Journal of Materials Chemistry A

Materials for energy and sustainability

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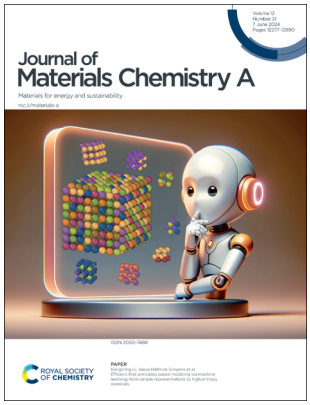
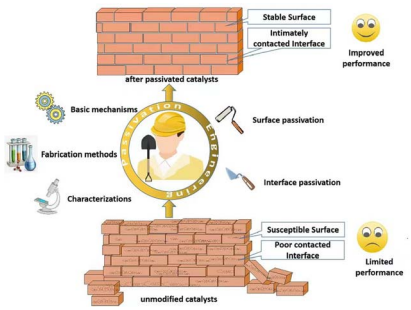
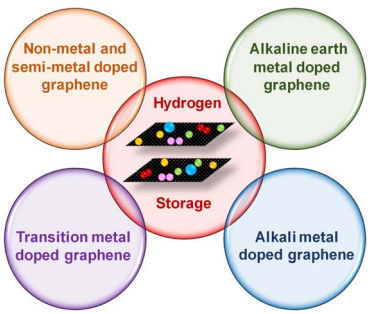


Cover
See Kangming Li, Jason Hattrick-Simpers *et al.*, pp. 12412–12422. Image reproduced by permission of Kangming Li from *J. Mater. Chem. A*, 2024, **12**, 12412.

REVIEWS





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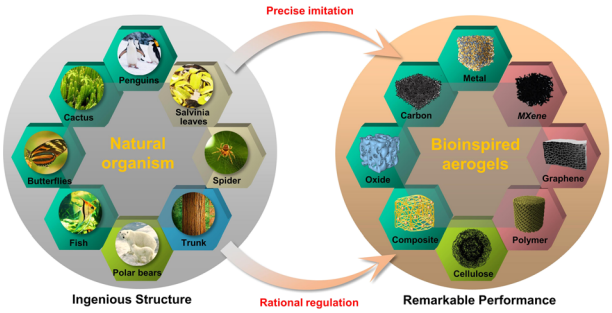

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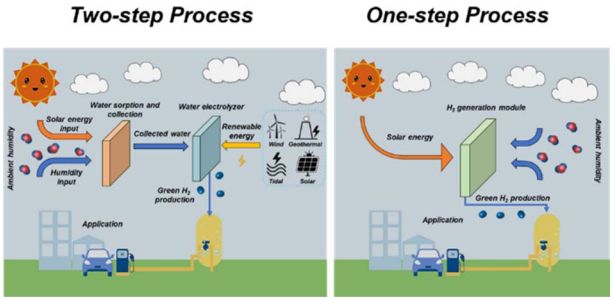

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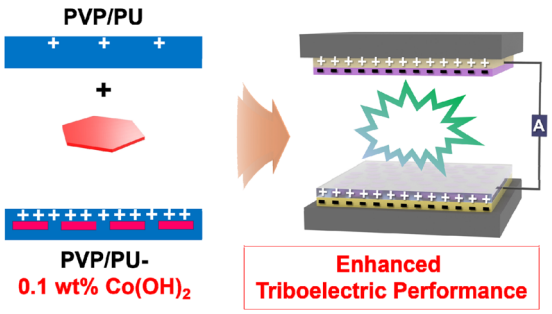

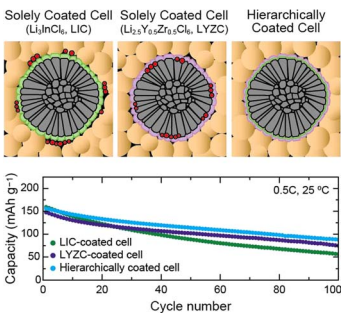

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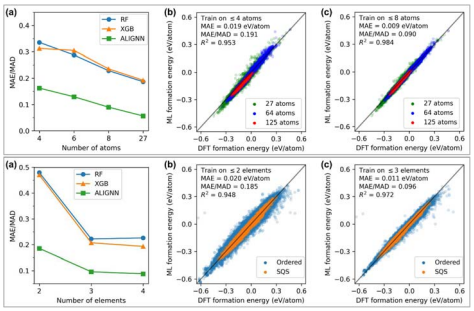
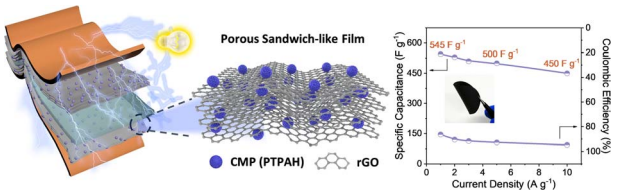


Efficient first principles based modeling *via* machine learning: from simple representations to high entropy materials

Kangming Li,* Kamal Choudhary, Brian DeCost, Michael Greenwood and Jason Hattrick-Simpers*

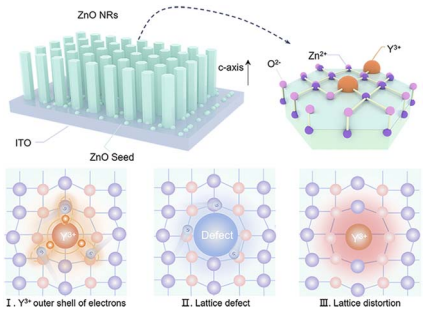
12423



A conjugated microporous polymer–graphene composite porous sandwich-like film for highly efficient flexible supercapacitors

Likuan Teng, Ju Duan, He Liu, Xinzeyu Zhang, Jiaqiang Li, Yitao Li, Jianhao Hong, Wei Lyu* and Yaozu Liao*

12435



Insight into piezoelectricity modulation mechanism of ZnO doped with Y ions

Zihan Wang, Yue Sun, Shenglong Wang, Da Xiong, Guo Tian, Longchao Huang, Boling Lan, Long Jin, Weiqing Yang and Weili Deng*

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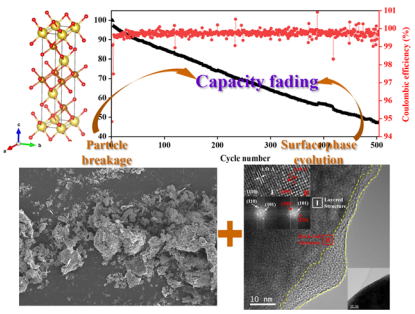

Insights into the capacity fading and failure mechanism of an O3-$NaNi_{1/3}Fe_{1/3}Mn_{1/3}O_2$ layered oxide cathode material for sodium-ion batteries

Xiaohan Zhao, Lijuan Hou, Qi Liu,* Yanshuo Zhao, Daobin Mu, Zhikun Zhao,* Li Li, Renjie Chen and Feng Wu

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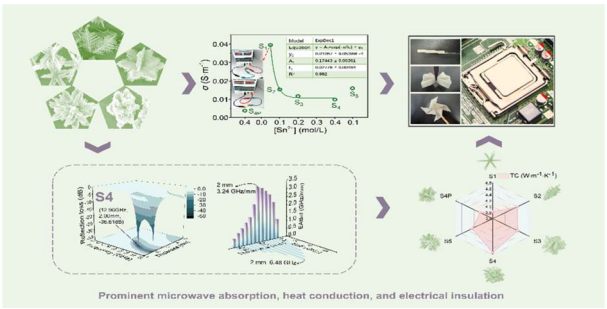
Morphology- and defect-coordinated prominent microwave absorption, thermal exhaustion, and electrical insulation in SnO_2@SnP_2O_7@$Sn_2P_2O_7$ hierarchical architectures

Xinyu Liu, Siyu Xie, Shiyang Cai, Kang Fu, Xiangyang Liu, Lingling Lin, Zhenjie Yu, Guoxiu Tong* and Wenhua Wu



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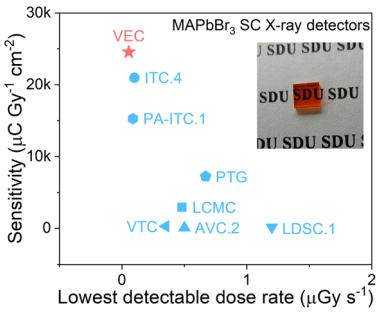
Ultralow detection limit and high sensitivity X-ray detector of high-quality $MAPbBr_3$ perovskite single crystals

Dong Liu, Xue Sun, Li Jiang, Xianyuan Jiang, Hao Chen, Fucai Cui, Guodong Zhang,* Yong Wang, Ying-Bo Lu, Zhongchen Wu,* Zhijun Ning and Xutang Tao



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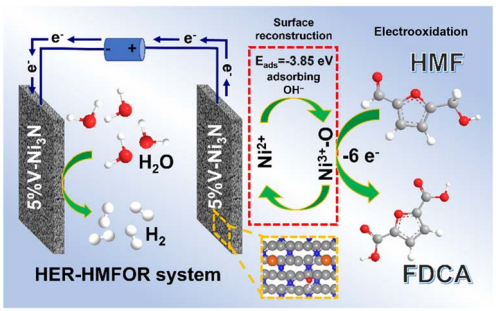
Enhanced surface reconstruction of V-doped Ni_3N driven by strong OH adsorption to boost 5-hydroxymethylfurfural electrooxidation for energy-saving H_2 production

Qi Zhou, Juan Wang, Ga Jin, Huiling Liu* and Cheng Wang



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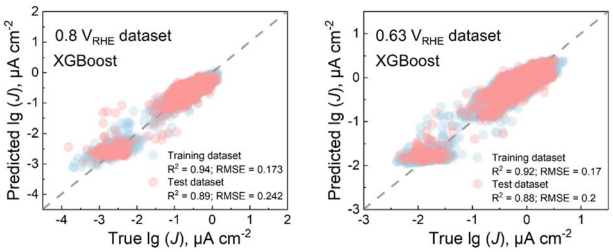
Machine learning enabled exploration of multicomponent metal oxides for catalyzing oxygen reduction in alkaline media

Xue Jia* and Hao Li*



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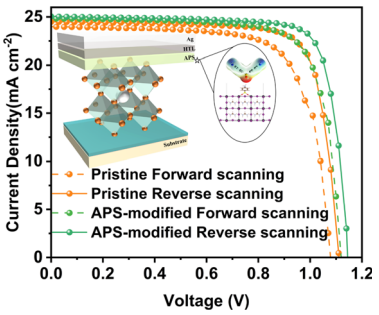

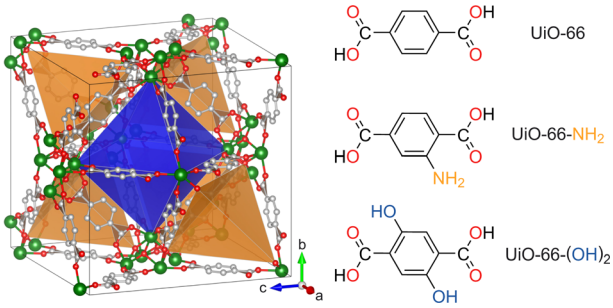

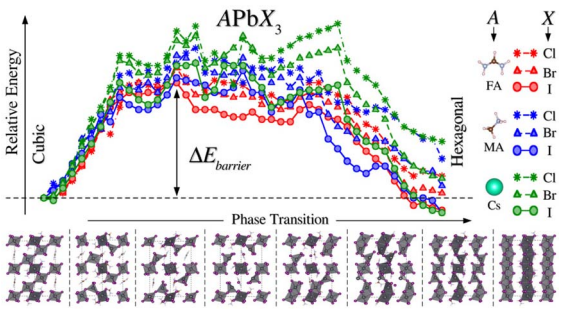

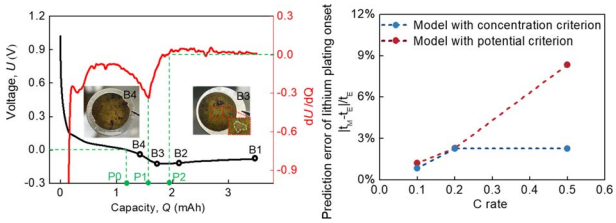

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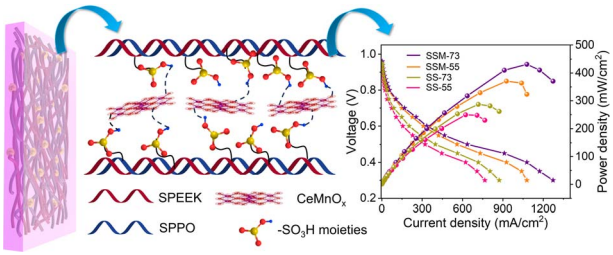
Ce–Mn bimetallic oxide-doped SPEEK/SPPO blend composite membranes to induce high oxidative tolerance and proton conductivity for hydrogen fuel cells

Sk Miraz Hossain, Pratyush Patnaik, Suman Sarkar, Ritika Sharma and Uma Chatterjee*



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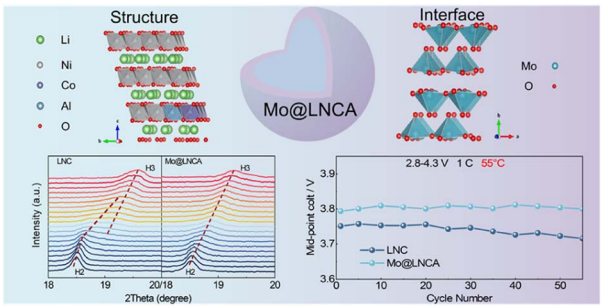
Structure/interface synergy stabilizes high-nickel cathodes for lithium-ion batteries

Guihong Mao, Liming Zeng, Jieyu Yang, Tengyu Yao, Fangming Xiao, Renheng Tang, Xin Shu, Ying Wang* and Laifa Shen*



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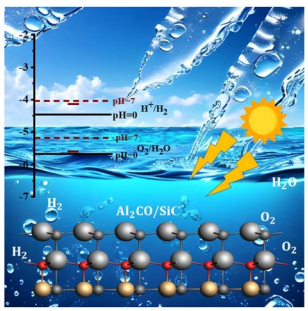
Probing the potential of Al_2CO/SiC heterostructures for visible light-driven photocatalytic water splitting using first-principles strategies

Amina Shehbaz, Abdul Majid,* Hira Batool, Mohammad Alkhedher, Sajjad Haider and Kamran Alam



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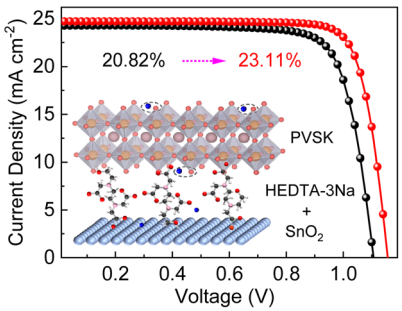
Multifunctional buried interface modification for efficient and stable SnO_2-based perovskite solar cells

Rui Wu, Junhua Meng,* Yiming Shi, Zhengchang Xia, Chunxia Yan, Lisheng Zhang, Wenkang Liu, Jinliang Zhao, Jinxiang Deng and Xingwang Zhang



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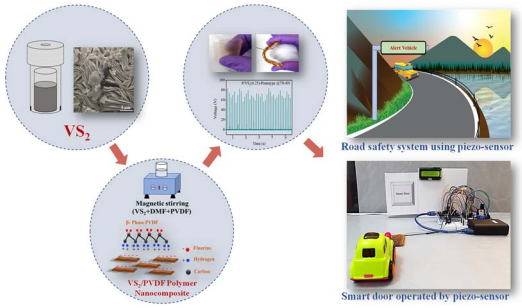

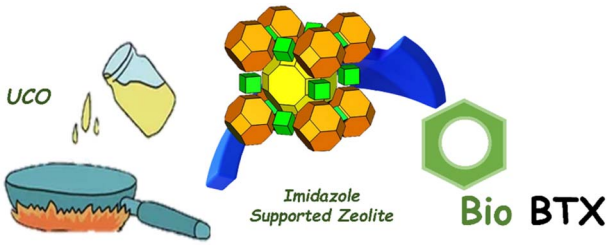

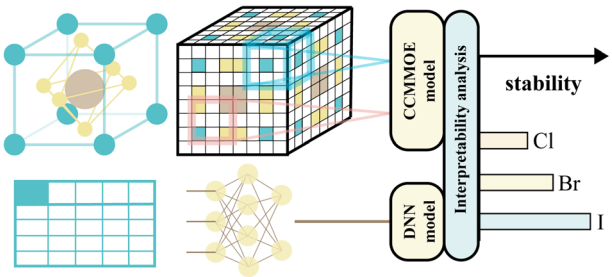

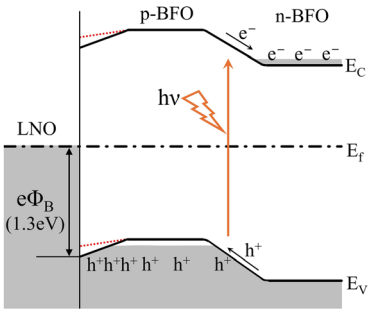

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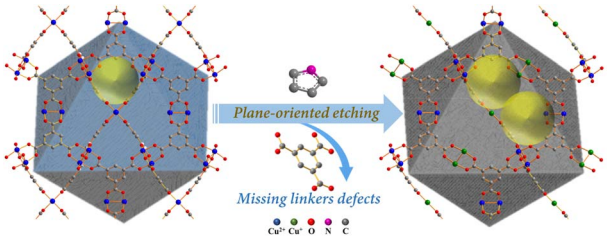

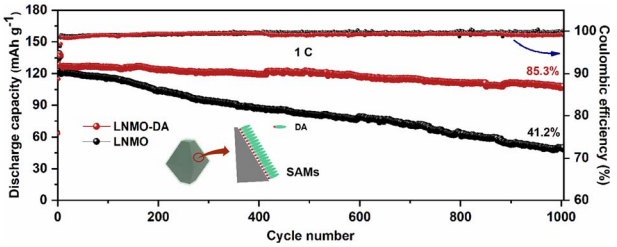

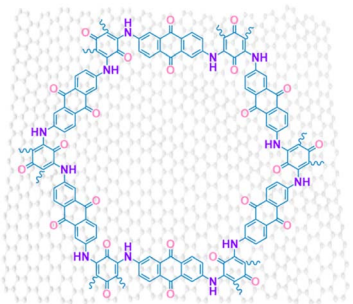

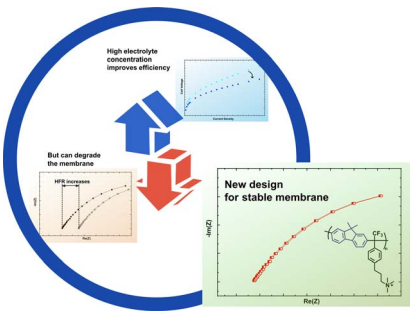

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