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Front Cover

Mechanism of Brønsted-acid-promoted self-photosensitized [2+2] cycloaddition for synthesis of high-performance bio-spiral fuel

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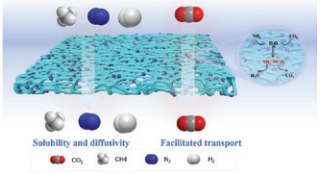
CONTENTS

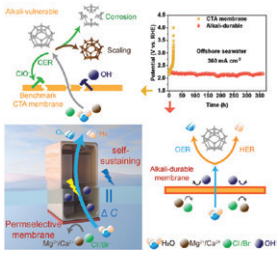
Review articles

This review paper examines facilitated transport membranes for post-combustion carbon capture, focusing on the latest polymer materials, principles, and challenges, including carrier saturation, temperature effects, and water influence over the past five years.

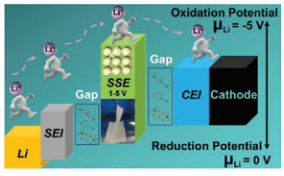


Research papers

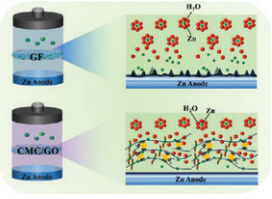
The alkali-durable forward osmosis membrane is successfully incorporated with the bifunctional nonprecious metal electrocatalysts to enable the self-sustaining direct seawater splitting, which could sustain a current density of 360 mA cm^{-2} at the cell voltage of 2.10 V and 2.15 V for over 360 h in the synthetic seawater and real offshore seawater, respectively.



The formulation of solid-state batteries incorporated the enhancement of ionic conduction and interfacial modulation, thereby providing the valuable insights for optimizing the solvent-free method and performance of solid-state batteries.



A strategy of nanoparticles doped hydrogel is proposed for constructing carboxymethyl cellulose/graphite oxide hybrid hydrogel electrolyte membranes with exceptional ionic conductivity, anti-swelling property, and simultaneously addressing the dendrites and parasitic reaction.



"Soft-hard" double-layer coating strategy has been proposed for ball-milled silicon anodes and provides improved electrochemical performance.