

# New energy storage battery iron at the winter olympics

Are iron-air batteries good for multi-day storage?

Nevertheless, iron-air batteries champion the multi-day storage applications with their low cost, inherent safety, and high volumetric energy density (~200 Wh/L at the pack level).

Is there a new 'Iron Age' for iron-air batteries?

A new "iron age" in which this unmet need is satisfied by iron-air batteries deployed at terawatt-hour scale might be upon us, creating a circular loop to enable green-hydrogen-produced zero-emission iron as an output for steelmaking and as the feedstock for iron-air batteries.

Are iron-air batteries a good option for steelmaking?

Iron-air batteries show promising potential as a long-duration storage technology, which can further foster a zero-emission transition in steelmaking. The energy system, which contributes to more than 70% of global greenhouse gas (GHG) emissions, is the linchpin of global decarbonization efforts.

How does an iron-air battery work?

In an iron-air battery, an iron electrode is oxidized to iron hydroxide when the battery is discharged and reduced back to iron metal when the battery is charged. Meanwhile, the other electrode, an air electrode, absorbs oxygen from the atmosphere as the battery is discharged and releases oxygen as the battery is charged.

Are all-iron batteries really green?

All-iron battery systems composed of elemental Fe, ordinary nontoxic ferrous and sodium salts, as well as ferruginous phosphates (often used as food additives or raw materials for manufacturing phosphate/iron fertilizers) may hold great promise in being "absolutely green" and "ultra-low-cost" rechargeable power sources in future.

Are iron-air batteries better than Li-ion batteries?

However, iron-air batteries have lower specific energy (~40 Wh/kg), lower power density, and lower round-trip efficiency than modern Li-ion batteries, which ultimately made them an unattractive technology for automotive traction applications.



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