

Inner rotor strength of energy storage flywheel





Overview

The flywheel is the main energy storage component in the flywheel energy storage system, and it can only achieve high energy storage density when rotating at high speeds. Choosing appropriate fly.

What is a flywheel rotor?

Flywheel rotors are a key component, determining not only the energy content of the entire flywheel energy storage system (FESS), but also system costs, housing design, bearing system, etc. Using simple analytic formulas, the basics of FESS rotor design and material selection are presented.

How does a flywheel energy storage system work?

The flywheel energy storage system mainly stores energy through the inertia of the high-speed rotation of the rotor. In order to fully utilize material strength to achieve higher energy storage density, rotors are increasingly operating at extremely high flange speeds.

How energy is stored in a flywheel rotor?

Energy is stored in a fast-rotating mass known as the flywheel rotor. The rotor is subject to high centripetal forces requiring careful design, analysis, and fabrication to ensure the safe operation of the storage device. 1. Introduction.

What affects the energy storage density of a flywheel rotor?

Material properties The energy storage density is affected by the specific strength of the flywheel rotor (the ratio of material strength to density σ / ρ). The allowable stress and density are both related to the material used in the flywheel.



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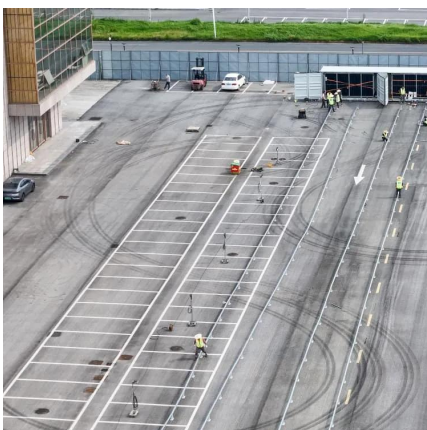
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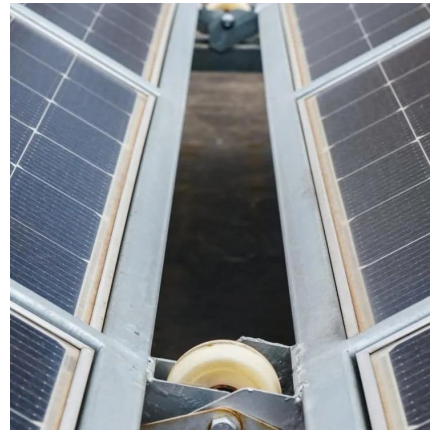
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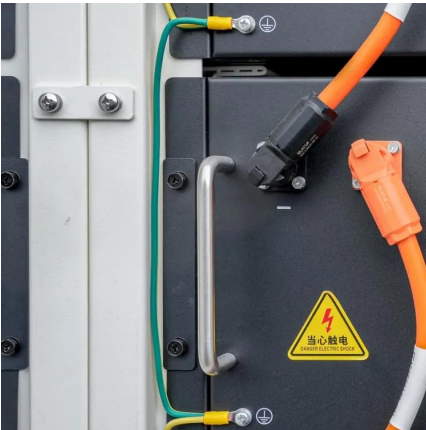
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