Are alkaline zinc-iron flow batteries good for energy storage?
Alkaline zinc-iron flow batteries (AZIFBs) are well suited for energy storagebecause of their good safety,high cell voltage,and low cost. However,the occurrence of irreversible anodic parasitic reactions results in a diminished coulombic efficiency (CE),unbalanced charge state of catholyte/anolyte and subsequently,a poor cycling performance.

Can alkaline Zn-based flow batteries be used for high density energy storage?
While the above results are promising,for alkaline Zn-based flow batteries,the limited solubility of [Zn (OH) 4]2- (or ZnO) at high pH which commonly entails a low volumetric capacity of the anolyte,should be addressed for high density energy storage.

How stable is an azifb battery?
Figure 3a shows the cycling stability of a capacity-balanced AZIFB at a current density of 50 mA cm? 2 and 80% SOC. The battery underwent continuous testing for ?100 cycles,maintaining an average CE of 99.56%. Subsequently,a rapid capacity decay ensured at a rate of 0.166% per cycle.

Can zinc be used in alkaline Zn/Fe flow batteries?
Based on this strategy, alkaline Zn/Fe flow batteries using zinc as the anode and ferricyanide as catholyte active species demonstrated extraordinary cycling performance at a high zinc loading of up to 250 mA h cm-2 and near unity utilization.

Shiqiang Cui, Jiangjiang Zhang, Shangze Fan, Xuteng Xing, Libo Deng, and Yongji Gong*,"SiOxCy Microspheres with Homogeneous Atom Distribution for a High-Performance Li-Ion Battery", Nano Letters 2022, 22, 23, 9559-9565. 22.

Vacancy manipulating of molybdenum carbide MXenes to enhance Faraday reaction for high performance lithium-ion batteries X Guo, C Wang, W Wang, Q Zhou, W Xu, P Zhang, S Wei, Y Cao, K Zhu, ... Nano Res. Energy 1, e9120026, 2022

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Zinc-based redox flow battery is regarded as one of the most promising electricity storage systems for large-scale applications. However, dendrite growth and the formation of "dead zinc" of ...

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@article{Yang2022AnAZ, title={An aqueous zinc-ion battery working at -50°C enabled by low-concentration perchlorate-based chaotropic salt electrolyte}, author={Guoshen Yang and Jialei Huang and Xuhao Wan and Binbin Liu and Yachao Zhu and Jiawei Wang and Olivier Fontaine and Shiqiang Luo and Pritesh Hiralal and Yuzheng Guo and Hang Zhou ...

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