a highly efficient oxygen evolution reaction in water splitting

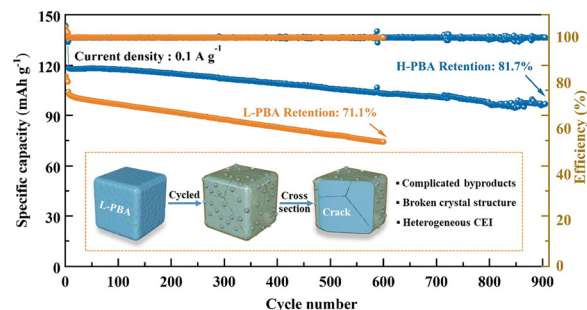
Xing Wang, Wei Pi, Yu Qiu, Zhangquan Gong, Jinchang Fan, Haifeng Bao,* Na Yao* and Xiaoqiang Cui*



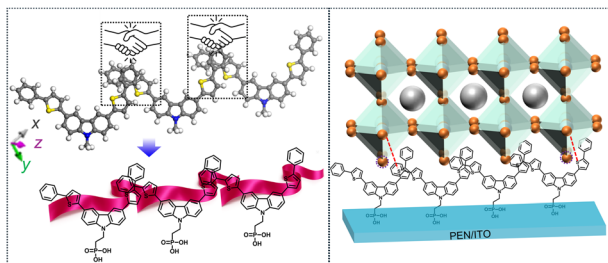
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Unraveling the degradation mechanism of sodium iron hexacyanoferrate cathodes in sodium ion batteries

Junyi Dai, Jiahao Li, Fangxin Ling, Yu Yao,* Yanru Wang, Mingze Ma, Jian Feng, Jun Xia, Yinbo Zhu, Hai Yang,* Xianhong Rui, Hengan Wu and Yan Yu*



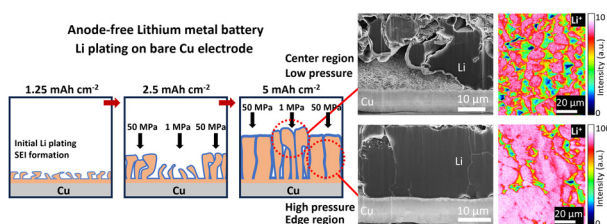
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Soft conjugation extension strategy of self-assembled molecules for achieving efficient and mechanically stable flexible perovskite solar cells

Biao Zhou, Mingliang Li,* Qi Xiong, Liren Zhang, Shiwei Zhang, Jiayun Sun, Jinyao Tang* and Wallace C. H. Choy*

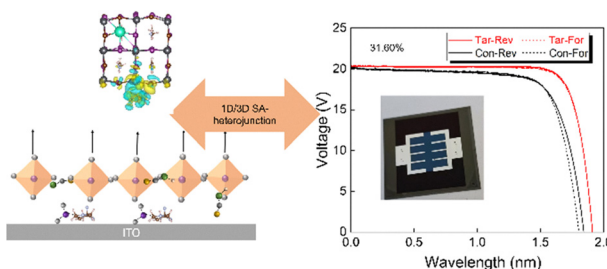
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Direct visualization and mechanistic insights into initial lithium plating in anode-free lithium metal batteries

Jin Su* and Chun Huang*

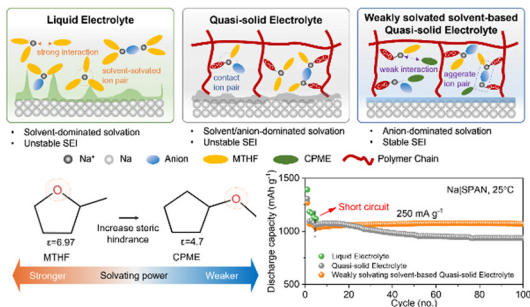
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Bottom directional deposition perovskite heterojunctions for efficient and stable lead halide perovskite/silicon tandem solar cells

Shengjie Du, Feng Ye, Yutao Wang, Shuangbiao Xia, Guoyi Chen, Zhiqiu Yu, Kailian Dong, Zixi Yu, Yangyang Guo, Kexin Ming, Yansong Ge, Qinxian Lin, Kun Dai, Jiwei Liang, Zhenhua Yu,* Weijun Ke,* Liping Zhang* and Guojia Fang*

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A weakly solvating solvent-based quasi-solid electrolyte for sodium metal batteries

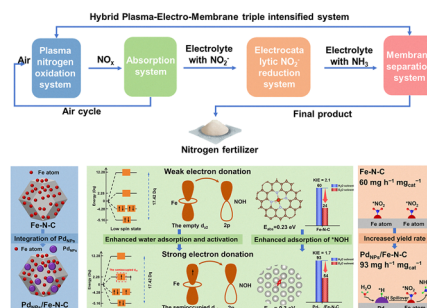
Ho Mei Law, Zilong Wang, Shengjun Xu, Longyun Shen, Baptiste Py, Yuhao Wang, Renée Siegel, Jürgen Senker, Qingsong Wang* and Francesco Ciucci*



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A hybrid plasma-electro-membrane triple intensified system over Pd_{NPs}/Fe–N–C for ammonium fertilizer synthesis

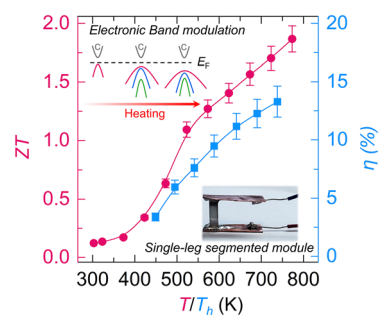
Cheng Wang, Chang Yu,* Bingzhi Qian, Yongwen Ren, Rulong Ma, Yue Chu and Jieshan Qiu*



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Manganese doping induced record-high medium-temperature AgCuTe thermoelectrics

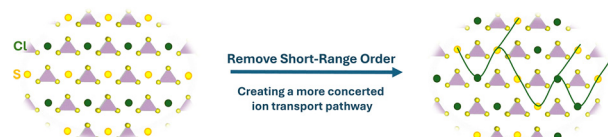
Nan-Hai Li, Xiao-Lei Shi,* Chao Zhang, Meng Li, Xiaodong Wang, Min Zhang, Wen-Yi Chen, Yong-Qi Chen, Dmitri Golberg, Dong-Chen Qi and Zhi-Gang Chen*



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How multi-length scale disorder shapes ion transport in lithium argyrodites

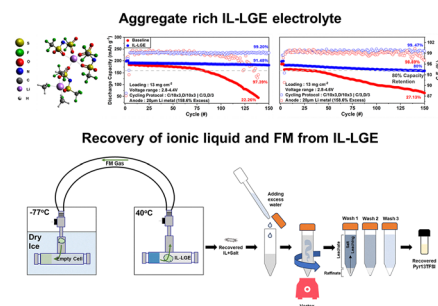
Bartholomew T. Payne, Mikkel Juulsholt, Miguel A. Pérez-Osorio, Dominic L. R. Melvin, Gabriel J. Cuello, Emmanuelle Suard, Daniel J. M. Irving, Nicholas H. Rees, Mark Feavriour, Enrico Petrucco, Stephen P. Day, Gregory J. Rees* and Peter G. Bruce*



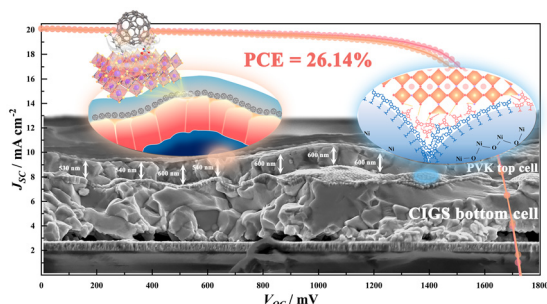
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Recoverable aggregate-rich liquefied gas electrolytes for enabling high-voltage lithium metal batteries

Ganesh Raghavendran, Alex Liu, Oleg Borodin, Nathan Hahn, Kevin Leung, Na-Ri Park, Tejas Nivarty, Mingqian Li, Aiden Larson, Yijie Yin, Minghao Zhang* and Ying Shirley Meng*



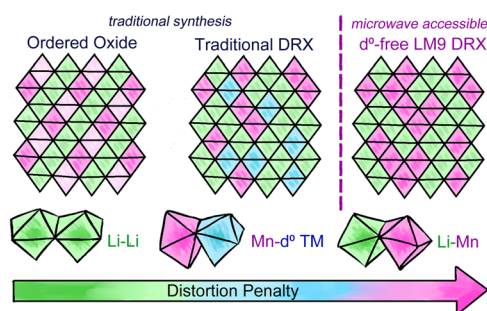
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Two-terminal perovskite/Cu(In,Ga)Se₂ tandems with conformal coatings based on commercial bottom cells with >26% efficiency

Cong Geng, Kuanxiang Zhang, Jiwen Jiang, Changhua Wang, Chung Hsien Wu, Jize Wang, Fei Long, Liyuan Han, Yi-Bing Cheng and Yong Peng*

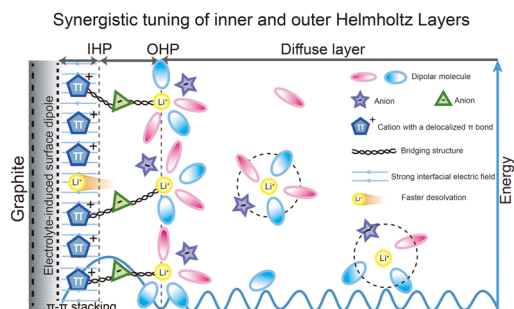
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High energy density and micrometer-sized d⁰-free disordered rocksalt cathodes

Vincent C. Wu, Erick A. Lawrence, Tianyu Li, Euan N. Basse, Chia-Yu Chang, Bing Joe Hwang, Pierre-Etienne Cabelguen and Raphaële J. Clément*

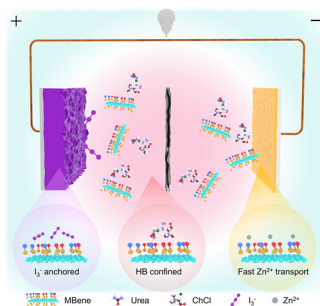
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Synergistic tuning of inner and outer Helmholtz layers for ultra-stable fast charging in lithium-ion batteries

Sai Li, Xianhui Zhao, Zheng Liu, Rang Xiao, Xin Zhang, Binghan Cui, Geping Yin, Pengjian Zuo, Yulin Ma, Chaoyang Li, Ning Wang, Guokang Han,* Huaizheng Ren* and Chunyu Du*

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An MBene-based colloidal electrolyte for high depth-of-discharge and energy-density 2 Ah-scale Zn metal batteries

Hongyu Qin, Ao Liu, Kefeng Ouyang, Sheng Chen, Shubing Wei and Yan Huang*

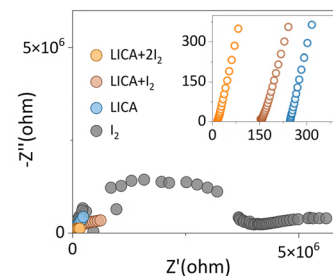
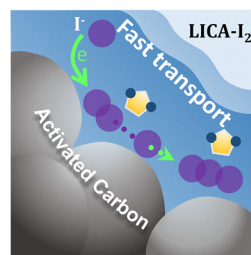


PAPERS

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Hydrophobic ionic liquid enabled polyiodide confined transport in a cathode, realizing high areal capacity, stable zinc–iodine batteries

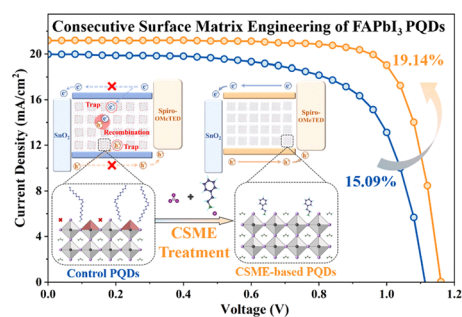
Lanya Zhao, Dandan Yin, Yanan Zhang, Boyang Li, Shen Wang, Xiaofeng Cui, Jie Feng, Na Gao, Xiaowei Liu, Shujiang Ding* and Hongyang Zhao*



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Consecutive surface matrix engineering of FAPbI₃ perovskite quantum dots for solar cells with over 19% efficiency

Mingxu Zhang, Sicong Huang, Xinyi Mei, Guoliang Wang, Bainian Ren, Junming Qiu, Zehong Yuan and Xiaoliang Zhang*



CORRECTION

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Correction: Deciphering the interplay between tin vacancies and free carriers in the ion transport of tin-based perovskites

Luis Huerta Hernandez, Luis Lanzetta, Anna M. Kotowska, Ilhan Yavuz, Nikhil Kalasariya, Badri Vishal, Marti Gibert-Roca, Matthew Piggott, David J. Scurr, Stefaan De Wolf, Martin Stotterfoht and Derya Baran*

