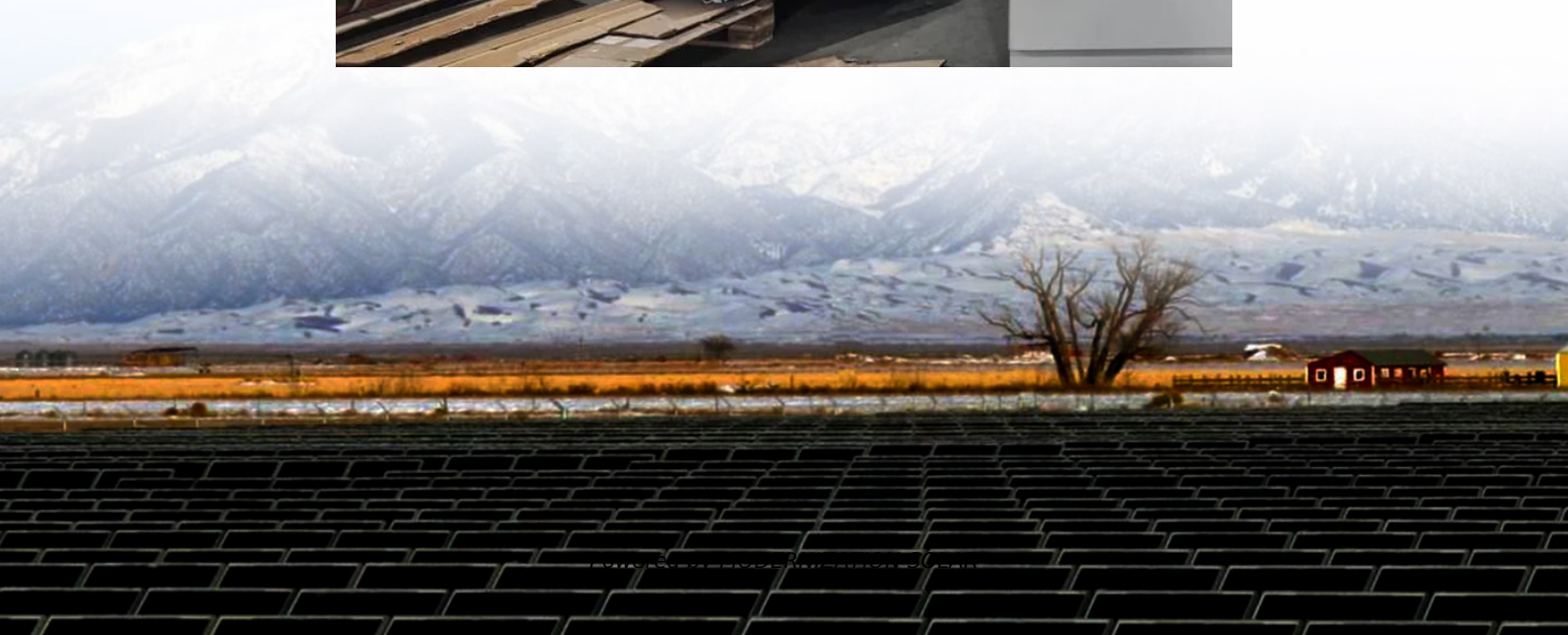


Flywheel energy storage with sodium battery





Overview

The proposed innovation consists of solid-state batteries that use either lithium or sodium metal as the anode material; these batteries offer a breakthrough in terms of energy per unit mass and volume at the cell level (>30% improvement vs. current Li-ion batteries), cost (by increasing energy density and using low-cost materials), safety (by use of electrolyte materials with improved intrinsic thermal stability), and an ability to serve numerous end-use sectors including specialized applications such as aerospace, as well as larger markets in transportation and stationary storage. Are flywheel energy storage systems a viable alternative to batteries?

This mismatch between supply and demand necessitates effective energy storage solutions. While batteries have been the traditional method, flywheel energy storage systems (FESS) are emerging as an innovative and potentially superior alternative, particularly in applications like time-shifting solar power.

What is a flywheel energy storage system?

Flywheel energy storage systems offer a durable, efficient, and environmentally friendly alternative to batteries, particularly in applications that require rapid response times and short-duration storage. For displacing solar power from midday to late afternoon and evening, flywheels provide a promising solution.

Are flywheel systems a good choice for solar power generation?

Flywheel systems are ideal for this form of energy time-shifting. Here's why: Solar power generation peaks in the middle of the day, but energy demand peaks in the late afternoon and early evening. Flywheels can quickly absorb excess solar energy during the day and rapidly discharge it as demand increases.

Do flywheels store energy?

Nevertheless, flywheels have performed common energy storage and control tasks throughout human history in a continuous line of record back to 6,000



BC, from potter's wheels on up to the automotive industry of today. "A flywheel comprises a rotating mass that stores kinetic energy.



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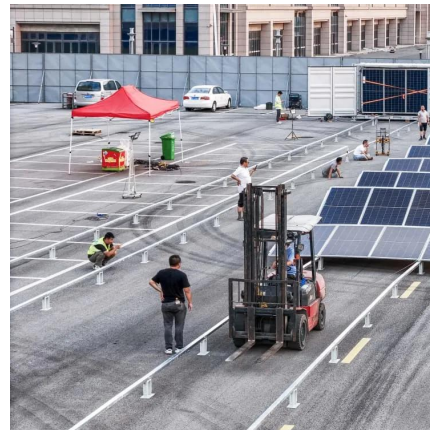


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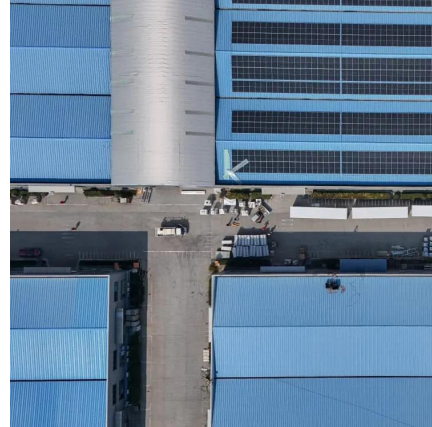
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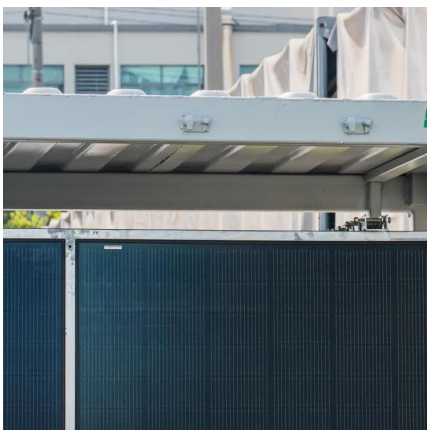
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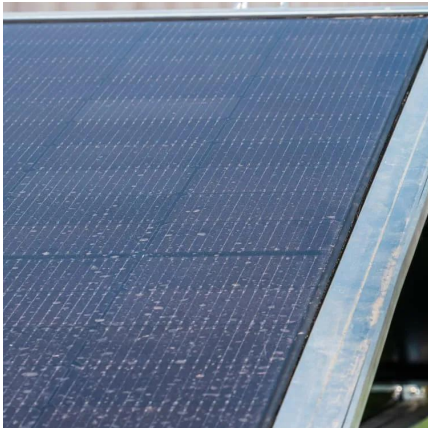
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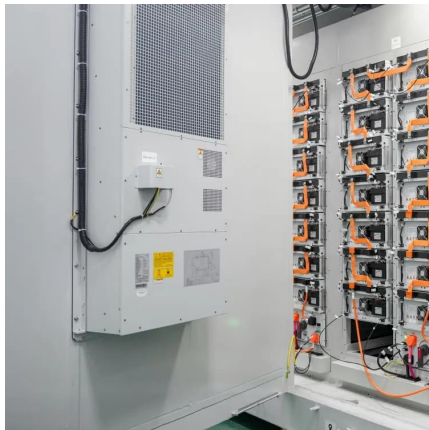
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