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Title: All-iron liquid flow battery charging and discharging efficiency

Generated on: 2026-04-13 03:13:52

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To improve the flow mass transfer inside the electrodes and the efficiency of an all-iron redox flow battery, a semi-solid all-iron redox flow battery is presented experimentally.

Most importantly, the battery demonstrates a coulombic efficiency of more than 99.0% and an energy efficiency of 83% for a long duration (12, 16 and 20 h per cycle) charge/discharge...

The researchers report in Nature Communications that their lab-scale, iron-based battery exhibited remarkable ...

Iron/iron redox flow batteries (IRFBs) are emerging as a cost-effective alternative to traditional energy storage systems. This study investigates the impact of key operational characteristics, ...

Iron-based ARFBs rely on the redox chemistry of iron species to enable efficient and cost-effective energy storage. Understanding the fundamental electrochemical principles ...

Energy storage is crucial in this effort, but adoption is hindered by current battery technologies due to low energy density, slow charging, and safety issues. A novel liquid metal ...

Iron flow battery-based storage solutions have recently made a historical breakthrough to counter some of the disadvantages of lithium ...

The researchers report in Nature Communications that their lab-scale, iron-based battery exhibited remarkable cycling stability over one thousand consecutive charging cycles, ...

We have found that the increase of charging current density has a significant beneficial impact on the

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coulombic efficiency. We attribute this increase in efficiency to the increase of surface pH ...

Iron flow battery-based storage solutions have recently made a historical breakthrough to counter some of the disadvantages of lithium-ion battery solutions. They offer ...

Most importantly, the battery demonstrates a coulombic efficiency of more than 99.0% and an energy efficiency of ~83% for a ...

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