

# **Comparison between zinc-nickel flow battery and all-vanadium flow battery**





## Overview

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What is a zinc-based flow battery?

The history of zinc-based flow batteries is longer than that of the vanadium flow battery but has only a handful of demonstration systems. The currently available demo and application for zinc-based flow batteries are zinc-bromine flow batteries, alkaline zinc-iron flow batteries, and alkaline zinc-nickel flow batteries.

What are the different types of flow batteries?

Currently, the flow battery can be divided into traditional flow batteries such as vanadium flow batteries, zinc-based flow batteries, and iron-chromium flow batteries, and new flow battery systems such as organic-based flow batteries, which hold great promise for energy storage applications.

Are zinc-based flow batteries good for distributed energy storage?

Among the above-mentioned flow batteries, the zinc-based flow batteries that leverage the plating-stripping process of the zinc redox couples in the anode are very promising for distributed energy storage because of their attractive features of high safety, high energy density, and low cost .

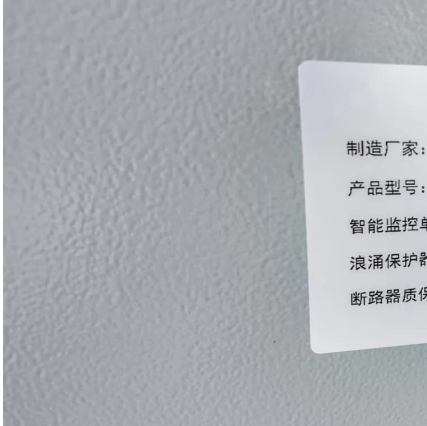
Are aqueous zinc-based redox flow batteries suitable for large-scale energy storage applications?

Aqueous zinc-based redox flow batteries are promising large-scale energy storage applications due to their low cost, high safety, and environmental friendliness. However, the zinc dendritic growth has depressed the cycle performance, stability, and efficiency, hindering the commercialization of the zinc-based redox flow batteries.



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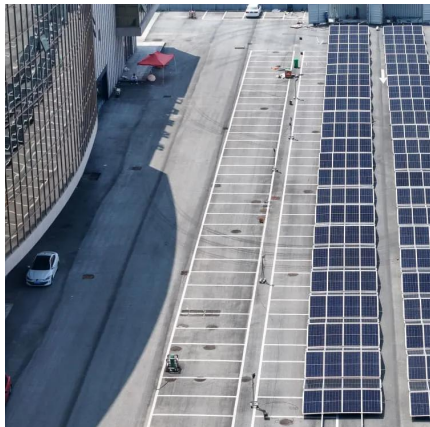






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