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**Cover**
See Yanhong Li, Xiangfeng Duan, Ho Seok Park *et al.*, pp. 5387–5398. Image reproduced by permission of Ho Seok Park from *Energy Environ. Sci.*, 2024, **17**, 5387.


**Inside cover**
See Jang Yong Lee *et al.*, pp. 5399–5409. Image reproduced by permission of Jang Yong Lee from *Energy Environ. Sci.*, 2024, **17**, 5399.

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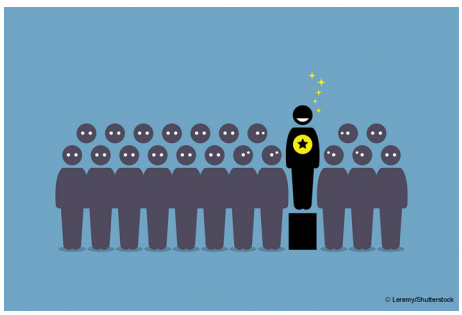


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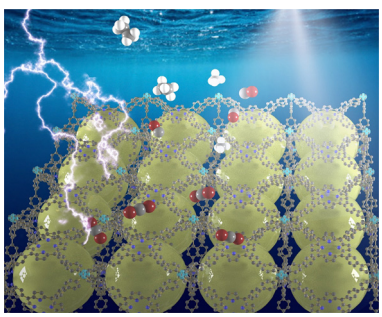

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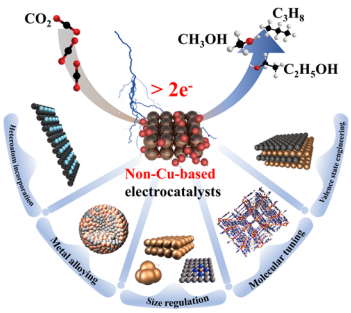


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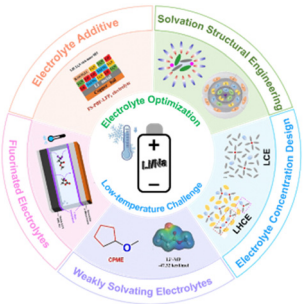


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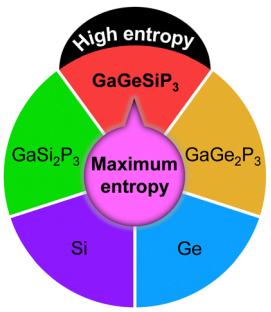


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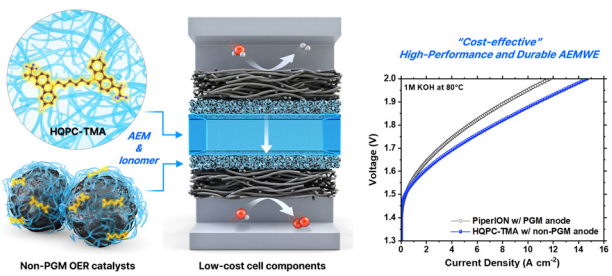

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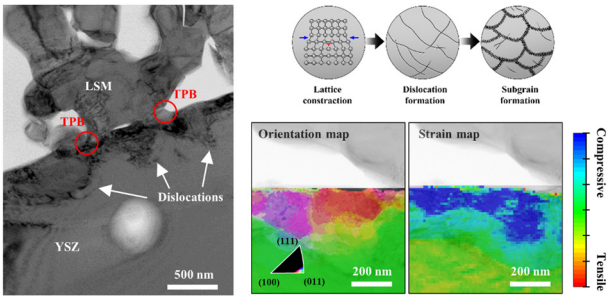


**Unveiling the high-temperature degradation mechanism of solid oxide electrolysis cells through direct imaging of nanoscale interfacial phenomena**

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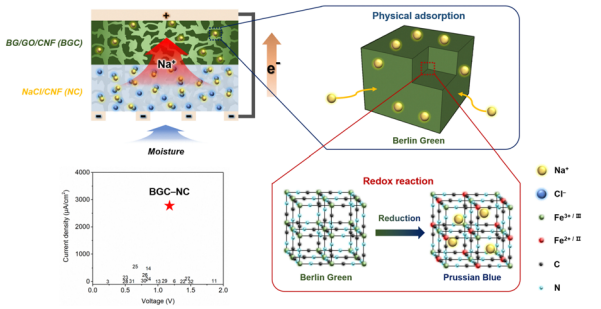


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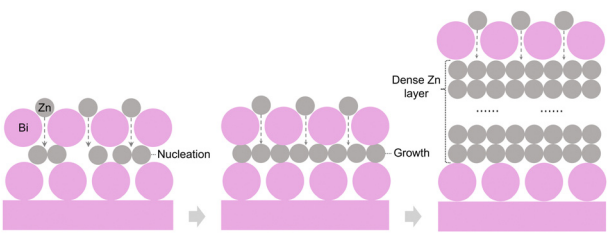


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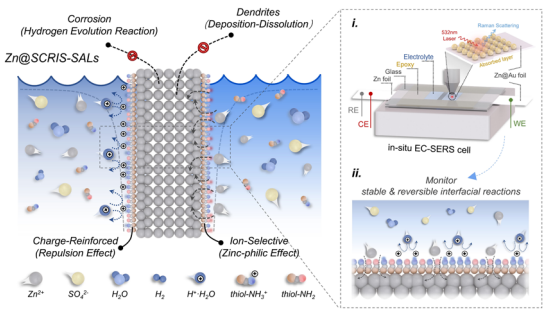


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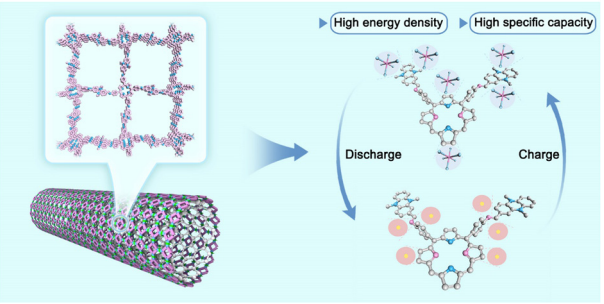


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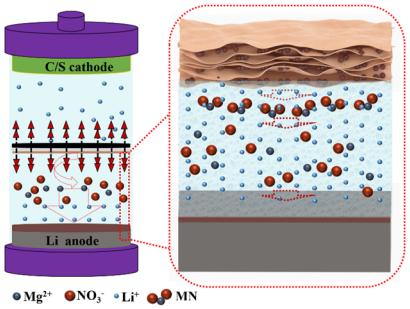


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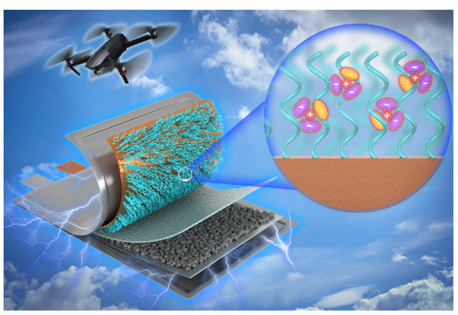

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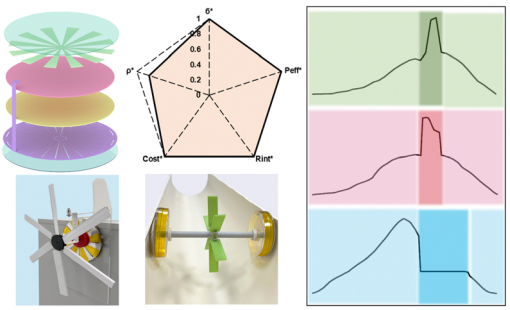

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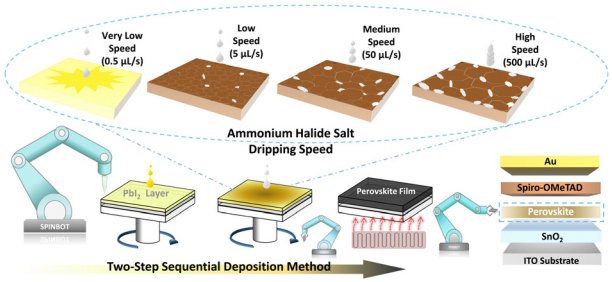


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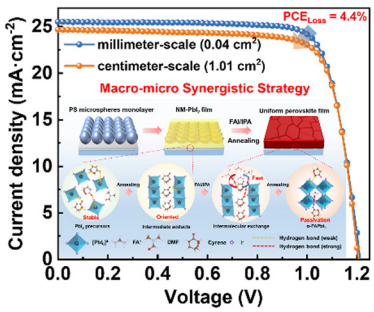


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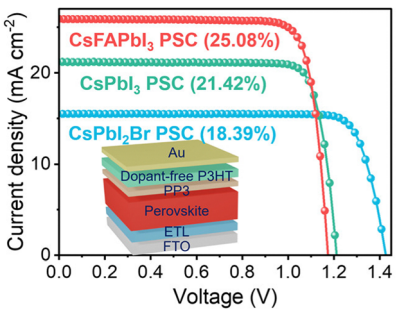


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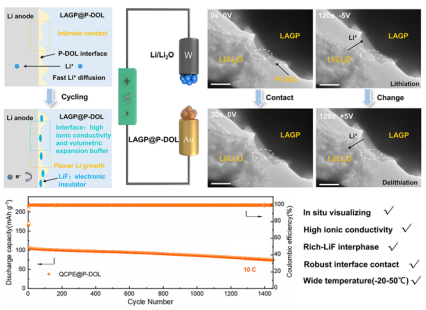


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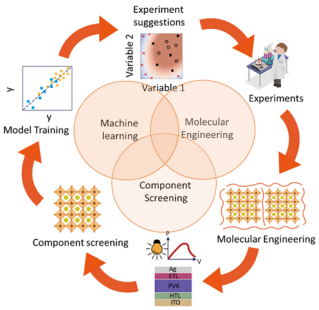


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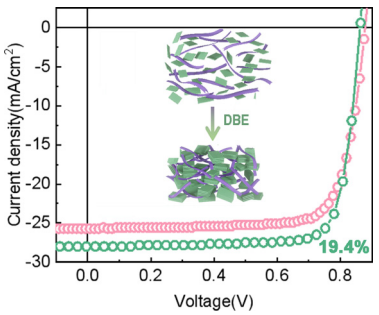


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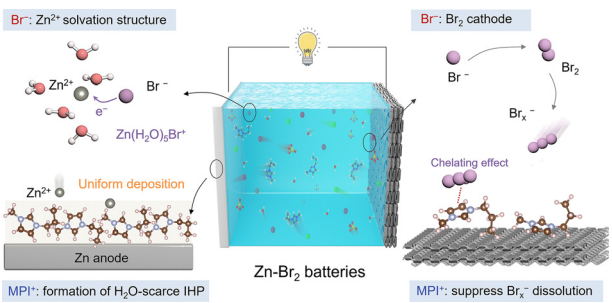


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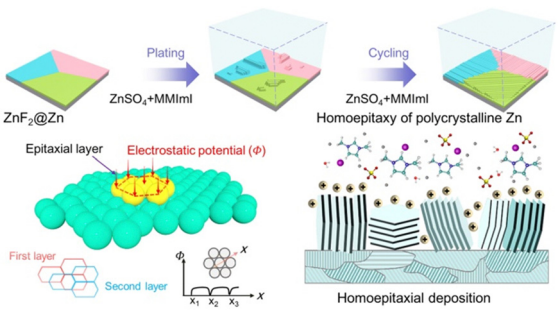

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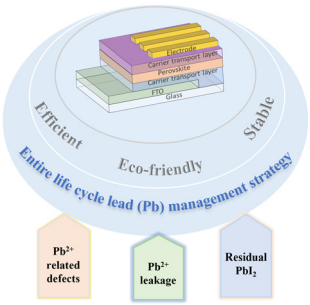


**Lead (Pb) management in the entire life cycle of highly efficient and stable perovskite solar cells**

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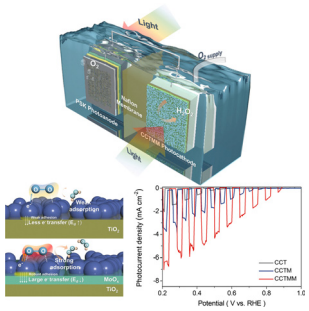


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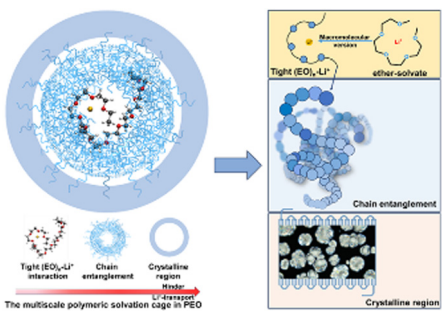


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Ruiyang Li, Haiming Hua, Xueying Yang, Jianling Tian, Qichen Chen, Rongwei Huang, Xue Li, Peng Zhang* and Jinbao Zhao*

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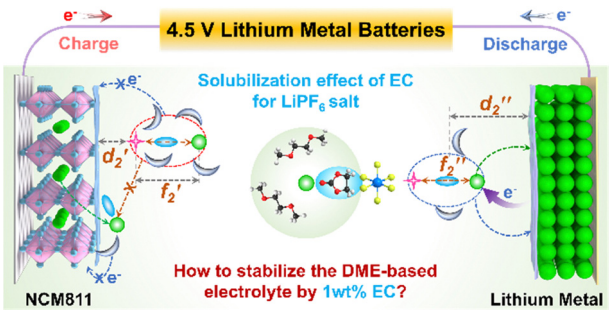


**Trace ethylene carbonate-mediated low-concentration ether-based electrolytes for high-voltage lithium metal batteries**

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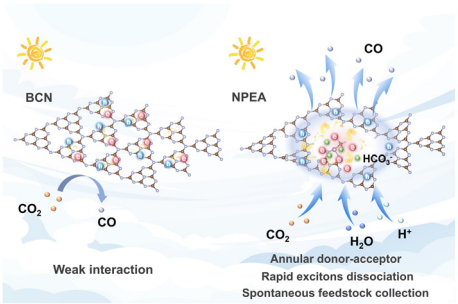
Zhanpeng Zhou, Hao Zeng, Chengyang Feng,* Ling Li, Rongdi Tang, Wenbo Li, Ying Huang* and Yaocheng Deng*

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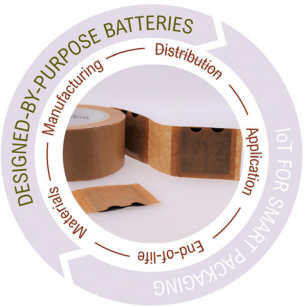
Marina Navarro-Segarra,* Omar A. Ibrahim, Iñigo Martin-Fernandez, Carles Tortosa, Joseba M. Ormaetxea, Manuel Baumann, Marcel Weil and Juan Pablo Esquivel*

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**Nanostructured hybrid catalysts empower the artificial leaf for solar-driven ammonia production from nitrate**

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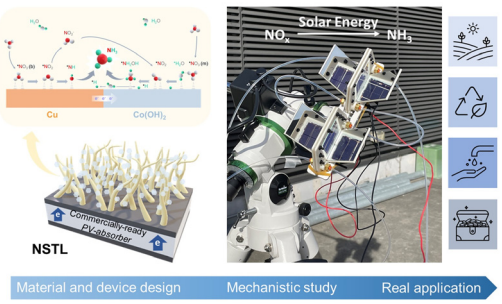


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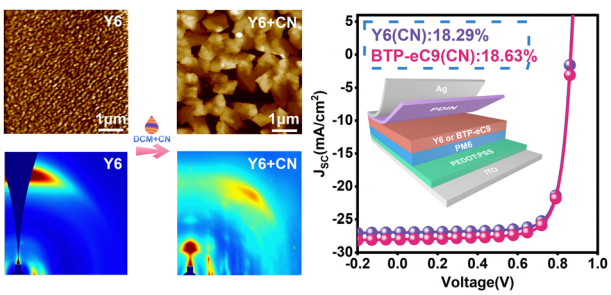

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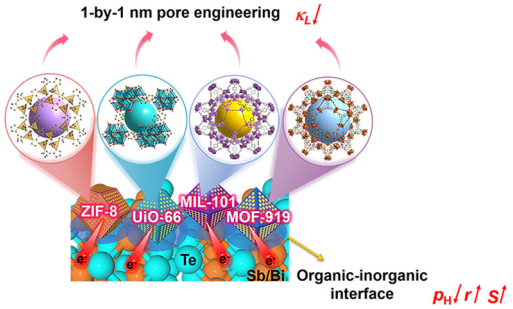


**Thermally stable inorganic $Bi_{0.4}Sb_{1.6}Te_3$/metal–organic framework (MOF) composites with 1-by-1 nm pore engineering towards mid-temperature thermoelectrics**

Wanjia Zhang, Bassem A. Al-Maythalony, Fengxian Gao, Fanshi Wu, Wei Zhao, Pengfei Xu, Wenhua Zhang, Cailing Chen, Zhan Shi, Xiyang Wang,* Yue Lou* and Biao Xu*

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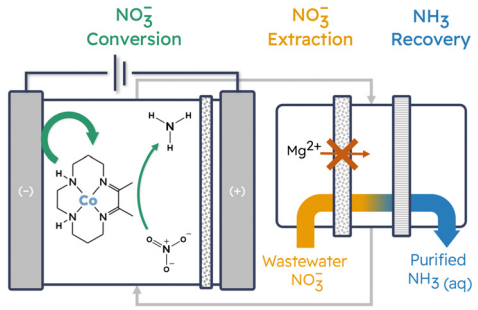


**Engineering a molecular electrocatalytic system for energy-efficient ammonia production from wastewater nitrate**

Dean M. Miller, Matthew J. Liu, Kristen Abels, Anna Kogler, Kindle S. Williams and William A. Tarpeh*

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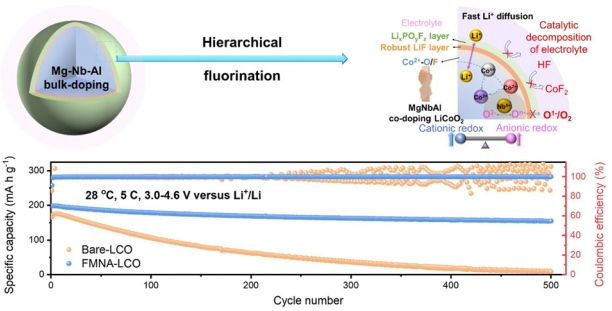


**A surface-to-bulk tuning deep delithiation strategy for 5C fast-charging 4.6 V $LiCoO_2$**

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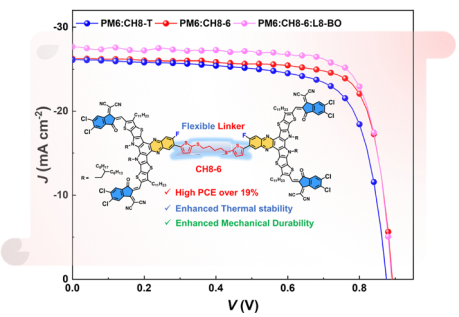


**Rational design of flexible-linked 3D dimeric acceptors for stable organic solar cells demonstrating 19.2% efficiency**

Zhe Zhang, Shaohui Yuan, Tianqi Chen, Jia Wang, Yuan-Qiu-Qiang Yi, Bin Zhao, Miaomiao Li, Zhaoyang Yao, Chenxi Li, Xiangjian Wan, Guankui Long, Bin Kan* and Yongsheng Chen*

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## Uncovering fast solid-acid proton conductors based on dynamics of polyanion groups and proton bonding strength

Pjotrs Žguns, Konstantin Klyukin, Louis S. Wang, Grace Xiong, Ju Li, Sossina M. Haile and Bilge Yildiz*