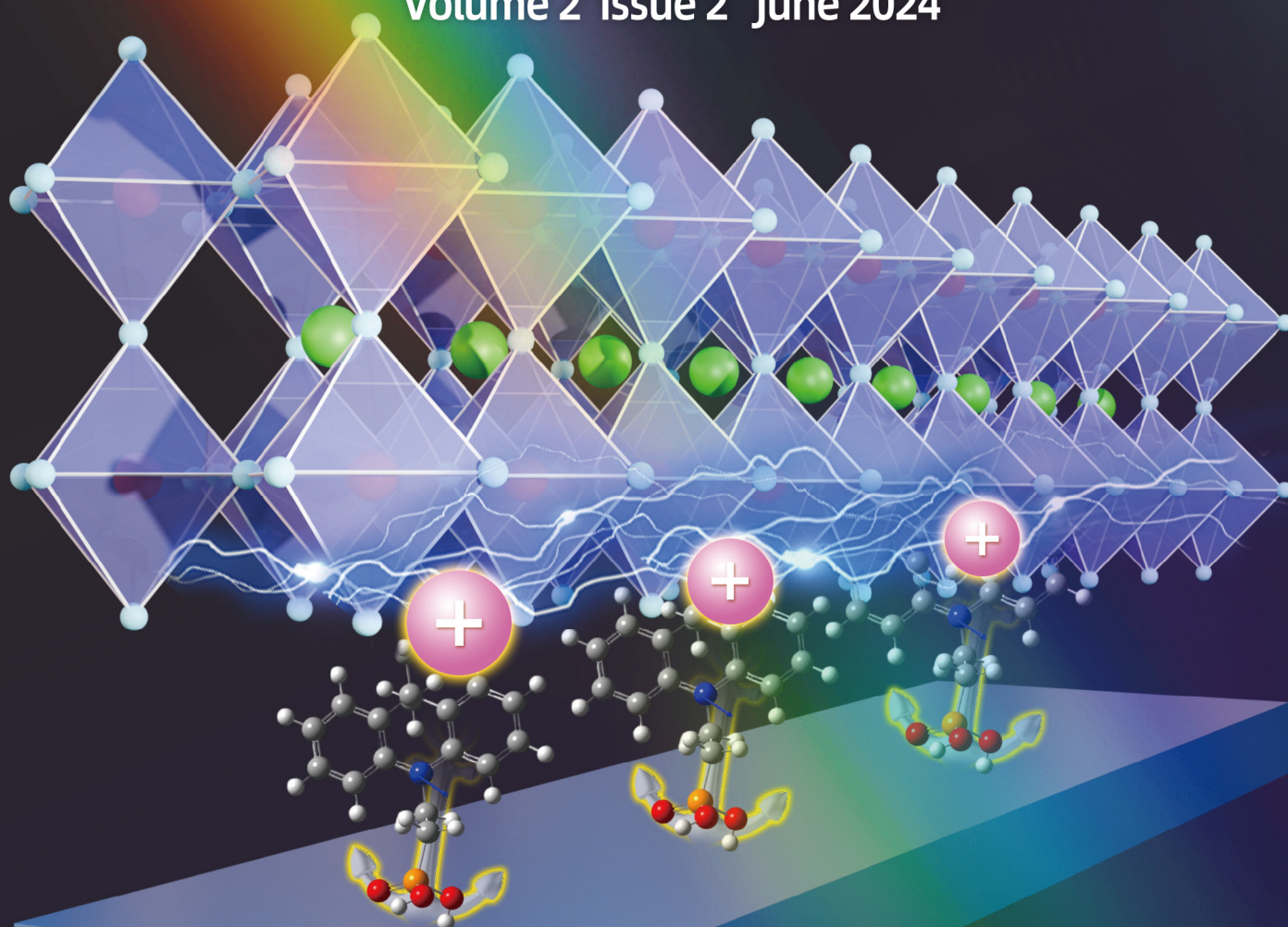


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**Dimethyl acridine-based self-assembled
monolayer as a hole transport layer for highly
efficient inverted perovskite solar cells**



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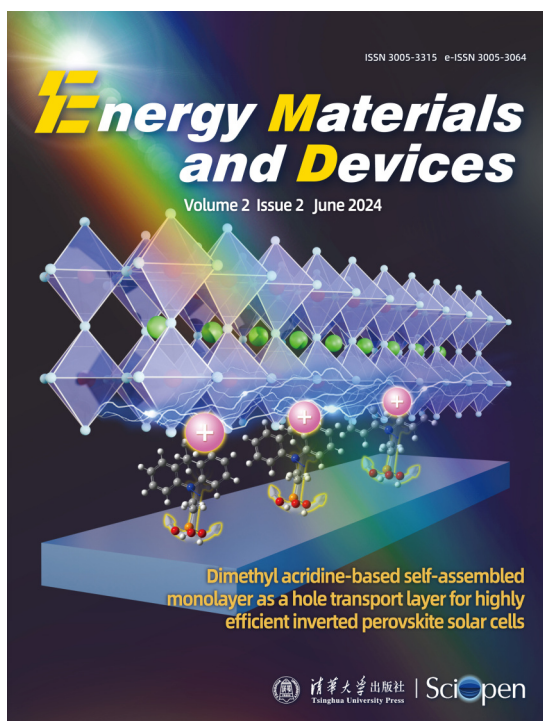
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Front Cover Story

The authors design and synthesize a novel self-assembled monolayer (SAM) molecule (2PADmA) for use as a hole-transporting layer (HTL) in inverted perovskite solar cells. 2PADmA SAM modulates perovskite crystallization, facilitates carrier transport, passivates perovskite defects, and reduces nonradiative recombination. The 2PADmA-based device achieves a higher power conversion efficiency (PCE) of 24.01% and better stability compared to devices using the commonly employed 2PACz SAM HTL. (See the article by Li L. F. et al. <https://doi.org/10.26599/EMD.2024.9370038>)

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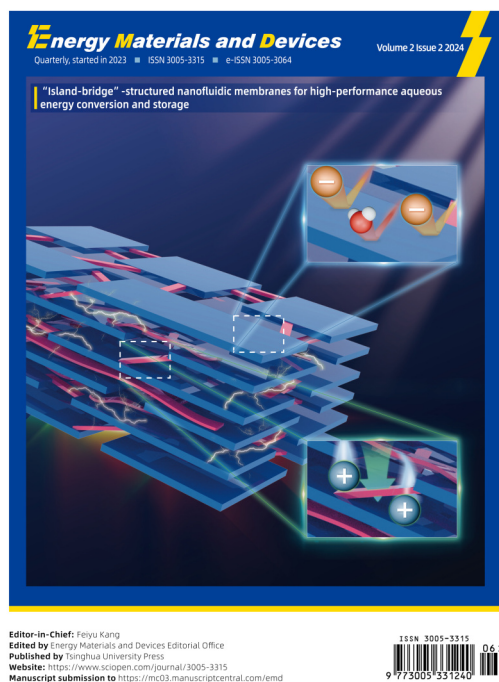
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Back Cover Story

A distinctive “island-bridge” membrane structural design strategy was proposed to rationally balance the membranes’ permeability and selectivity. In this configuration, the nanoribbons and nanosheets can be self-assembled into a nanofluidic membrane, where nanosheets as isolated islands offer adequate ionic selectivity owing to their high surface charge density, meanwhile bridge-like nanoribbons with low surface charge density but high aspect ratio remarkably enhance the membrane’s permeability and water stability. As verified by molecular simulations and experiments, the as-prepared membranes could greatly boost the performance of aqueous energy conversion (i.e., osmotic power generators) and storage (i.e., zinc metal batteries) devices. (See the article by Gao Y. F. et al. <https://doi.org/10.26599/EMD.2024.9370041>)

Information for Contributors

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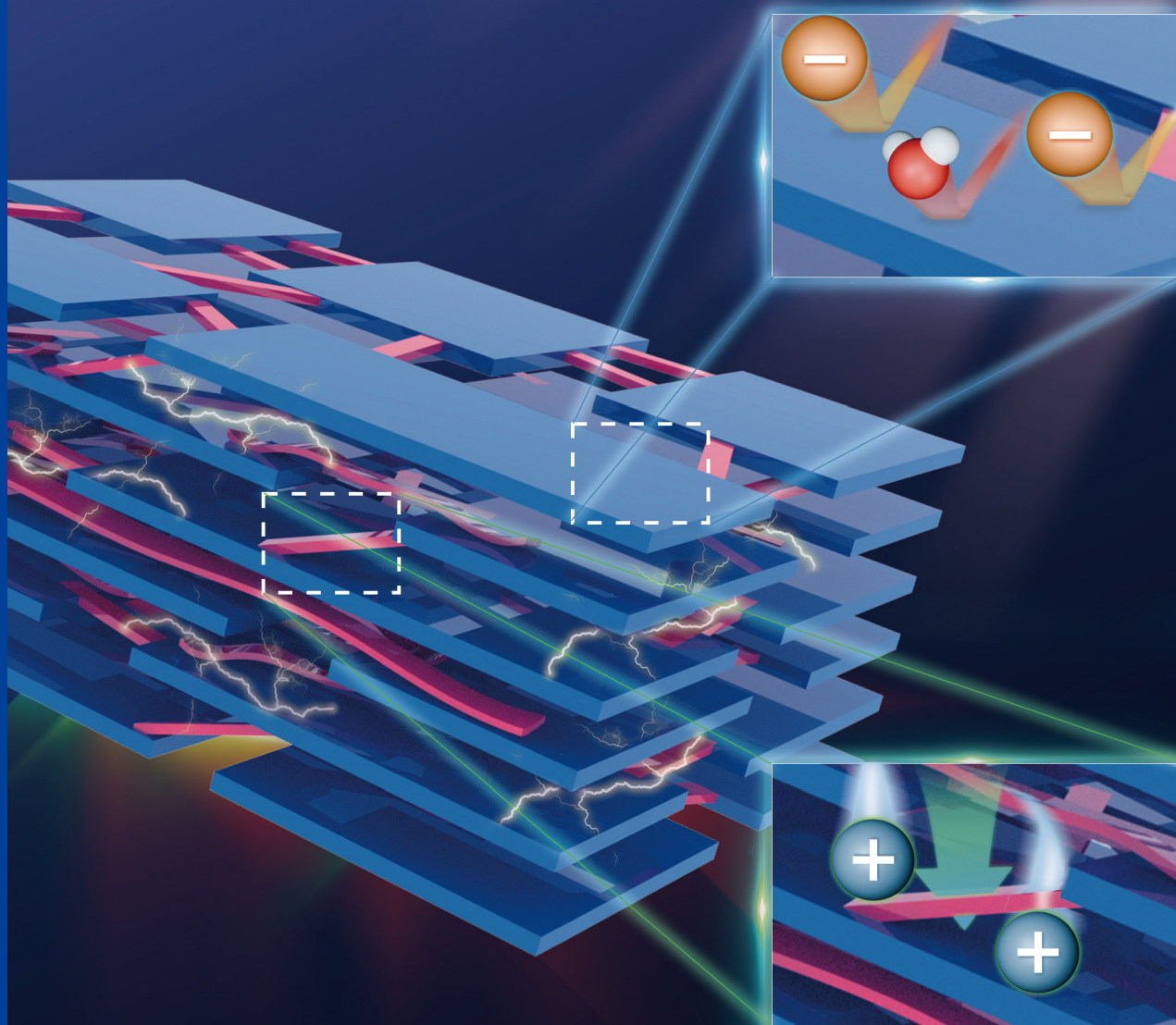
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"Island-bridge"-structured nanofluidic membranes for high-performance aqueous energy conversion and storage



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