

# Environmental Science: Atmospheres

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Fundamental questions  
Elemental answers





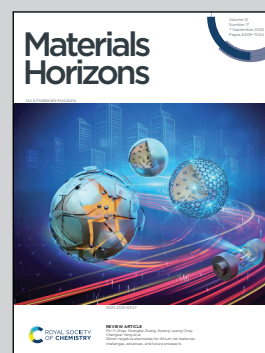
**Showcasing research from Mingxian Liu's team  
at Tongji University, Shanghai, China**

Conjugated nanofibrous organic cathodes with high-density carbonyl/imine redox sites for superior  $\text{NH}_4^+/\text{H}^+$  co-storage

Conjugated nanofibrous organic cathodes are designed through  $\pi$ - $\pi$  stacking interactions between benzene-1,3,5-tricarbaldehyde and 2,6-diaminoanthraquinone nanofibrous polymer molecular chains. The planar nanofibrous skeletons deliver consecutive electron delocalization pathways and ultralow reaction energy barriers that selectively couple with  $\text{NH}_4^+/\text{H}^+$  ions. Consequently, the high-density carbonyl/imine redox sites coupled with high-kinetics  $\text{NH}_4^+/\text{H}^+$  ions achieve high capacity and high rate, while the robust conjugated network structures effectively suppress the dissolution issue to achieve a durable lifespan.

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**As featured in:**



See Yehui Zhang, Lihua Gan,  
Mingxian Liu *et al.*,  
*Mater. Horiz.*, 2025, **12**, 6733.