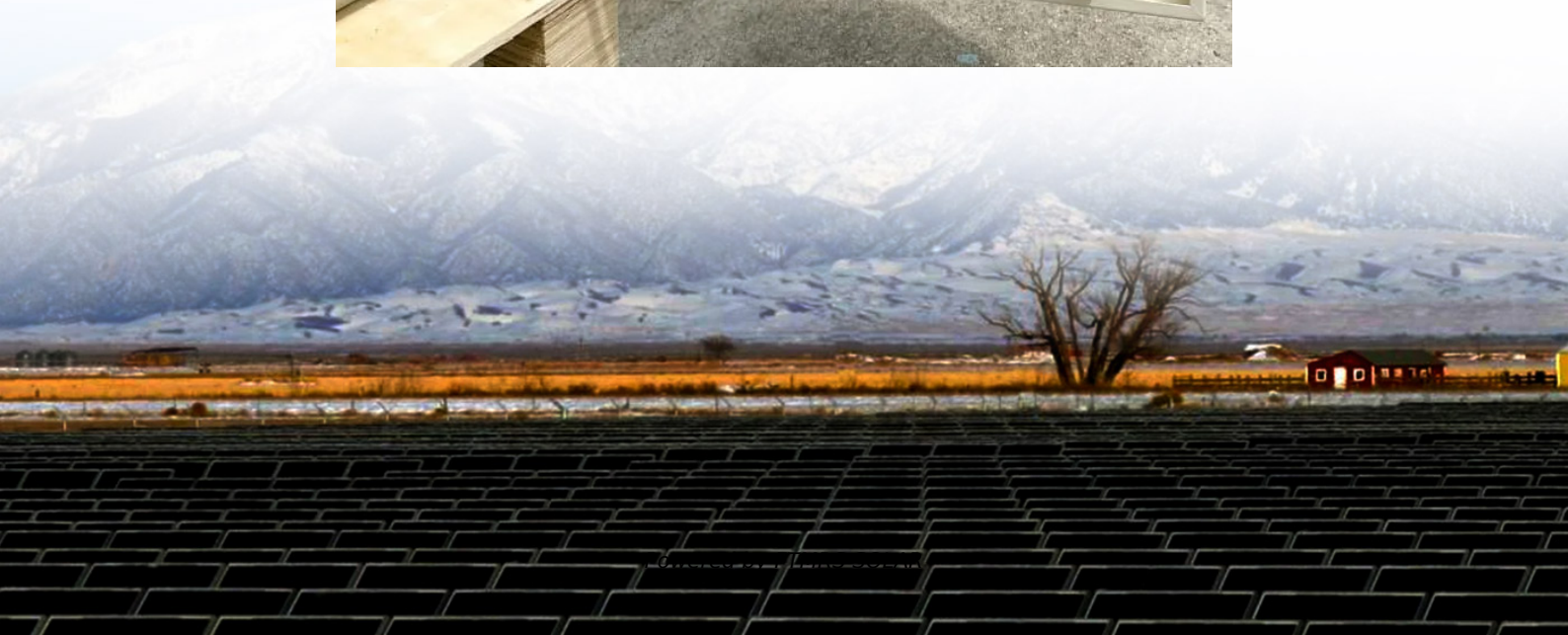


Solar container lithium battery pack safety design





Overview

Nowadays, battery design must be considered a multi-disciplinary activity focused on product sustainability in terms of environmental impacts and cost. The paper reviews the design tools and method.

Why is a lightweight battery pack enclosure important?

The lightweight battery pack enclosure design is desirable for maintaining a long-range and having good safety. Xiong et al. studied a novel procedure that significantly reduced the weight of the battery pack by improving its crashworthiness.

How can battery packaging design improve battery safety?

A robust and strategic battery packaging design should also address these issues, including thermal runaway, vibration isolation, and crash safety at the cell and pack level. Therefore, battery safety needs to be evaluated using a multi-disciplinary approach.

Why is battery pack crashworthiness important in EV design?

Crashworthiness is a vehicle's capacity to safeguard its occupants in frontal, side, or rear accidents. After a collision, the damaged cells could lead to short circuits and thermal runways, causing safety problems for passengers and the environment. Therefore, improving the battery pack crashworthiness is a necessary practice in EV design.

What is a Li-ion battery pack?

A Li-ion battery pack is a complex system with specific architecture, electrical schemes, controls, sensors, communication systems, and management systems. Current battery systems come with advanced characteristics and features; for example, novel systems can interact with the hosting application (EVs, drones, photovoltaic systems, grid, etc.).



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