

Iron-zinc flow battery cost





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 Zn^{2+} precipitation due to the Zn^{2+} crossover from the anolyte.

How much does an alkaline zinc-iron flow battery cost?

In this work, a cost model for a 0.1 MW/0.8 MWh alkaline zinc-iron flow battery system is presented, and a capital cost under the U.S. Department of Energy's target cost of 150 \$ per kWh is achieved. Besides, the effects of electrode geometry, operating conditions, and membrane types on the system cost are investigated.

How much does a zinc-iron redox-flow battery cost?

A zinc-iron redox-flow battery under \$100 per kWh of system capital cost Energy Environ. Sci., 8 (2015), pp. 2941 - 2945, 10.1039/c5ee02315g Chem. Rev., 115 (2015), pp. 11533 - 11558, 10.1021/cr500720t Toward a low-cost alkaline zinc-iron flow battery with a polybenzimidazole custom membrane for stationary energy storage.

How much does a zinc/iron battery cost?

The battery exhibited very high power density, energy density, and efficiencies. Most importantly, by using the self-made, low-cost PBI membrane with ultra-high chemical stability, 3D porous carbon felt electrode, and inexpensive zinc and iron active materials, the cost of zinc/iron battery system is even lower than \$90/kWh.



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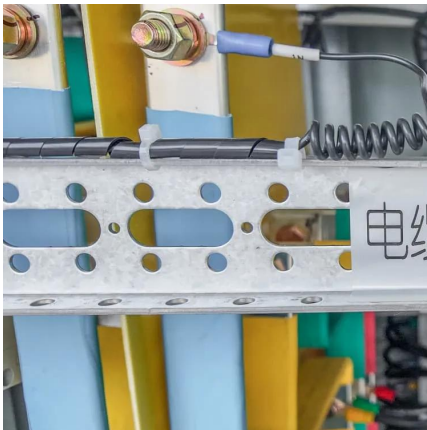


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