

Can colloidal starch confine polyiodides under high temperature?

For the I<sup>x-</sup> permeability under high temperature of 50 °C (Supplementary Figs. 42 and 43), the colloidal starch could strongly confine the polyiodides by forming a colloidal aggregation featuring low I<sup>x-</sup> permeability to impede the cross-over issue even at a severe condition of high temperature.

How stable is a colloidal IS FB?

The colloidal IS-based Zn-IS FBs with polypropylene (PP) membranes as LPPM could deliver superior performance of cycling stability for 350 cycles at high current density. In addition, due to the strong chemisorption between starch and iodine redox, the as-developed colloidal IS systems remained stable.

Are energy storage devices unipolar?

Furthermore, because energy storage devices are unipolar devices, for practical application, we must consider the non-switching I-V transients, as there will be no voltage of the opposite polarity to switch any ferroelectric polarization that may be present.

Does a colloid electrolyte have a rapid capacity decay?

However, the instability of their electrode/electrolyte interfaces in regular carbonate electrolytes (RCEs) results in a rapid capacity decay. To address this, a colloid electrolyte consisting of Li<sub>3</sub>P nanoparticles uniformly dispersed in the RCE is developed by a one-step synthesis.

Does colloidal starch improve reversibility of a Zn anode?

The results could be attributed to the ultrasmall-sized colloidal starch that could cross the membrane to the anolyte and consequently stabilize the pH of the anolyte, hence endowing improved reversibility of the Zn anode.

Can large-sized colloidal iodine-starch species avoid LPPM redox loss?

Inspired by the strong interaction between low-cost starch and iodine, we reason that the tunable large-sized colloidal iodine-starch (IS) active species could possess great potential to avoid the loss of active redox caused by the LPPM, as schemed in Fig. 1c 29,30,31,32,33.

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3 ???&#0183; Aqueous zinc-ion batteries represent a favorable technology for stationary energy storage systems owing to their safety, reliability, and cost-effectiveness. However, Zn anodes ...

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The cathode interface derived from this colloid electrolyte significantly facilitates the decomposition of Li salts (LiPF 6 and LiDFOB) on the cathode surface by weakening the ...

