

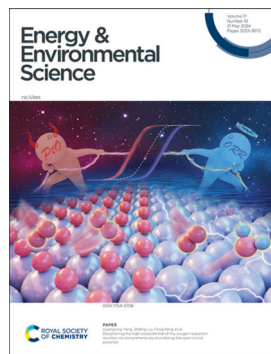
Energy & Environmental Science

rsc.li/ees

The Royal Society of Chemistry is the world's leading chemistry community. Through our high impact journals and publications we connect the world with the chemical sciences and invest the profits back into the chemistry community.

IN THIS ISSUE

ISSN 1754-5706 CODEN EESNBY 17(10) 3233-3672 (2024)



Cover

See Guangxing Yang, Zhiting Liu, Feng Peng *et al.*, pp. 3338–3346. Image reproduced by permission of Feng Peng from *Energy Environ. Sci.*, 2024, 17, 3338.



Inside cover

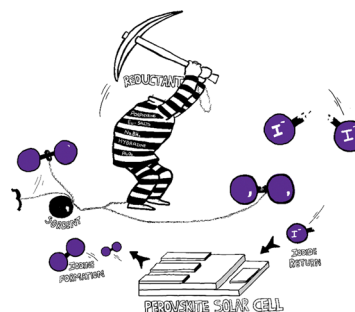
See Jinping Li, Guang Liu, Xiaopeng Han *et al.*, pp. 3347–3357. Image reproduced by permission of Xiaopeng Han from *Energy Environ. Sci.*, 2024, 17, 3347.

REVIEWS

3244

A comparison of molecular iodine evolution on the chemistry of lead and tin perovskites

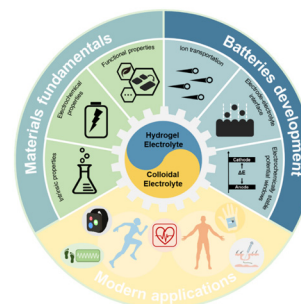
Thomas Webb and Saif A. Haque*



3270

Critical challenges and solutions: quasi-solid-state electrolytes for zinc-based batteries

Haoyang Ge, Xian Xie,* Xuesong Xie, Bingyao Zhang, Shenglong Li, Shuquan Liang, Bingan Lu and Jiang Zhou*



Environmental Science journals

One impactful portfolio for
every exceptional mind

Harnessing the power of interdisciplinary
science to preserve our environment

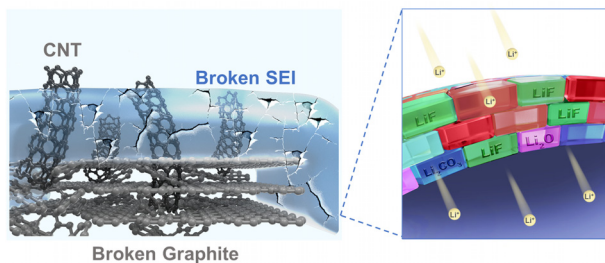


rsc.li/envsci

Fundamental questions
Elemental answers



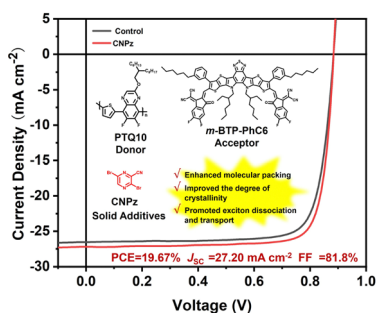
3358



The acupuncture effect of carbon nanotubes induced by the volume expansion of silicon-based anodes

Ziying He, Chenxi Zhang, Yukang Zhu and Fei Wei*

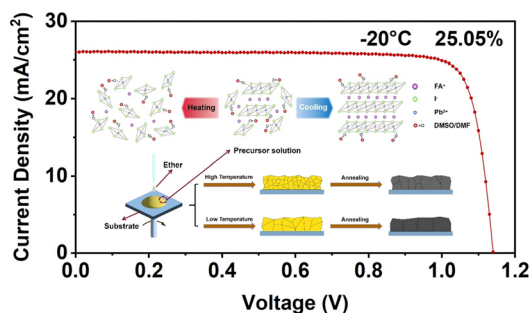
3365



Cyano-functionalized pyrazine: an electron-deficient unit as a solid additive enables binary organic solar cells with 19.67% efficiency

Lijun Tu, Hao Wang, Weixu Duan, Ruijie Ma,* Tao Jia, Top Archie Dela Peña, Yongmin Luo, Jiaying Wu, Mingjie Li, Xiaomin Xia, Siqi Wu, Kai Chen,* Yue Wu, Yulin Huang, Kun Yang, Gang Li* and Yongqiang Shi*

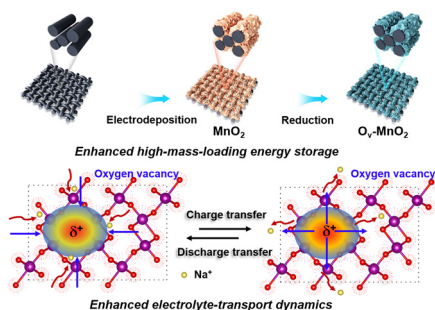
3375



"Freezing" intermediate phases for efficient and stable FAPbI₃ perovskite solar cells

Muyang Chen, Tingting Niu, Lingfeng Chao, Xiaozheng Duan, Jingpei Wang, Tengfei Pan, Yajing Li, Junhan Zhang, Chenyue Wang, Biyun Ren, Lijuan Guo, Mohammad Hatamvand, Jing Zhang, Qingxun Guo, Yingdong Xia, Xingyu Gao and Yonghua Chen*

3384



Regulating oxygen vacancies and coordination environment of manganese dioxide for enhanced high-mass-loading energy storage

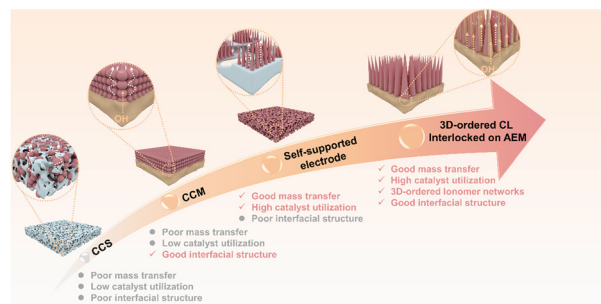
Zhongyou Peng, Yuting Huang, Alexander G. Bannov, Shulong Li, Ling Tang, Licheng Tan* and Yiwang Chen*



3396

3D-ordered catalytic nanoarrays interlocked on anion exchange membranes for water electrolysis

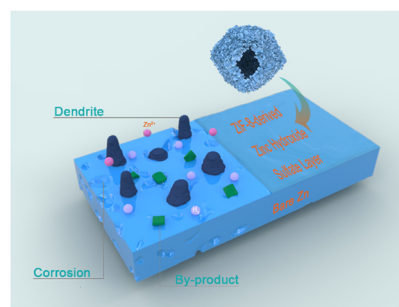
Lei Wan, Jing Liu, Dongcheng Lin, Ziang Xu, Yihan Zhen, Maobing Pang, Qin Xu and Baoguo Wang*



3409

Inherited construction of porous zinc hydroxide sulfate layer for stable dendrite-free Zn anode

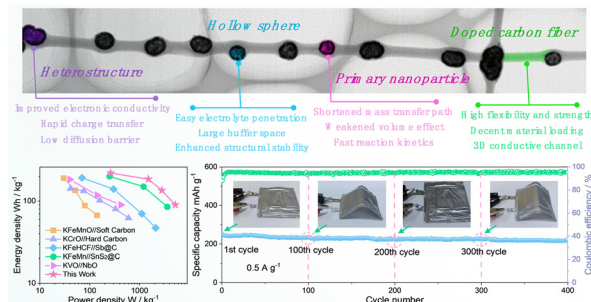
Zhicheng Xiang, Yubing Qiu, Xingpeng Guo, Kai Qi,* Zheng-Long Xu* and Bao Yu Xia*



3419

Confining hollow ZnSe/NiSe microspheres in freestanding carbon nanofibers for flexible potassium-ion batteries

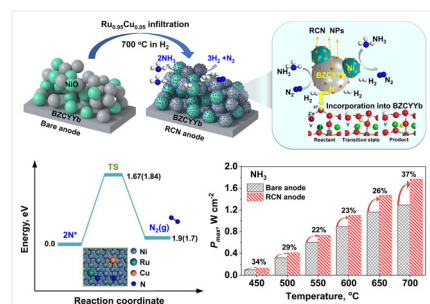
Bo Yan, Hao Sun, Xueping Liu, Xinyuan Fu, Changqing Xu, Tiantian Zhang, Huachao Tao, Lulu Zhang, Xifei Li, Xuelin Yang* and Renheng Wang*



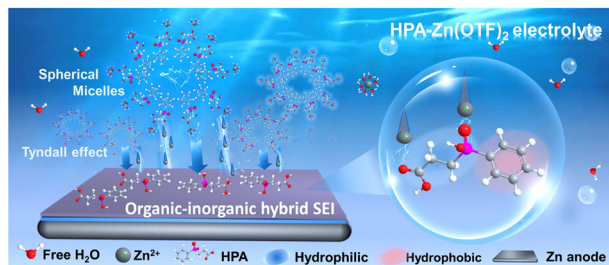
3433

In situ formed catalysts for active, durable, and thermally stable ammonia protonic ceramic fuel cells at 550 °C

Hua Zhang, Kang Xu, Yangsen Xu, Fan He, Feng Zhu, Kotaro Sasaki, YongMan Choi* and Yu Chen*



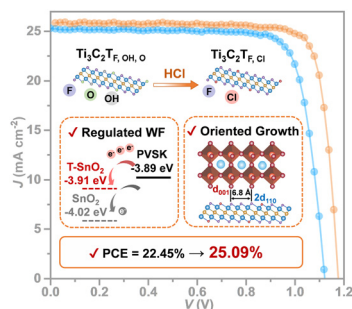
3443



Amphiphilic electrolyte additive as an ion-flow stabilizer enables superb zinc metal batteries

Zimin Yang, Yilun Sun, Siting Deng, Hao Tong, Mingqiang Wu, Xinbin Nie, Yifan Su, Guanjie He, Yinghe Zhang, Jianwei Li* and Guoliang Chai*

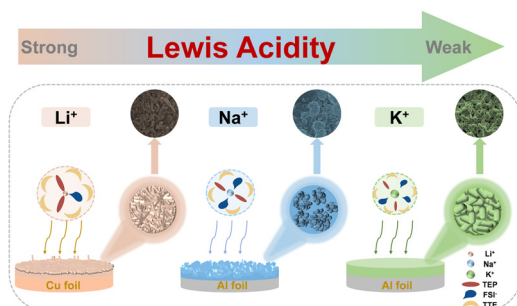
3454



Chlorinated-Ti₃C₂F₇ as a dual-functional buried interface on SnO₂ electron-transporting layers for 25.09% high-performance n-i-p perovskite solar cells

Ji Cao, Qiaoyun Chen, Wenting Wu, Jianfei Fu, Zelong Zhang, Lei Chen, Rui Wang, Wei Yu, Lijie Wang, Xiaoting Nie, Jing Zhang, Yi Zhou,* Bo Song* and Yongfang Li*

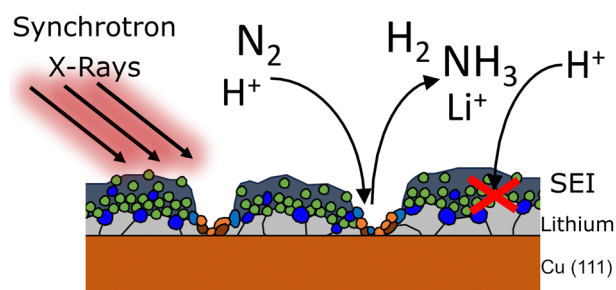
3470



Superior electrochemical performance of alkali metal anodes enabled by milder Lewis acidity

Linlin Wang, Jiacheng Zhu, Nan Li, Zhe Zhang, Shiwan Zhang, Yifan Chen, Jianwen Zhang, Yusi Yang, Lulu Tan, Xiaogang Niu, Xuefeng Wang,* Xiao Ji* and Yujie Zhu*

3482



Operando investigations of the solid electrolyte interphase in the lithium mediated nitrogen reduction reaction

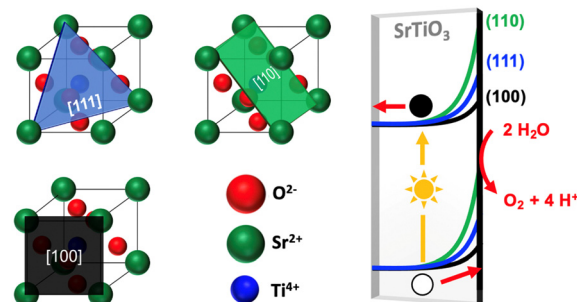
Niklas H. Deissler, J. Bjarke V. Mygind, Katja Li, Valerie A. Niemann, Peter Benedek, Valentin Vinci, Shaofeng Li, Xianbiao Fu, Peter C. K. Vesborg, Thomas F. Jaramillo, Jakob Kibsgaard, Jakub Drnec and Ib Chorkendorff*



3493

Facets control charge separation during photoelectrochemical water oxidation with strontium titanate (SrTiO₃) single crystals

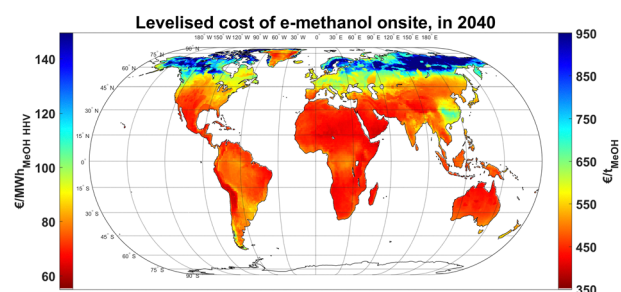
Samutr Assavachin, Chengcan Xiao,
Kathleen Becker and Frank E. Osterloh*



3503

Global production potential of green methanol based on variable renewable electricity

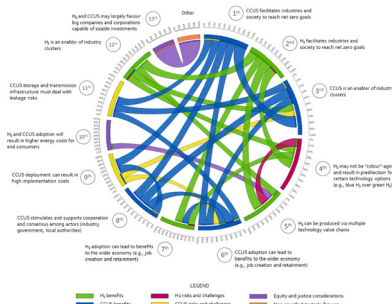
Mahdi Fasihi* and Christian Breyer



3523

Reconfiguring European industry for net-zero: a qualitative review of hydrogen and carbon capture utilization and storage benefits and implementation challenges

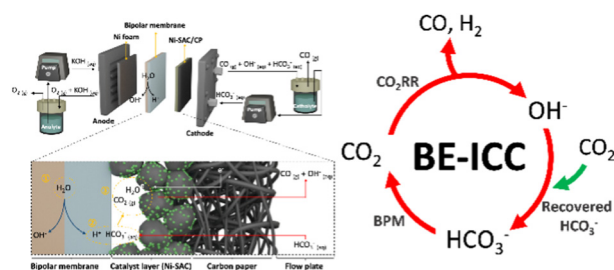
Benjamin K. Sovacool,* Dylan Furszyfer Del Rio,
Kyle Herman, Marfuga Iskandarova,
Joao M. Uratani and Steve Griffiths



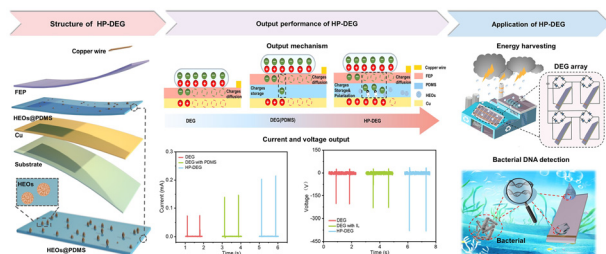
3570

Integrated carbon capture and CO production from bicarbonates through bipolar membrane electrolysis

Hakhyeon Song, Carlos A. Fernández, Hyeonuk Choi,
Po-Wei Huang, Jihun Oh* and Marta C. Hatzell*



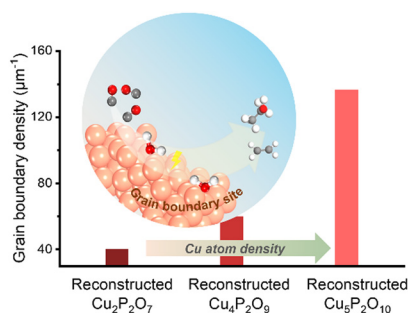
3580



Enhancement of the voltage output of droplet electricity generators using high dielectric high-entropy oxide composites

Yanan Zhou, Yan Zeng, Jianming Wang, Xiaoyi Li, Peng Wang,* Wenlong Ma, Congyu Wang, Jiawei Li, Wenyong Jiang and Dun Zhang

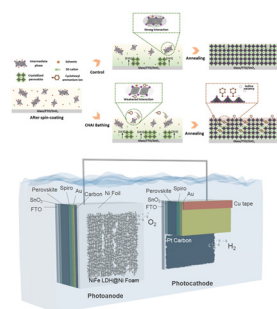
3594



Grain boundary generation *via* steering $\text{Cu}_x\text{P}_2\text{O}_{x+5}$ precursor composition enhances CO electrolysis

Jiaqi Sang, Tianfu Liu, Pengfei Wei, Hefei Li, Conghui Liu, Yi Wang, Youwen Rong, Qi Wang, Guoxiong Wang* and Xinhe Bao*

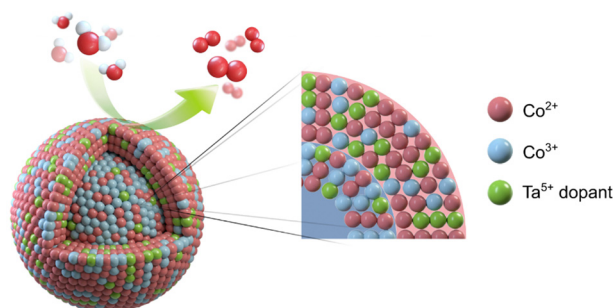
3604



Large-area all-perovskite-based coplanar photoelectrodes for scaled-up solar hydrogen production

Wooyong Jeong, Gyumin Jang, Juwon Yun, Chang-Seop Jeong, Young Sun Park, Hyungsoo Lee, Jaehyun Son, Chan Uk Lee, Jeongyoub Lee, Junwoo Lee, Seongyeon Yang, Soobin Lee, Subin Moon and Jooho Moon*

3618



Tailoring cobalt spinel oxide with site-specific single atom incorporation for high-performance electrocatalysis

Kangjae Lee, Jaehyuk Shim, Hyunsoo Ji, Jungho Kim, Hyeon Seok Lee, Heejong Shin, Megalamane S. Bootharaju, Kug-Seung Lee, Wonjae Ko, Jaewoo Lee, Kang Kim, Seungwoo Yoo, Sungeun Heo, Jaeyune Ryu, Seoin Back,* Byoung-Hoon Lee,* Yung-Eun Sung* and Taeghwan Hyeon*



