

# Journal of Materials Chemistry A

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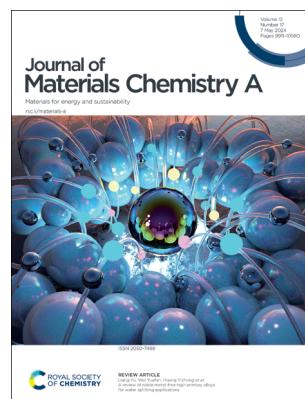
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ISSN 2050-7488 CODEN JMCAET 12(17) 9911–10580 (2024)



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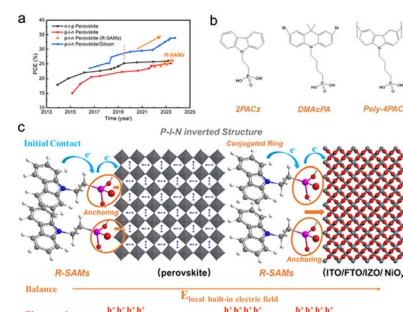
See Liang Yu, Wei Yuefan, Huang Yizhong *et al.*, pp. 9933–9961. Image reproduced by permission of Hamzah Kamaruddin and Huang Yizhong from *J. Mater. Chem. A*, 2024, **12**, 9933.

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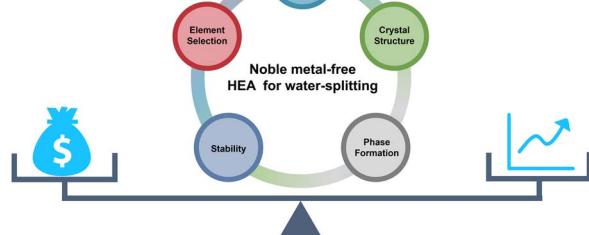


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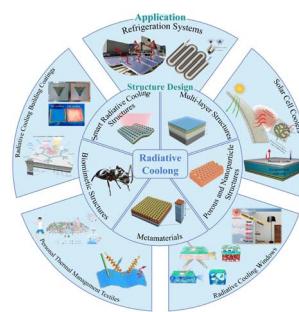


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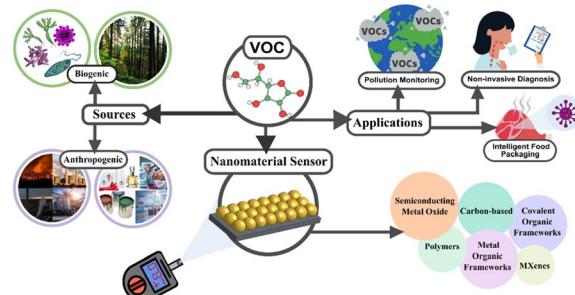
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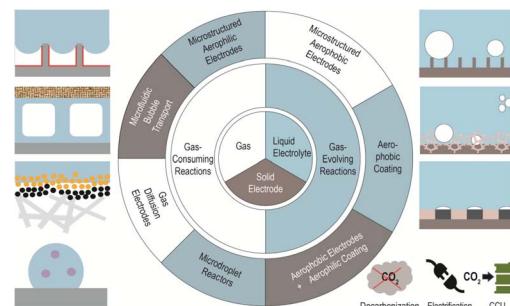
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**Tailoring hydrophilic and hydrophobic microenvironments for gas–liquid–solid triphase electrochemical reactions**

Jungki Ryu\* and Dong Woog Lee\*

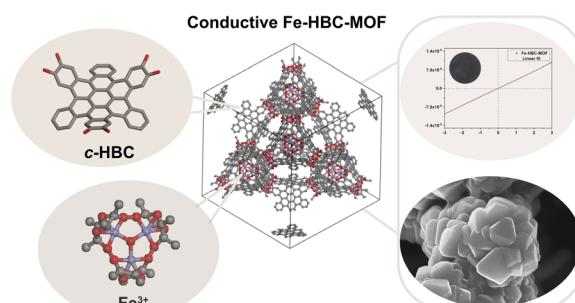


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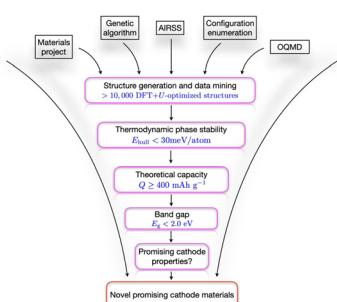
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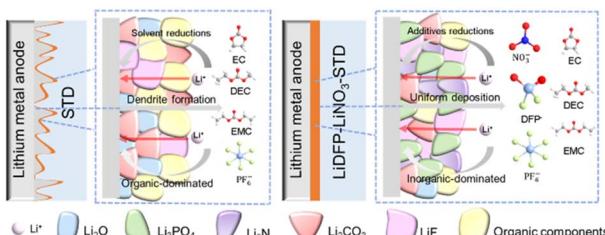
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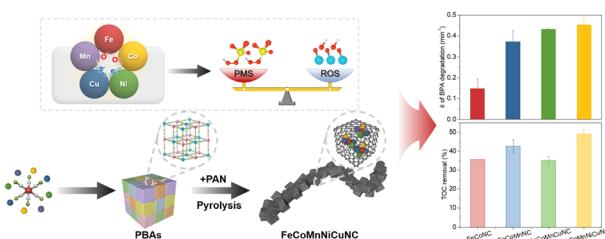
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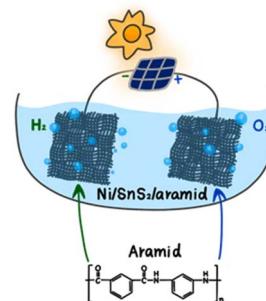


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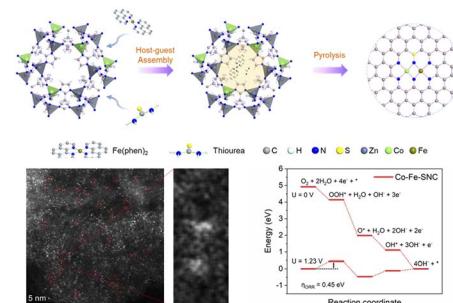
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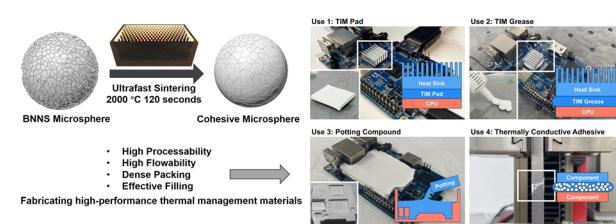
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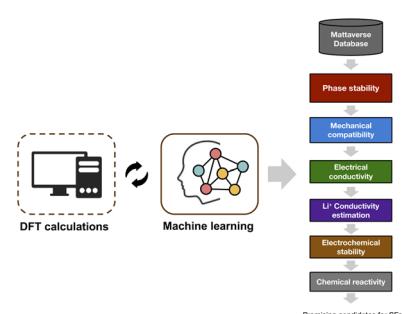
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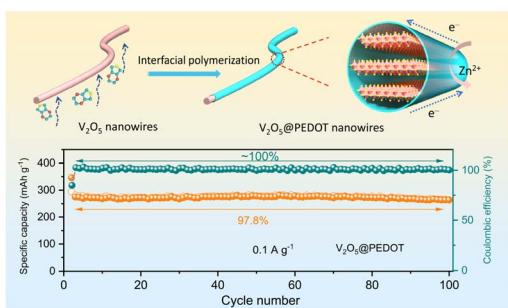
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Xingyu Guo,\* Zhenbin Wang, Ji-Hui Yang and Xin-Gao Gong\*



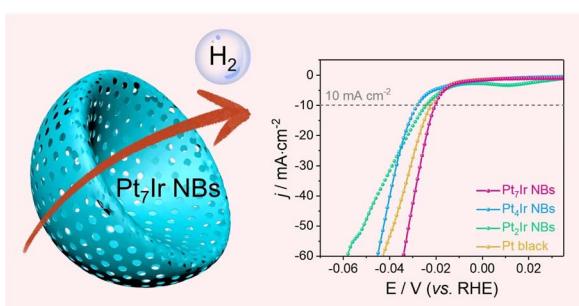
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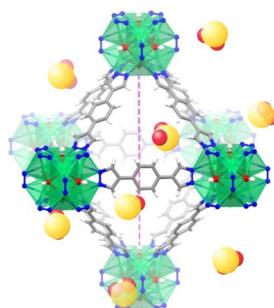
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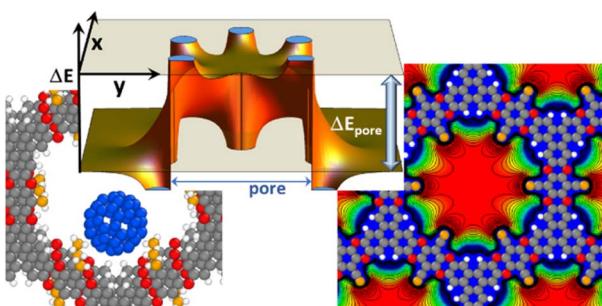
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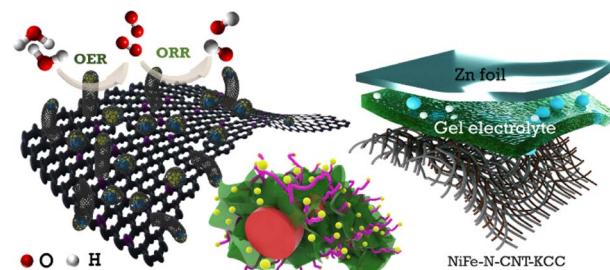


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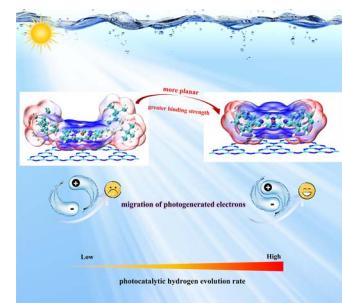
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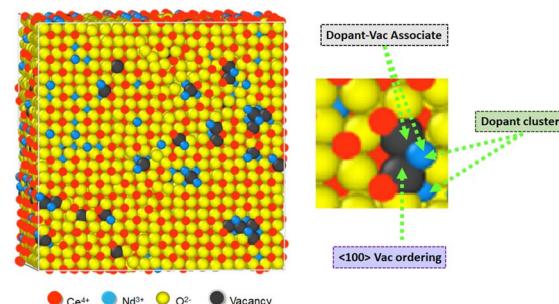
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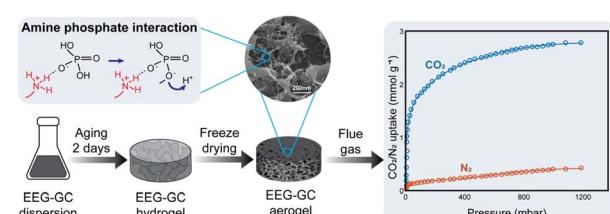
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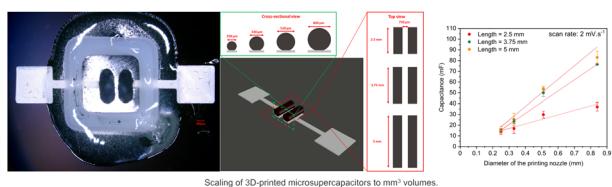
**Sustainable CO<sub>2</sub> adsorbent via amine–phosphate coupling of glycated chitosan and electrochemically exfoliated graphene**

Sucharita Pal, Edward P. L. Roberts, Milana Trifkovic\* and Giovanniantonio Natale\*



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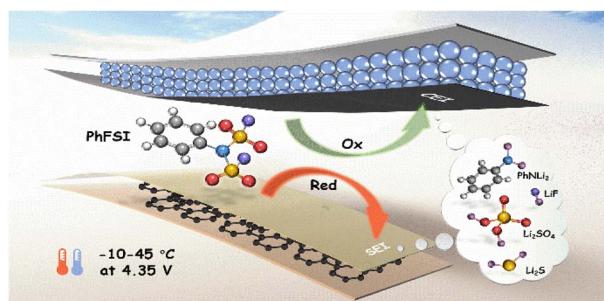
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### Sub-mm<sup>3</sup> dimensional scaling of fully-integrated additively-fabricated microsupercapacitors for embedded energy storage applications

Amin Hodaei and Vivek Subramanian\*

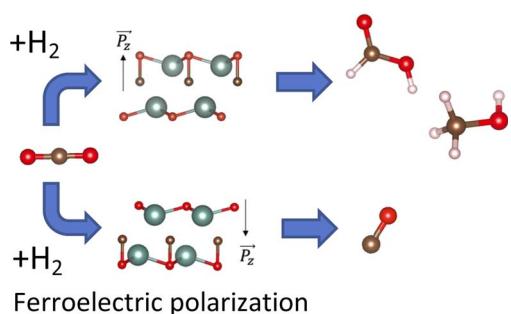
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Guoliang Yang, Zhao Hao Huang, Irfan Majeed, Chaojun Fan, Jiasheng Lu, Kai Wang, Weizhen Fan,\* Jingwei Zhao\* and Zhuo Zeng\*

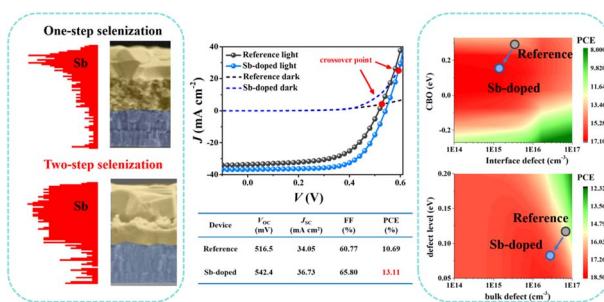
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### *Ab initio* investigation of tunable CO<sub>2</sub> reduction reaction on the two dimensional ferroelectric Y<sub>2</sub>CO<sub>2</sub>

Mo Li and Joshua Young\*

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### Defect-level trap optimization in Cu<sub>2</sub>ZnSn(S,Se)<sub>4</sub> photovoltaic materials via Sb<sup>3+</sup>-doping for over 13% efficiency solar cells

Yingfen Li, Xingye Chen,\* Runxi Wang, Nian Zhou, Fang Huang, Jun Zhao,\* Zhenghua Su, Shuo Chen and Guangxing Liang\*

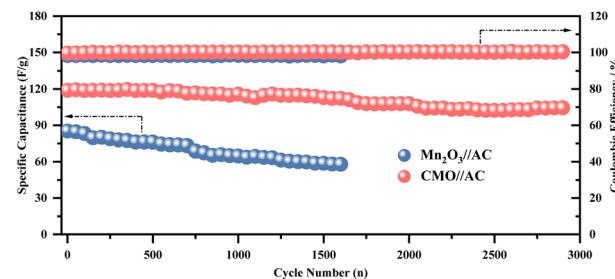


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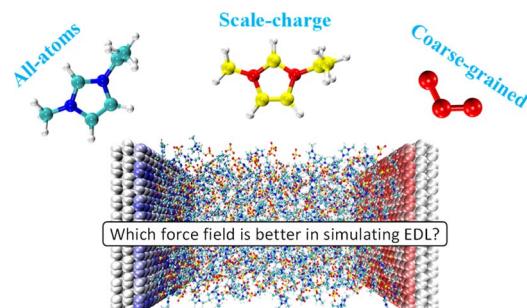
Mudi Li, Yaxi Ding, Siwen Zhang,\* Minghui Liu, Ying Sun, Yusheng Zhang, Bosi Yin\* and Tianyi Ma\*



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**Accurately simulating electrical double layers structure and formation using all-atom scaled-charge force fields**

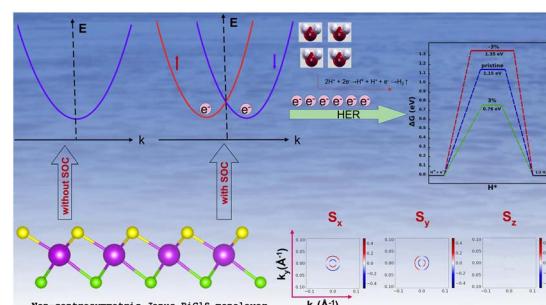
Haoyu He, Jianguo Zhou, Lei Yang, Chenglin Liang, Shuaikai Xu, Ming Chen and Tangming Mo\*



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**Establishing the correlation between Rashba spin splitting and HER activity enhancement in Janus structures**

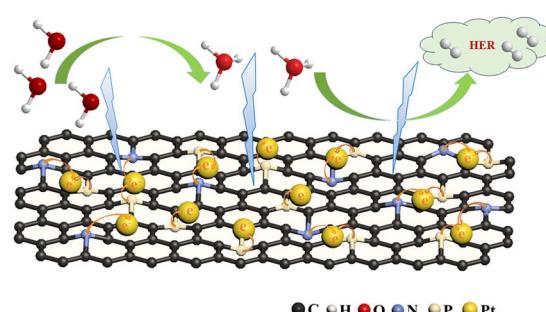
Dhirendra Kumar and Sudip Chakraborty\*



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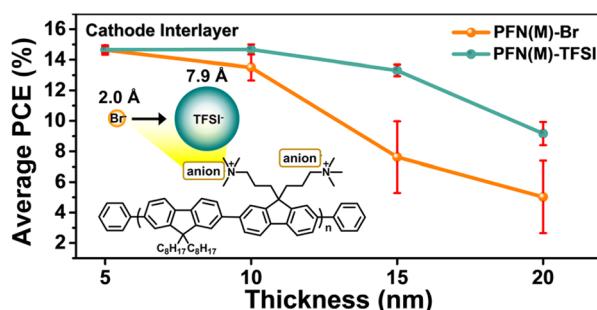
**N, P co-doped graphene-supported monometallic nanoparticles for highly efficient hydrogen evolution by acid electrolysis of water**

Fengshun Wu, Li Zeng, An Pei, Yingliang Feng and Lihua Zhu\*



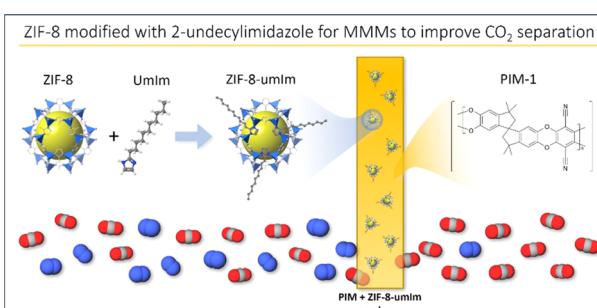
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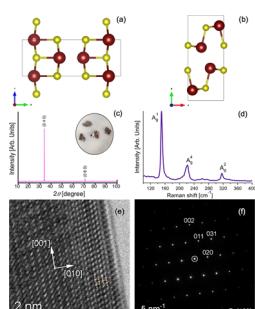
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**ZIF-8 modified with 2-undecylimidazole as filler for mixed matrix membranes for CO2 separation**

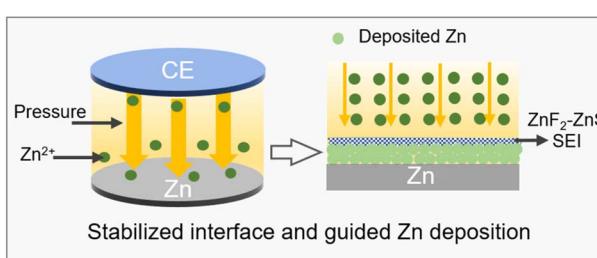
Marta Pérez-Miana, José Miguel Luque-Alled, Mohamed Yahia, Álvaro Mayoral and Joaquín Coronas\*

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**Unlocking superior NO2 sensitivity and selectivity: the role of sulfur abstraction in indium sulfide (InS) nanosheet-based sensors**

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**Guiding uniform Zn electrodeposition through regulating pressure for stable aqueous Zn batteries**

Fenglin Zhang, Ziyang Cai, Runtao Liu, Yang Sun and Huilin Pan\*

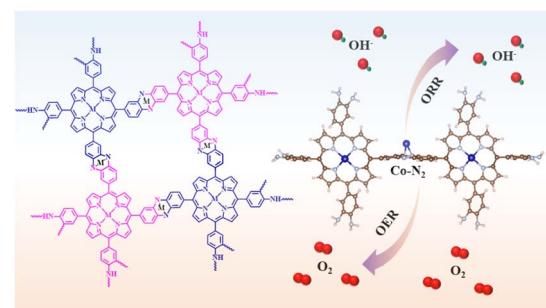


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## Microcosmic modulation of the Co–N bonding structure improves the multi-functional electrocatalytic performance

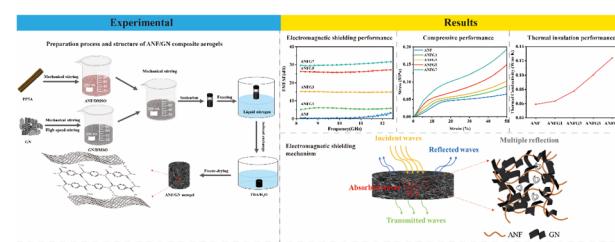
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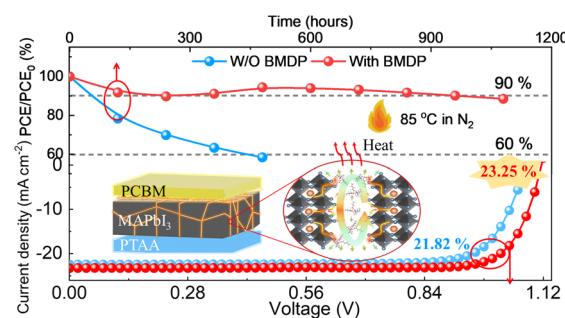
Nian Luo, Yi-yin Zhang, Huan Zhang, Ting-long Liu, Yu Wang, Feng Chen\* and Qiang Fu\*



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## Multi-functional thermal management for efficient and stable inverted perovskite solar cells

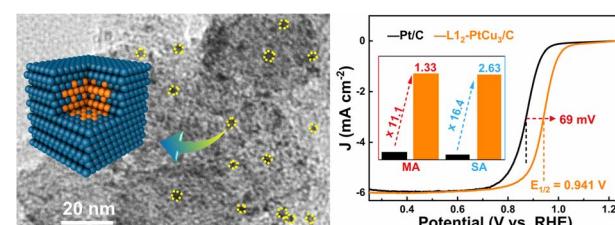
Yongsong Zhang, Zhen He, Jian Xiong,\* Shiping Zhan, Fu Liu, Meng Su, Dongjie Wang, Yu Huang, Qiaogan Liao, Jiangrong Lu, Zheling Zhang, Changlai Yuan, Jiang Wang, Qilin Dai\* and Jian Zhang\*



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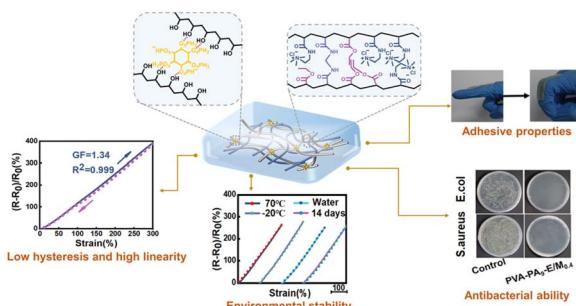
## A sub-4 nm PtCu<sub>3</sub> intermetallic catalyst with an L1<sub>2</sub>-ordered structure toward efficient activity and durability for oxygen reduction

Haibo Jiang, Xiang Xie, Liyuan Bi, Shengwei Yu, Jiaxi Zeng, Lili Zhang, Jianhua Shen\* and Chunzhong Li\*



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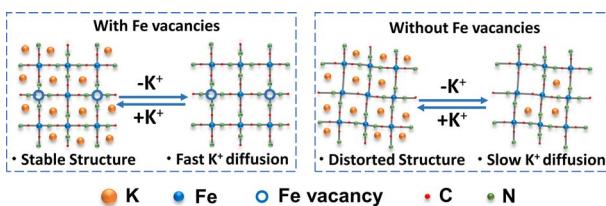
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### Low-hysteresis and highly linear sensors based on environmentally stable, adhesive, and antibacterial hydrogels

Chengmeng Wei, Yao Wang, Yongjie Liang, Jiaming Wu, Feng Li, Qixia Luo, Yewei Lu, Cuiwen Liu, Ru Zhang, Zhenpin Lu, Baiping Xu, Ning Qing\* and Liuyan Tang\*

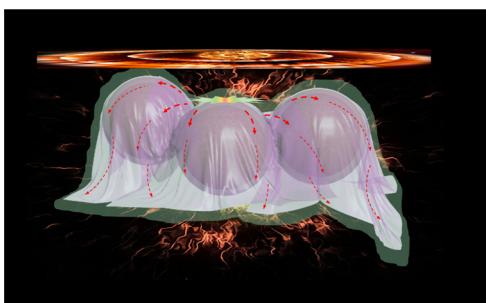
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### Fe<sup>HS</sup> vacancies in a Prussian white cathode leads to enhanced Fe<sup>LS</sup> activity and electrode kinetics for boosted K<sup>+</sup> storage

Shun Zi, Zixing Wang, Jinlong Ke, Ying Mo, Kexuan Wang, Shi Chen, Rui Tang\*, Yanhua Li, Peng Gao\* and Jilei Liu

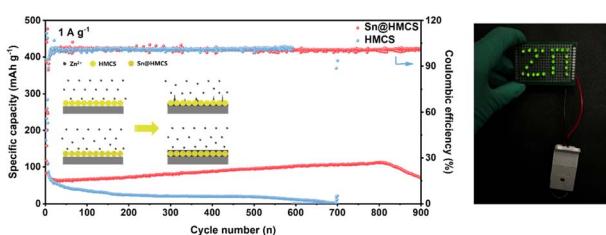
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### Flexible-rigid covalent nano-template of micron porous silicon towards ultra-robust Li-ion batteries

Baoping Liu, HanJiang Li, Wen Luo,\* Xiaofeng Zhang,\* Zhongyun Liu, Pengfei Yin and Rui Zhang\*

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### Controllable synthesis of an atomic Sn-anchoring carbon host for excellent long-cycle-life zinc metal batteries

Lantao Liu, Yiming Li, Hu Zhang, Fang Dong, Shuaize Wang, Ziyu Sun, Gaixia Zhang,\* Xiaohong Chen,\* Sasha Omanovic, Shuhui Sun\* and Huaihe Song\*

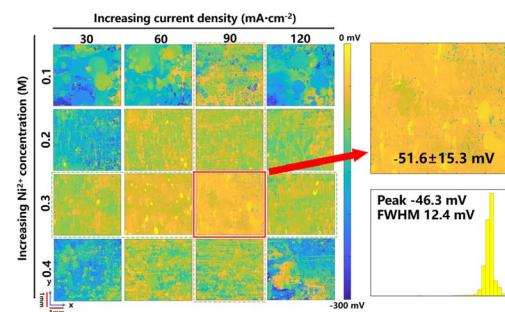


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**Optimization of a NiMo catalytic electrode based on the distribution map of HER onset potential**

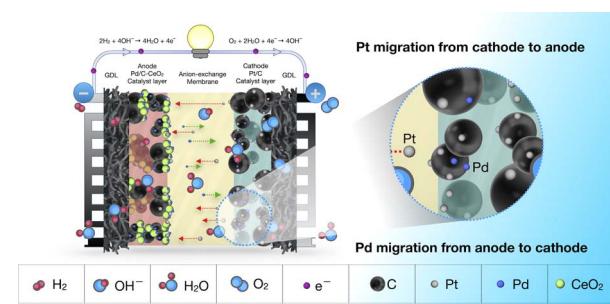
Xuyang Ma, Jiqiang Dong, Fuying Li, Kaijie Ma, Le Liu\* and Jingyu Xi\*



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**Elucidating the degradation mechanisms of Pt-free anode anion-exchange membrane fuel cells after durability testing**

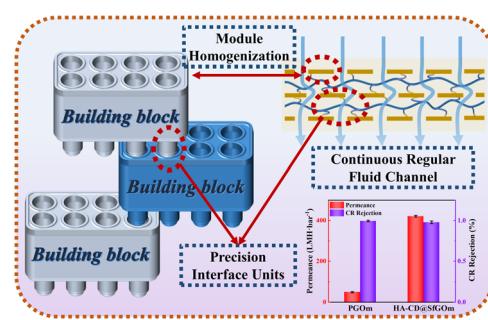
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**LEGO® brick-inspired ultra-stable and rapid transport 2D membrane for fast water purification**

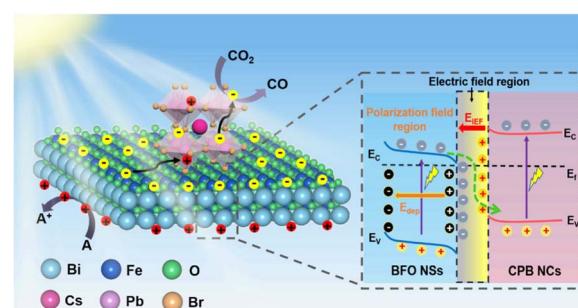
Bo Zhu, Nan Li,\* Changsheng Guo, Pengbi Liu, Tianyu Li, Lijing Wang and Zhiwei Xu\*



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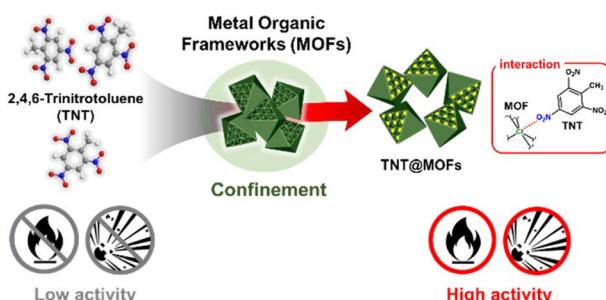
**Enhancing photocatalytic CO<sub>2</sub> reduction via a single-domain ferroelectric Z-scheme heterojunction of BiFeO<sub>3</sub>/CsPbBr<sub>3</sub> inducing dual built-in electric fields**

Danrui Pan, Yi Lu, Ahmed Mahmoud Idris,\* Zhihao Chen, Leyi Xu, Jin Wang, Guocan Jiang, Zhaojiang Chen\* and Zhengquan Li\*



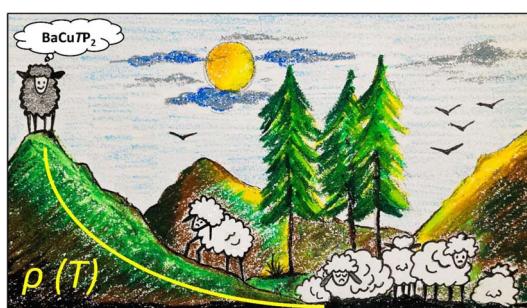
## PAPERS

10472

**Facilitated explosion of nitro compounds confined in metal–organic frameworks**

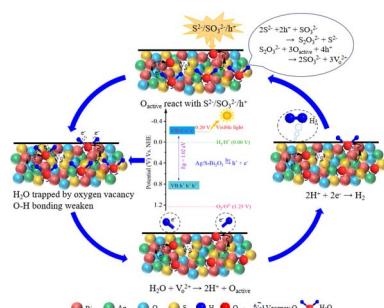
Eun-Young Kim, Mingu Han, Seong Han Kim, Hye Jung Joe, Seok Ki Kim,\* Youn-Sang Bae\* and Su-Young Moon\*

10481

**BaCuTP<sub>2</sub> ( $T = \text{Al, Ga, In}$ ): a semiconducting black sheep in the ThCr<sub>2</sub>Si<sub>2</sub> intermetallic family**

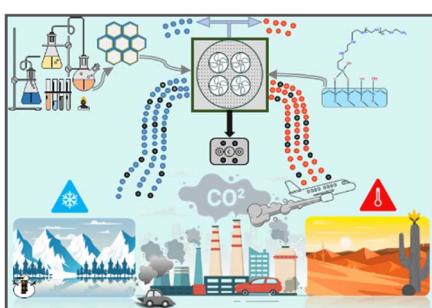
Arka Sarkar, Andrew P. Porter, Gayatri Viswanathan, Philip Yox, Rae Ann Earnest, Jian Wang, Aaron J. Rossini and Kirill Kovnir\*

10494

**Synergistic vacancy defects and bandgap engineering in an Ag/S co-doped Bi<sub>2</sub>O<sub>3</sub>-based sulfur oxide catalyst for efficient hydrogen evolution**

Zhengjie Su, Xinru Wu, Dong-Hau Kuo,\* Baoqian Yang, Binghong Wu, Longyan Chen, Pengkun Zhang, Jinguo Lin,\* Dongfang Lu\* and Xiaoyun Chen\*

10507

**Ambient and sub-ambient temperature direct air CO<sub>2</sub> capture (DAC) by novel supported *in situ* polymerized amines**

Akram A. Al-Absi, Anne M. Benneker and Nader Mahinpey\*

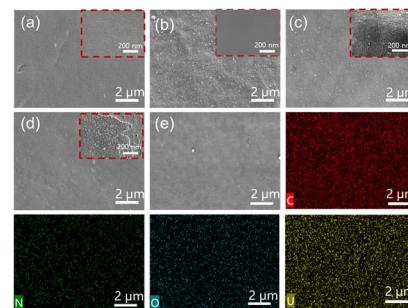


## PAPERS

10528

**Hydrazide and amidoxime dual functional membranes for uranium extraction from seawater**

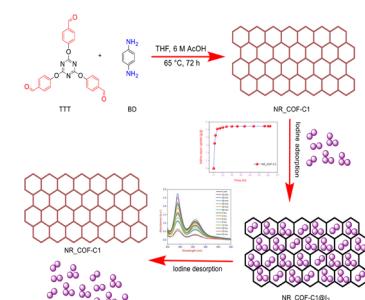
Yunyou Yao, Jian Liao, Xiao Xu, Chen Huang, Mengtao Fu, Kang Chen, Lin Ma, Jiaguang Han, Lu Xu\* and Hongjuan Ma\*



10539

**Facile synthesis of a nitrogen-rich covalent organic framework for the efficient capture of iodine**

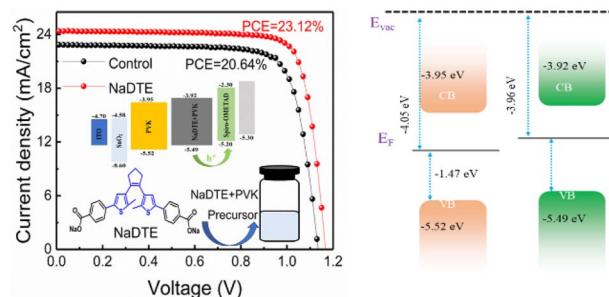
Nowsheenah Farooq, Abu Taha and Athar Adil Hashmi\*



10554

**A simple passivation strategy of Na-dithienylethene for highly efficient and stable perovskite solar cells**

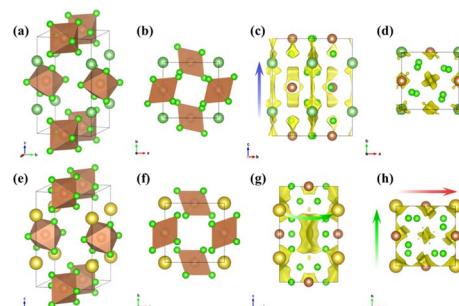
Xianhu Wu, Nian Liu, Guiyuan Wu,\* Guanglei Cui,\* Rumeng Shi, Gaojie Xia, Jieyu Bi, Haidong Huang, Chunyi Zhao, Zewen Zuo and Min Gu



10562

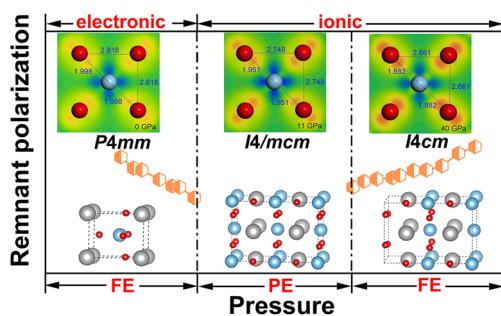
**First-principles study on a new chloride solid lithium-ion conductor material with high ionic conductivity**

Xiao Fu, Yuqi Wang, Jing Xu, Qifan Yang, Huican Mao,\* Ruijuan Xiao\* and Hong Li



## PAPERS

10571

**Pressure-induced electronic to ionic phase transition and recurrence of ferroelectricity in  $\text{PbTiO}_3$** 

Xin Zhang, Caoyuan Mu, Yonghao Han, Xue Liu, Hao Liu, Dawei Jiang, Muyun Han, Jia Wang\* and Lin Zhao\*

