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Superconducting solar container energy storage system maturity





Overview

The review shows that additional protection, improvement in SMES component designs and development of hybrid energy storage incorporating SMES are important future studies to enhance the competitiveness and maturity of SMES system on a global scale. What is a superconducting magnetic energy storage system?

Superconducting magnetic energy storage system can store electric energy in a superconducting coil without resistive losses, and release its stored energy if required [9, 10]. Most SMES devices have two essential systems: superconductor system and power conditioning system (PCS).

What are superconductor materials?

Superconductor materials are being envisaged for Superconducting Magnetic Energy Storage (SMES). It is among the most important energy storage systems particularly used in applications allowing to give stability to the electrical grids.

How does a superconducting coil store energy?

This system is among the most important technology that can store energy through the flowing a current in a superconducting coil without resistive losses. The energy is then stored in act direct current (DC) electricity form which is a source of a DC magnetic field.

Is superconducting magnetic energy storage a source impulsionnelle?

A. Badel, Superconducting magnetic energy storage haute température critique comme source impulsionnelle. Supraconductivité [cond-mat.supr-con]. Institut National Polytechnique de Grenoble-INPG, (2010). Français.
fftel-00654844ff Y. Kanamaru, Y. Amemiya, Numerical analysis of magnetic field in superconducting magnetic energy storage.



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Essia Hannachi, Zayneb Trabelsi, and Yassine Slimani
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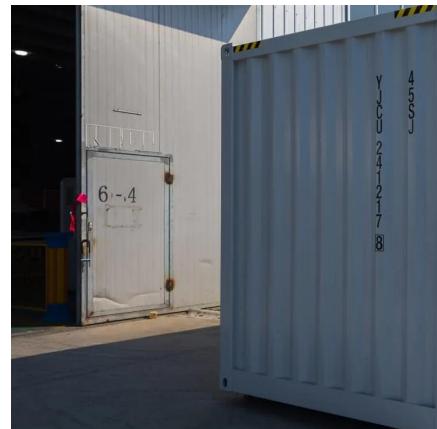


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