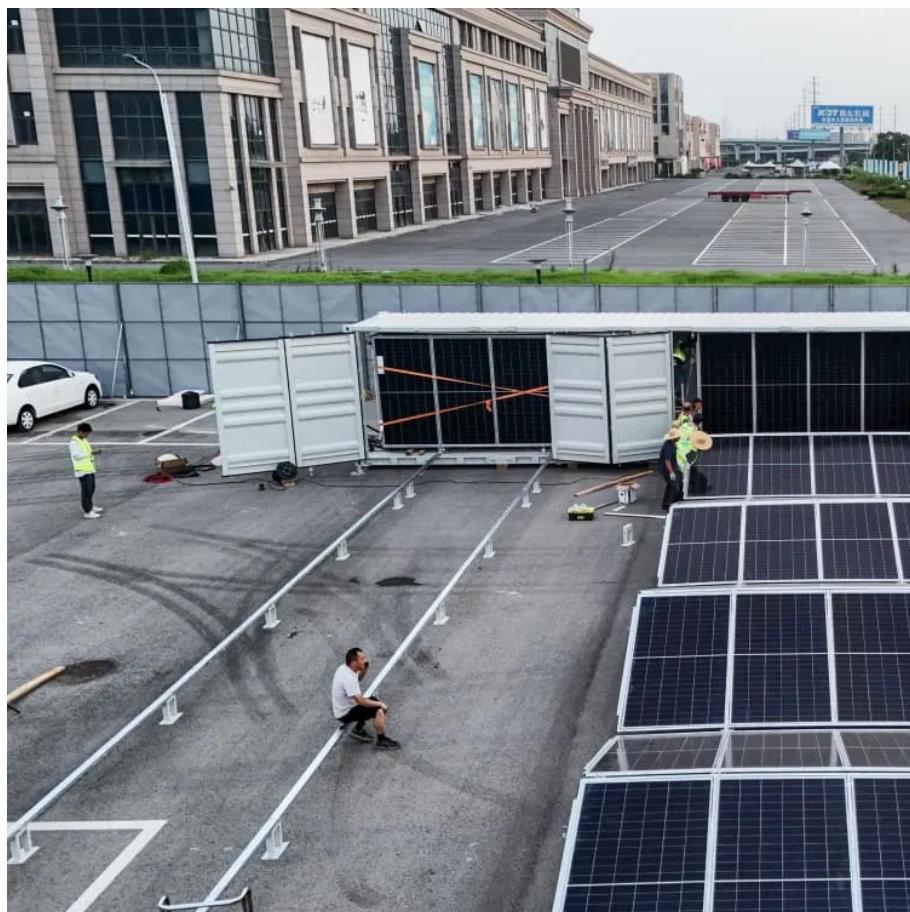




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Overview

Can aqueous colloid electrolytes improve reversible plating/stripping on Zn ion batteries?

Benefiting from stable colloid additives, aqueous colloid electrolytes as fast ion carriers can modulate the typical electrolyte system for improving reversible plating/stripping on Zn anode for high-performance Zn ion batteries 43, 44.

Are colloidal electrodes suitable for ultra-stable batteries?

Volume 27, Issue 11, 15 November 2024, 111229 Current solid- and liquid-state electrode materials with extreme physical states show inherent limitation in achieving the ultra-stable batteries. Herein, we present a colloidal electrode design with an intermediate physical state to integrate the advantages of both solid- and liquid-state materials.

How do aqueous Zn/peg/ZnI₂ colloid batteries integrate with a photovoltaic solar panel?

The integration potential of the aqueous Zn||PEG/ZnI₂ colloid battery with a photovoltaic solar panel was demonstrated by directly charging the batteries in parallel to 1.6 V vs. Zn/Zn²⁺ using a photovoltaic solar panel (10 V, 3 W, 300 mA) under local sunlight. The batteries were then connected in series to power an LED lamp (12 V, 1.5 W).

How does the PVP-I colloid interact with the electrolyte/cathode materials?

The PVP-I colloid exhibits a dynamic response to the electric field during battery operation. More importantly, the water competition effect between (SO₄)²⁻ from the electrolyte and water-soluble polymer cathode materials establishes a new electrolyte/cathode interfacial design platform for advancing ultralong-lifetime aqueous batteries.



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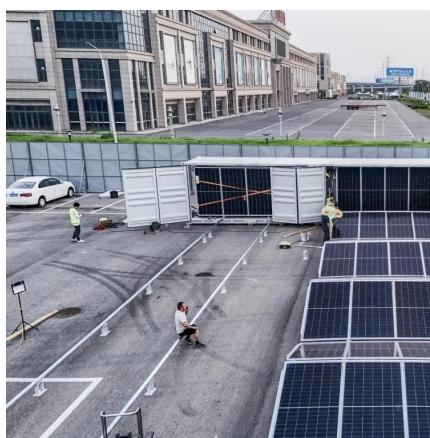


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