



**GOLD  
OPEN  
ACCESS**

# EES Batteries

**Exceptional research on  
batteries and energy storage**

Part of the EES family

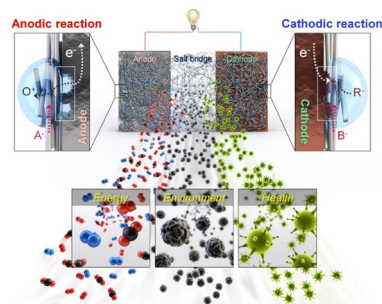


**Join** | Publish with us  
**in** | [rsc.li/EESBatteries](https://rsc.li/EESBatteries)

6204

### Aeroelectrolyte for atmospheric open electrochemical cells

Yeji Lim, Yoon Jeong Yoo, Boran Kim, Suji Kim,  
Ga Yoon Kim and Won-Hee Ryu\*

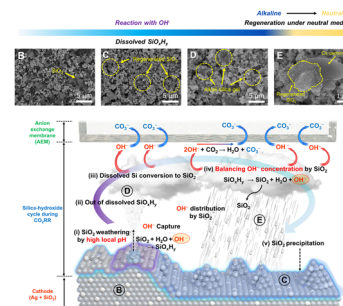


PAPERS

6215

### Breaking the current limitation of electrochemical CO<sub>2</sub> reduction via a silica-hydroxide cycle

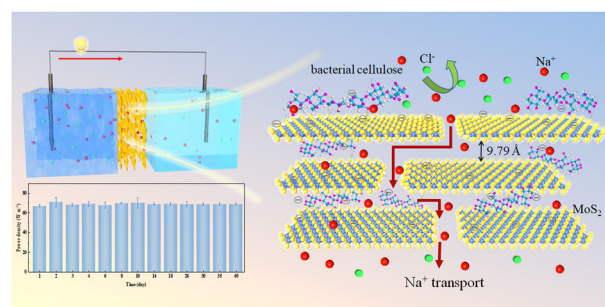
Chulwan Lim, Sangkuk Kim, Ji Hwan Song, Man Ho Han,  
Young-Jin Ko, Kwan-Young Lee, Jae-Young Choi,  
Woong Hee Lee\* and Hyung-Suk Oh\*



6225

### A subnano-confinement in robust MoS<sub>2</sub>-based membranes for high-performance osmotic energy conversion

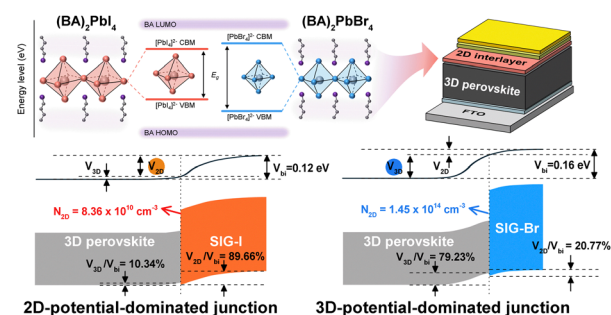
Xuying Wang, Zhaoyi Wang, Zhiwei Xue, Yiyi Fan,  
Jing Yang, Qingxiao Zhang, Naitao Yang,\* Xiuxia Meng,\*  
Yun Jin and Shaomin Liu\*



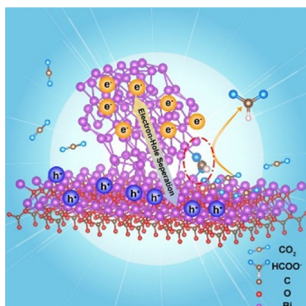
6234

### Deciphering 2D perovskite's role in perovskite solar cells via intact 3D/2D junctions

Seungmin Lee, Hyeonah Cho, Sohyun Kang, Oui Jin Oh,  
Dong Hyun Kim and Jun Hong Noh\*



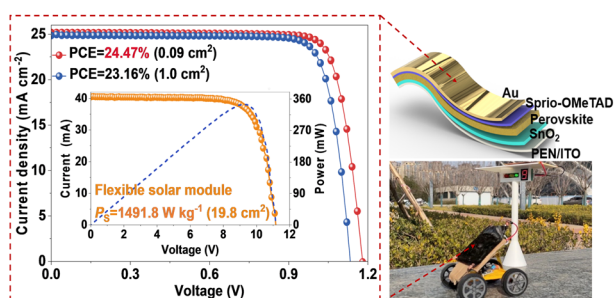
6245



### Regenerative *in situ* formed Bi nanoparticles on Bi<sub>2</sub>O<sub>2</sub>CO<sub>3</sub> nanosheets with Bi-vacancies for efficient and stable photocatalytic CO<sub>2</sub> reduction to formate

Donglian Wen, Jie Zhao, Yang You, Liang Huang, Haoheng Zhu, Chuanghui Zhang, Donglei Bu\* and Shaoming Huang\*

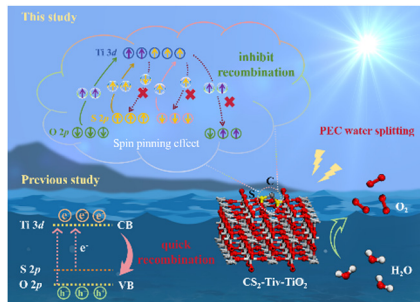
6256



### Crystallization control *via* ligand–perovskite coordination for high-performance flexible perovskite solar cells

Xin Chen, Weilun Cai, Tianqi Niu,\* Hui Wang, Chou Liu, Zheng Zhang, Yachao Du, Shuang Wang, Yang Cao, Pengchi Liu, Wenliang Huang, Chuang Ma, Ben Yang, Shengzhong (Frank) Liu and Kui Zhao\*

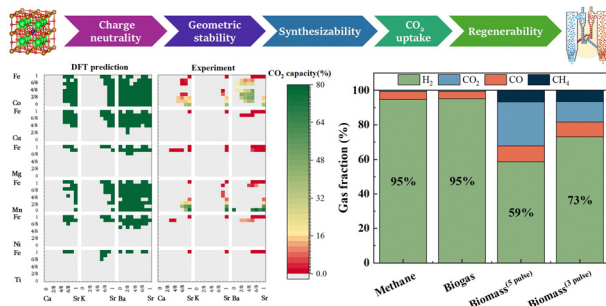
6268



### Regulating the electron spin orbital by sulfur doping of Ti vacancies to manipulate spin flip for enhancing PEC water splitting performance

Yixuan Gao, Min Zhang, Qi Zhao, Wen Liu, Lirong Zheng, Jin Ouyang and Na Na\*

6279



### High-throughput design of complex oxides as isothermal, redox-activated CO<sub>2</sub> sorbents for green hydrogen generation

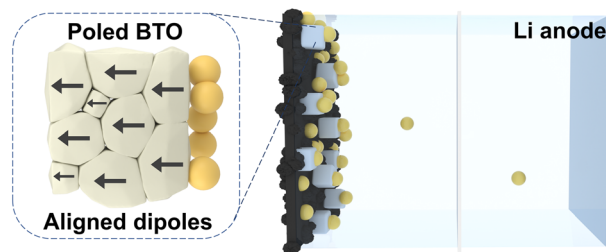
Runxia Cai, Kunran Yang, Xijun Wang, Mahe Rukh, Azin Saberi Bosari, Eric Giavedoni, Alexandra Pierce, Leo Brody, Wentao Tang, Phillip R. Westmoreland and Fanxing Li\*



6291

### Enhanced polysulfide trapping in Li–S batteries by dipole alignment in ferroelectric BaTiO<sub>3</sub>

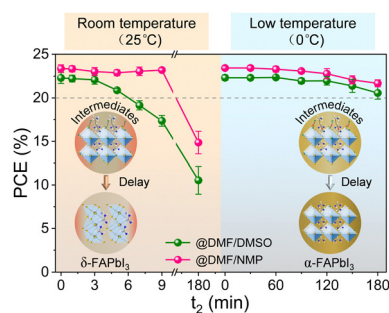
Jinglin Jiang, Jorge Ontaneda, Subhajit Pal, Zhenyu Guo, Chloe Forrester, Kaitian Zheng, Mengnan Wang, Joe Briscoe,\* Maria-Magdalena Titirici\* and Heather Au\*



6302

### Efficient perovskite solar modules with an ultra-long processing window enabled by cooling stabilized intermediate phases

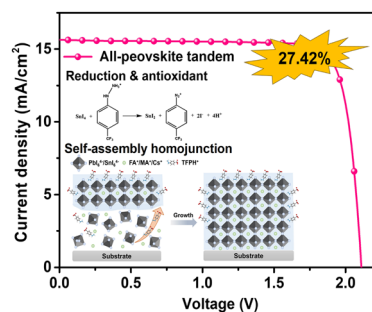
Zhi Wan, Bin Ding, Jie Su, Zhenhuang Su, Zhihao Li, Chunmei Jia, Zhe Jiang, Qianqian Qin, Meng Zhang, Jishan Shi, Haodong Wu, Chongyang Zhi, Fengwei Wang, Chuan Li, Liming Du, Chao Zhang, Yong Ding, Can Li, Xingyu Gao, Chuanxiao Xiao, Jingjing Chang,\* Mohammad Khaja Nazeeruddin\* and Zhen Li\*



6314

### Self-assembly construction of a homojunction of Sn–Pb perovskite using an antioxidant for all-perovskite tandem solar cells with improved efficiency and stability

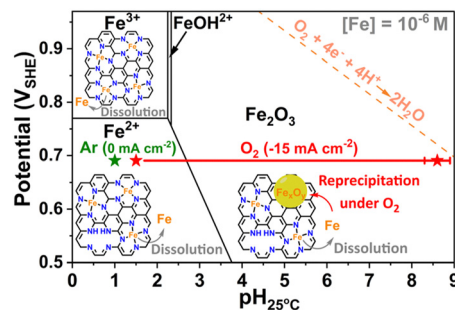
Zhuojia Lin, Jianwei Chen, Chenghao Duan, Kezhou Fan, Jiong Li, Shibing Zou, Feilin Zou, Ligang Yuan, Zheng Zhang, Kaicheng Zhang, Man Yu Lam, Sergeev A. Aleksandr, Jianhang Qiu, Kam Sing Wong, He Yan and Keyou Yan\*



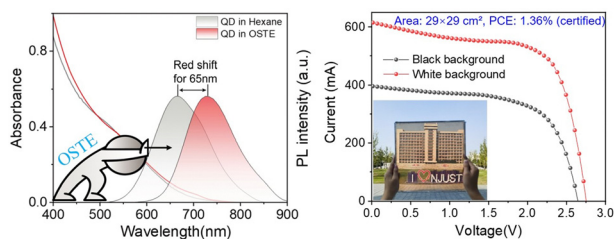
6323

### Operando Fe dissolution in Fe–N–C electrocatalysts during acidic oxygen reduction: impact of local pH change

Angus Pedersen, Kavita Kumar, Yu-Ping Ku, Vincent Martin, Laetitia Dubau, Keyla Teixeira Santos, Jesús Barrio, Viktoriia A. Saveleva, Pieter Glatzel, Vinod K. Paidi, Xiaoyan Li, Andreas Hutzler, Maria-Magdalena Titirici, Antoine Bonfont, Serhiy Cherevko, Ifan E. L. Stephens\* and Frédéric Maillard\*



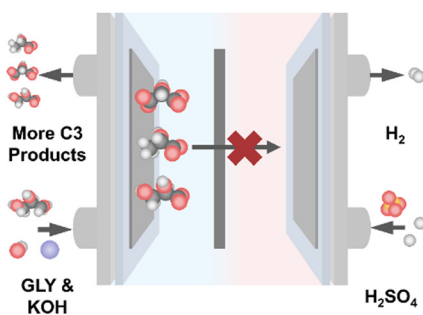
6338



### Enlarging the Stokes shift of CuInS<sub>2</sub> quantum dots using thiol–ene polymers for efficient large-area luminescent solar concentrators

Yufan Wu, Jing Huang,\* Jianyang Zang, Jingjian Zhou, Changhong Cheng, Zhuang Hu, Dan Shan, Wenxing Yang, Ilya Sychugov, Licheng Sun and Bo Xu\*

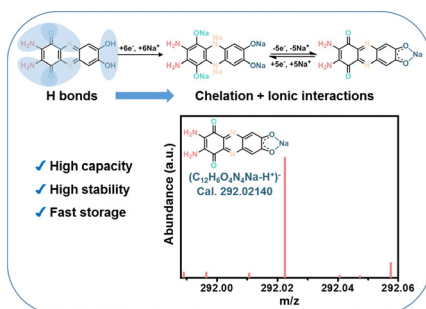
6350



### Suppressing product crossover and C–C bond cleavage in a glycerol membrane electrode assembly reformer

Chencheng Dai, Qian Wu, Tianze Wu, Yuwei Zhang, Libo Sun, Xin Wang, Adrian C. Fisher and Zhichuan J. Xu\*

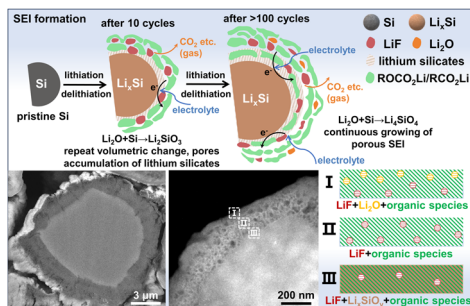
6360



### Plentiful abutting functional groups boosting sodium storage in a small molecule

Chenyang Zhang, Cheng Fu, Haoyu Guo, Yuan Chen, Kun Fan, Zengyu Li, Jincheng Zou, Huichao Dai, Guoqun Zhang, Jing Ma\* and Chengliang Wang\*

6368



### Interfacial degradation of silicon anodes in pouch cells

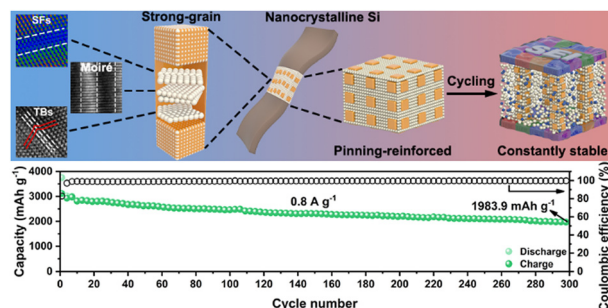
Qiu Fang, Shiwei Xu, Xuechao Sha, Di Liu, Xiao Zhang, Weiping Li, Suting Weng, Xiaoyun Li, Liqian Chen, Hong Li, Bo Wang,\* Zhaoxiang Wang\* and Xuefeng Wang\*



6377

## Stable lithium storage with strong-grain sustained pinning-reinforced nanocrystalline silicon

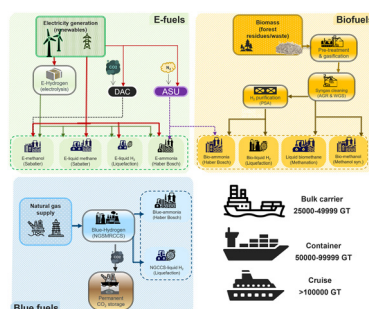
Tingjie Hu, Haochen Zhou, Jingjing Tang, Song Chen, Zhenxiao Li, Xia Yu, Yaguang Zhang, Juan Yang\* and Xiangyang Zhou\*



6393

## Role of biofuels, electro-fuels, and blue fuels for shipping: environmental and economic life cycle considerations

Fayas Malik Kanchiralla,\* Selma Brynolf and Alvar Mjelde



6419

## Correction: Vacancy induced microstrain in high-entropy alloy film for sustainable hydrogen production under universal pH conditions

Yiyuan Yang, Zhe Jia,\* Qianqian Wang, Yujing Liu, Ligang Sun,\* Bo Sun, Juan Kuang, Shoujun Dai, Jianguo He, Sida Liu, Lunbo Duan, Hongjian Tang, Lai-Chang Zhang, Jamie J. Kruzic, Jian Lu and Baolong Shen\*

