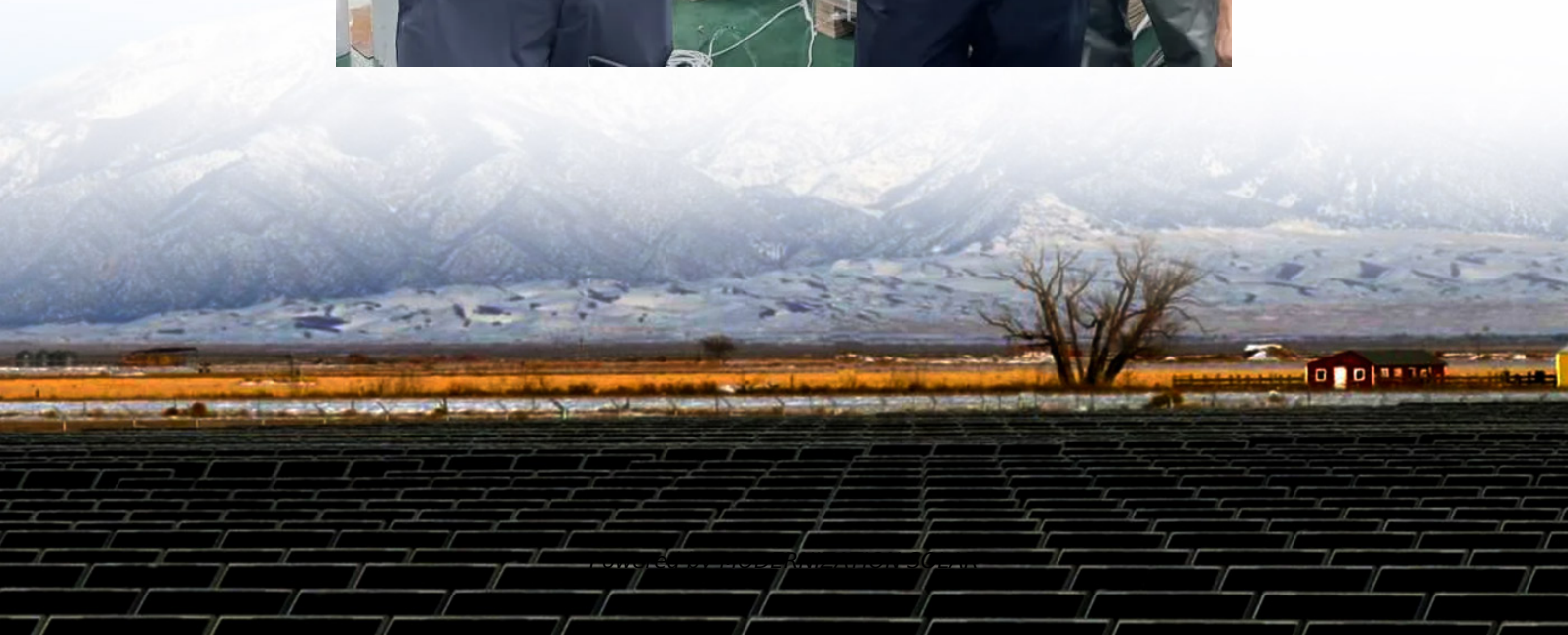


Zinc-iron flow battery architecture





Overview

Are neutral zinc-iron flow batteries a good choice?

Neutral zinc-iron flow batteries (ZIFBs) remain attractive due to features of low cost, abundant reserves, and mild operating medium. However, the ZIFBs based on $\text{Fe}(\text{CN})_6^{3-}/\text{Fe}(\text{CN})_6^{4-}$ catholyte suffer from $\text{Zn}^{2+}/\text{Fe}(\text{CN})_6^{4-}$ precipitation due to the Zn^{2+} crossover from the anolyte.

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 advantages of zinc-iron flow batteries?

Especially, zinc-iron flow batteries have significant advantages such as low price, non-toxicity, and stability compared with other aqueous flow batteries. Significant technological progress has been made in zinc-iron flow batteries in recent years.

Are zinc-based flow batteries good for grid-scale energy storage?

Zinc-based flow batteries have attracted tremendous attention owing to their outstanding advantages of high theoretical gravimetric capacity, low electrochemical potential, rich abundance, and low cost of metallic zinc. Among which, zinc-iron (Zn/Fe) flow batteries show great promise for grid-scale energy storage.



Zinc-iron flow battery architecture



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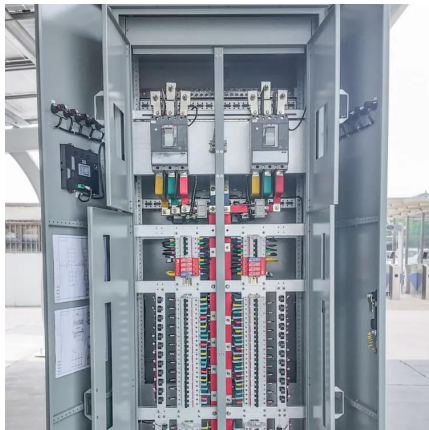


...



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