

# Environmental Science: Atmospheres

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Elemental answers





Showcasing research from Prof. Mingxian Liu's laboratory,  
School of Chemical Science and Engineering, Tongji  
University, Shanghai, China.

*In situ* Nafion-nanofilm oriented (002) Zn electrodeposition  
for long-term zinc-ion batteries

Our study introduces perfluoropolymer (Nafion) into aqueous electrolyte to activate a thermodynamically ultrastable Zn/electrolyte interface. This ultrathin artificial solid electrolyte interface with zincophilic  $-\text{SO}_3^-$  groups guides the directional  $\text{Zn}^{2+}$  electrodeposition along the (002) crystal surface even at high current density, yielding a dendrite-free Zn anode for propelling high-performance zinc-ion batteries.

As featured in:



See Mingxian Liu *et al.*,  
*Chem. Sci.*, 2024, **15**, 4322.