Journal of Materials Chemistry A

Materials for energy and sustainability

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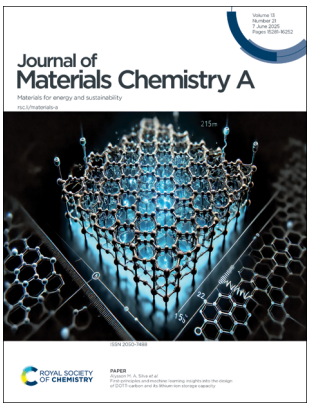

Inside cover
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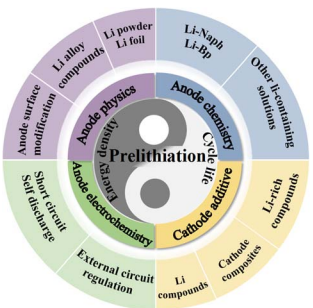
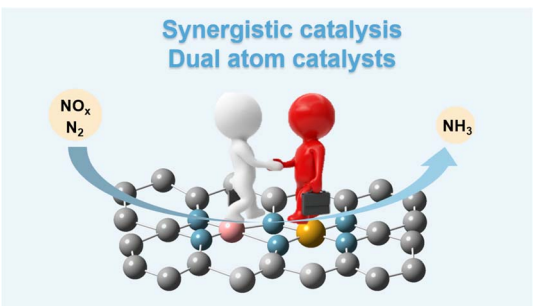
REVIEWS





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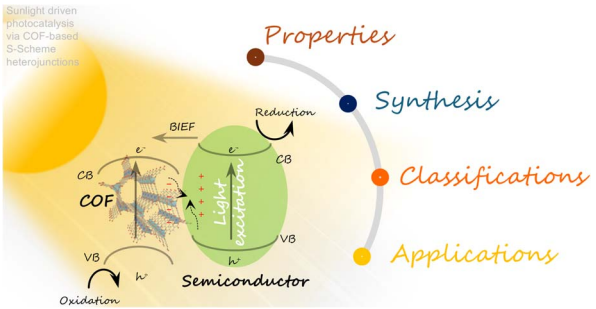
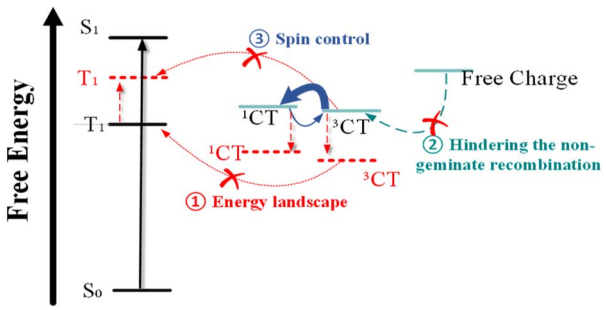


Unlocking sunlight driven photocatalysis: synthesis, diversity, and applications of COF-based S-scheme heterojunctions

Irshad Ahamd,* Zaheer Ud Din Babar, Yifei Zhang,* Ayman Al-Qattan, Samia Ben Ahmed and Gao Li*



Recent progress in minimizing the loss channel *via* triplet excitons in nonfullerene-based organic solar cells

Ruize Zhou, Xiang Gao,* Hui Chen, Jianhong Gao and Zhitian Liu*

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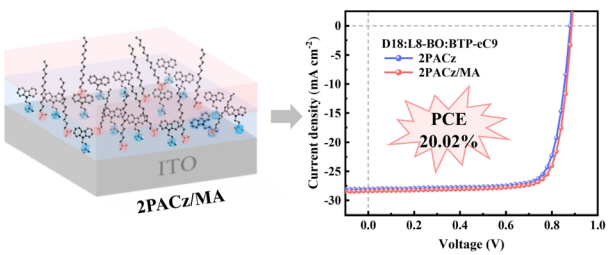
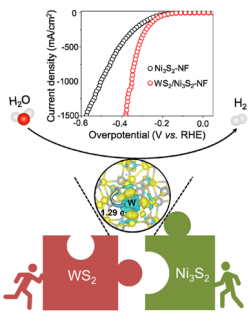


A multifunctional strategy to improve the efficiency and stability of organic solar cells *via* a 2PACz/MA composite hole transport layer

Zixin Huang, Yao Xu, Longfei Liu, Juxuan Xie, Hui Li, Zhiyuan Yang, Kai Zhang* and Fei Huang



An efficient WS_2/Ni_3S_2 monolithic electrode for the hydrogen evolution reaction at industrial current densities

Huifang Wei, Denghui Ma, Guomin Li, Wangwang Zhang, Shiyao Cao* and Jianming Li*

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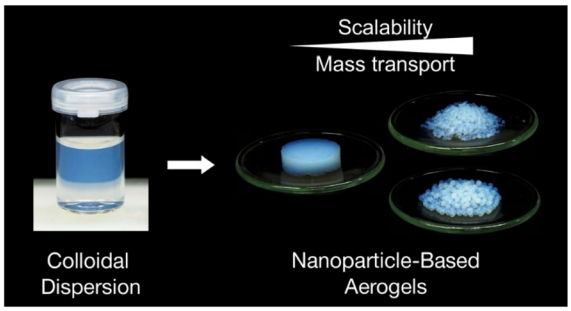

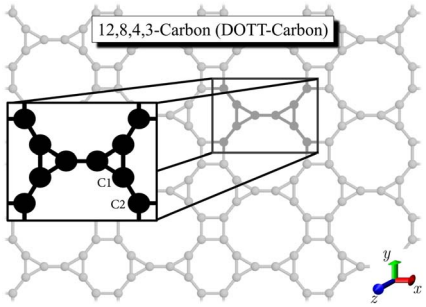

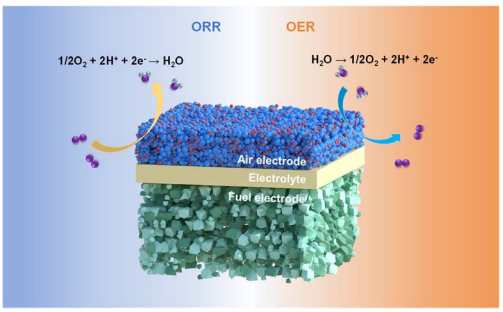

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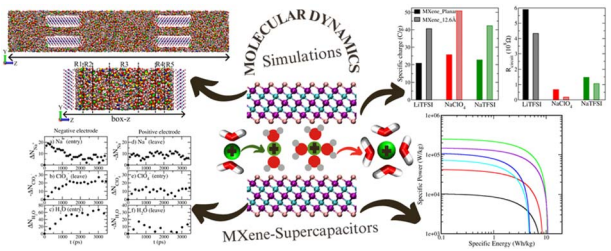

Unveiling the energy storage of supercapacitors containing water-in-salt electrolytes confined in MXenes by molecular dynamics simulations

Isabel Amaral Silva, Abner M. Sampaio, Mathieu Salanne and Leonardo J. A. Siqueira*

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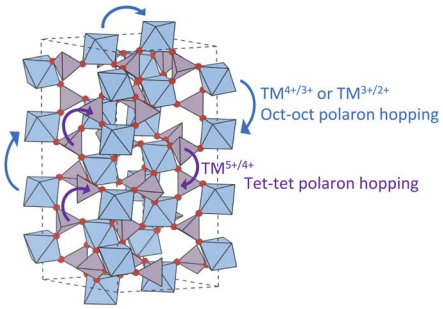
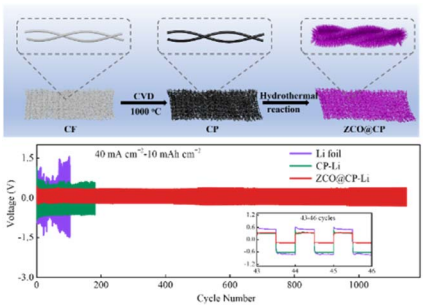


Computational design of polaronic conductive Li-NASICON mixed ionic–electronic conductors

Jiawei Lin, KyuJung Jun* and Gerbrand Ceder*

15673



A lithiophilic bimetallic oxide interlayer enabling high-rate and dendrite-free lithium metal anodes

Tengjun Yang, Wenrui Zheng, Yonghui Xie, Hong Zhang,* Caixia Zhang, Zhong-Zhen Luo, Shuying Cheng and Xinghui Wang*

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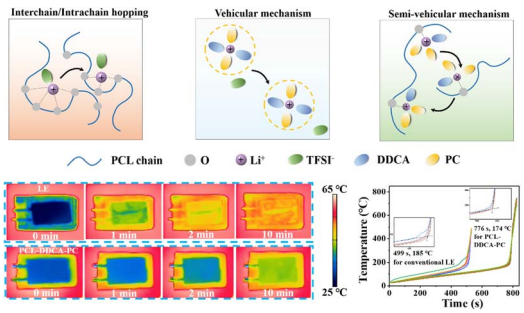

Boosting the lithium transport in phase-change polymer electrolytes towards stable cycling lithium metal batteries with thermal robustness

Yulong He, Zicheng Luo, Hongfei Xu, Zehong Yuan, Songmei Li, Shubin Yang* and Bin Li*

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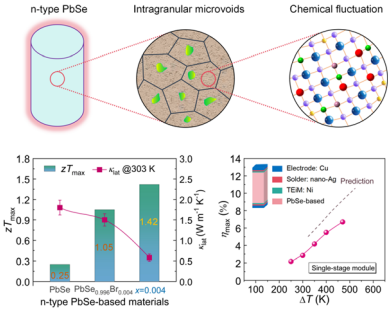
Synergistic engineering of atomic disorder and porous architectures for ultralow lattice thermal conductivity and enhanced thermoelectric performance in n-type high-entropy lead chalcogenides

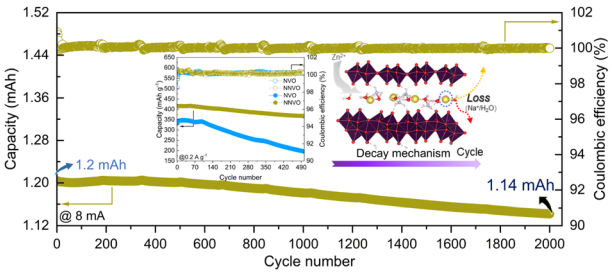
Qian Deng, Xiaobo Tan, Ruiheng Li, Yin Xie, Zhilong Zhao, Jiaxing Luo and Ran Ang*



15702

Hybrid ternary co-intercalation in the interlayer of a vanadium oxide cathode enables high-capacity and stable zinc ion batteries

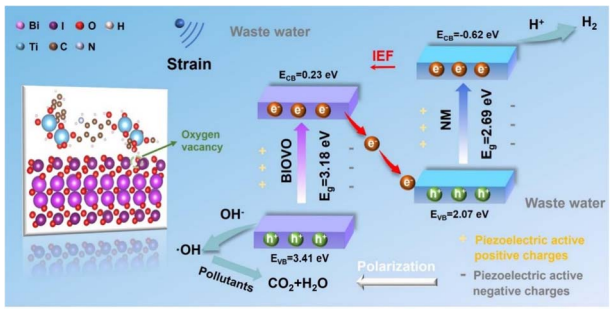
Minggang Zhang,* Heng Wu, Peng Chang and Longkai Pan*



15713

Polarization synergizes defective interface heterojunctions boosting piezocatalytic hydrogen production and simultaneous pollutant degradation

Chaofan Yuan, Na Tian,* Hongwei Huang* and Yihe Zhang*



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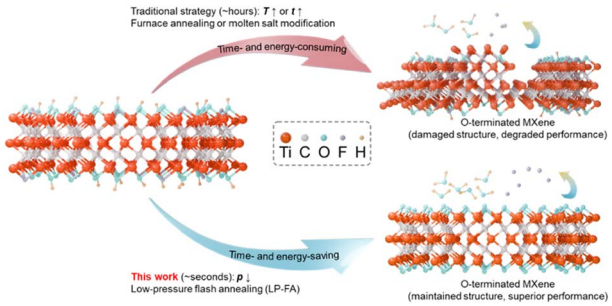
A general method for precise modification of –O termination on MXenes by low-pressure flash annealing

Shi-Hao Yin, Pei-Yu Cao, Tianze Zhang, Su-Fan Hu, Ming-Ze Yang, Hong-Yang Yuan, Xu Xiao,* Li Zhang* and Ye-Chuang Han*



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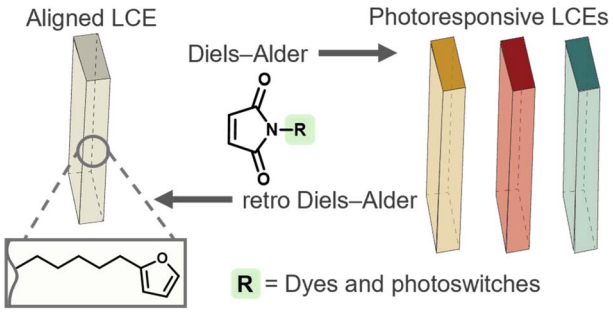

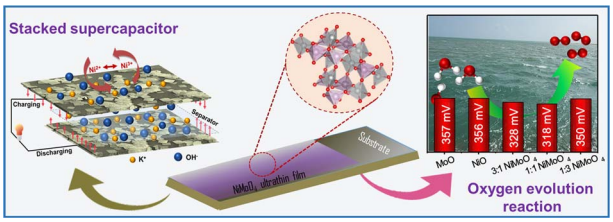

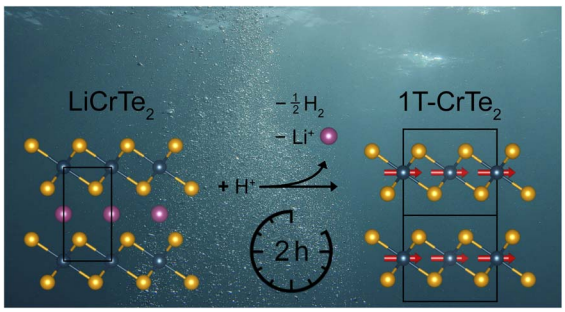

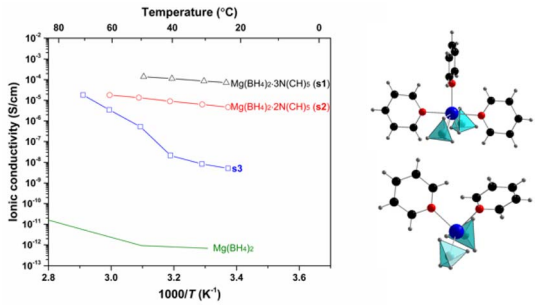

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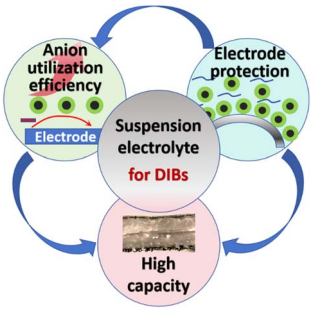

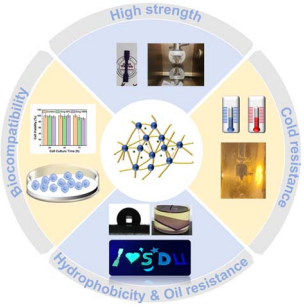

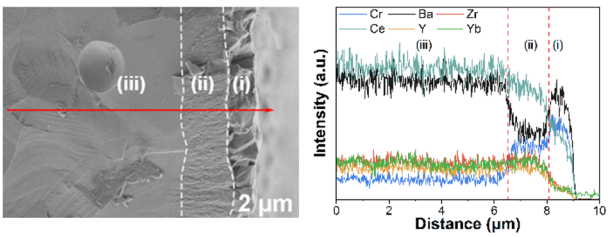

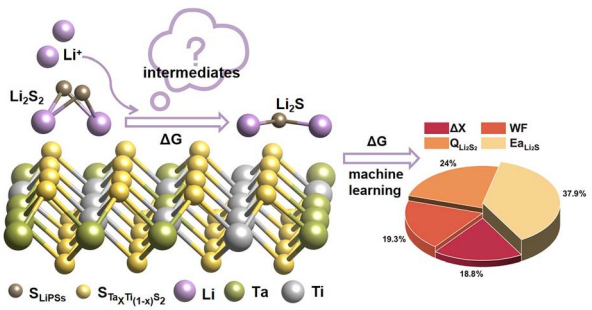

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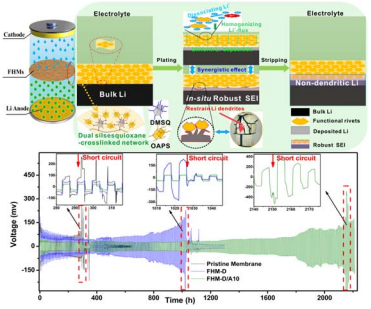
Constructing dual silsesquioxane-crosslinked network channels in hybrid polymer membranes for dendrite-free and durable high-power LMBs

Lingli Liu,* Xuefeng Gui, Dongxia Li, Qiong Lin, Tian Zhang, Longfeng Sun, Zhongxin Wang, Xuan Song, Xiangfeng Sun, Yuxin Xue, Chongxian Luo and Kai Xu*



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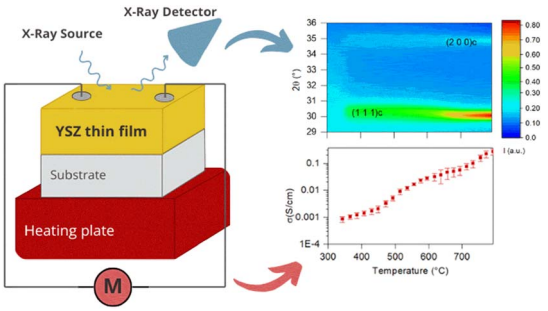
Thermal evolution of sol–gel-synthesized 8YSZ thin films: insights from coupled *in situ* synchrotron diffraction and electrical conductivity measurements

Yanet B. Mansilla,* Catalina E. Jimenéz, Juan F. Basbus, Horacio E. Troiani, Daniel M. Többens, Adriana C. Serquis and Mauricio D. Arce



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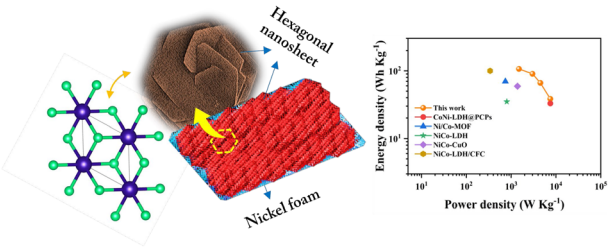
Architecture of imidazolium-based poly(ionic liquid)s–cobalt hexagonal thin nanosheets for high-energy density, using membrane electrolytes

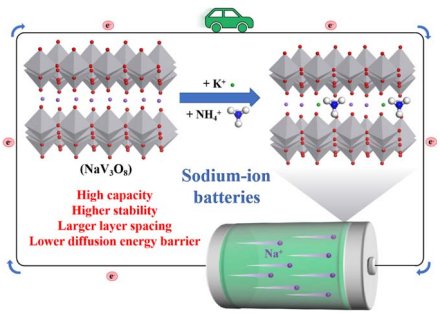
Abhishek Narayanan, Pavan T., Narad Barman, Nagaraj S. Naik, Ranjit Thapa, Chandra Sekhar Rout and Mahesh Padaki*



15999

Boosting stability and rate performance in sodium-ion batteries: first-principles insights into K^+/NH_4^+ doped NaV_3O_8 cathodes

Xingyu Chen, Qiu He,* Yasi Liu, You Hu, Junhua Chen, Dingran Duan, Jing Su, Lele Tong, Chuanfang Zhang and Yan Zhao*



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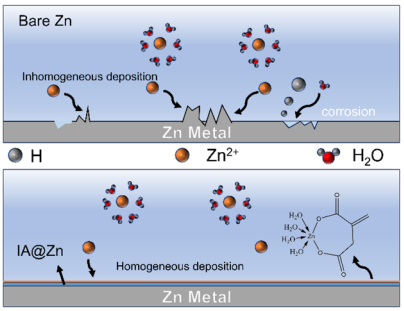
Constructing coordination compound interphases for superior zinc-ion battery performance

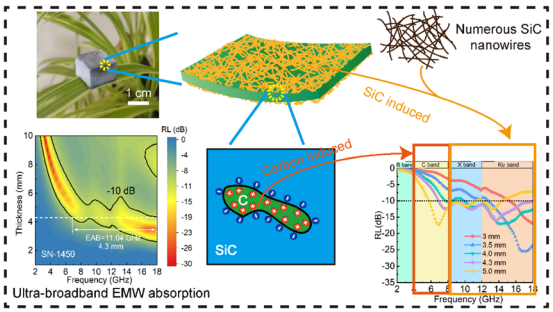
Kaiyuan Zhan, Di Li, Yujuan Pu, Qiwen Zhang, Danmei Yu, Zaifang Yuan, Xiaoyu Luo, Wenjing Yang* and Xueming Li*



16061

Optimizing the electromagnetic wave absorption bandwidth of SiC/C aerogels using continuous multi-band absorption

Jingxiang Liu, Haoquan Hao, Yuheng Zhang, Lishu Wei, Yi Cui, Qinghe Jing, Shouqing Yan, Jie Guo and Zhijiang Wang*



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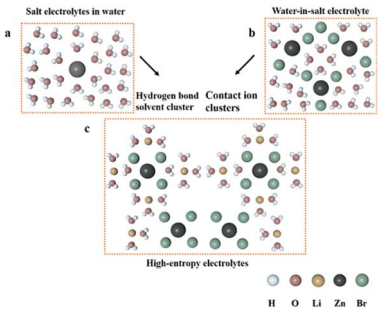
Regulating the solvation structures through a high-entropy strategy for wide-temperature zinc-ion batteries

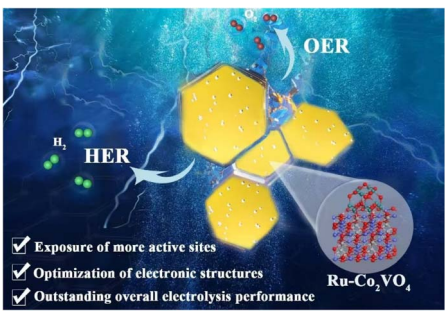
Jiahong Fan, Qian Li, Yu Chen, Jinyao Cui, Dedong Shan, Ximei Lv, Houfu Tu, Yang Zhang, Yuping Wu, Yuhui Chen* and Dengji Xiao*



16081

Cobalt vanadium bimetallic oxide nanoplates modified with RuO_2 for efficient electrocatalytic overall water splitting

Yang Huang, Ying Gu,* Jing Zhang, Bingyang Zhang, Dongxu Wang, Ying Xie, Aiping Wu* and Chungui Tian*



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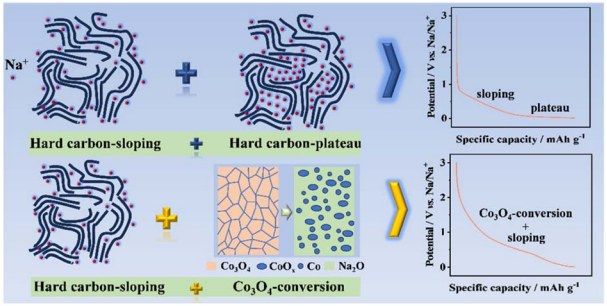

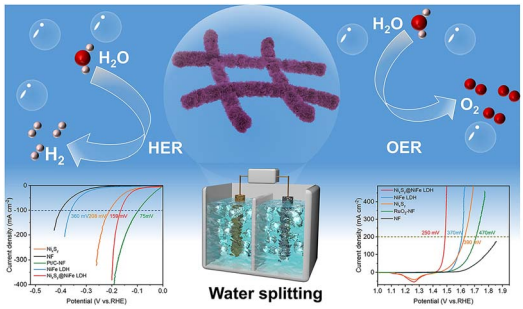

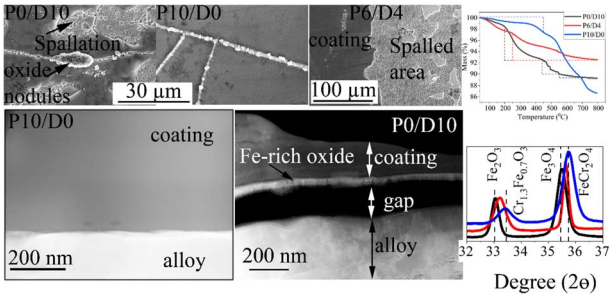

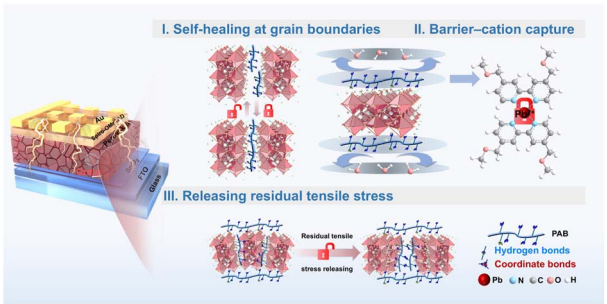

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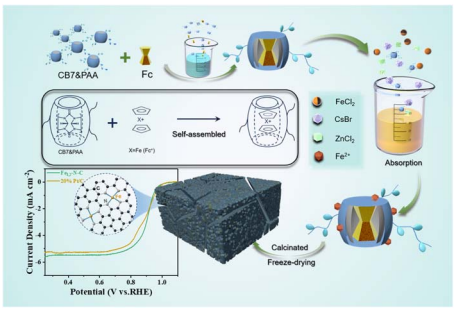

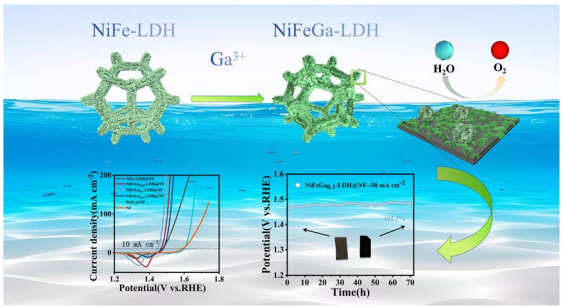

CORRECTION