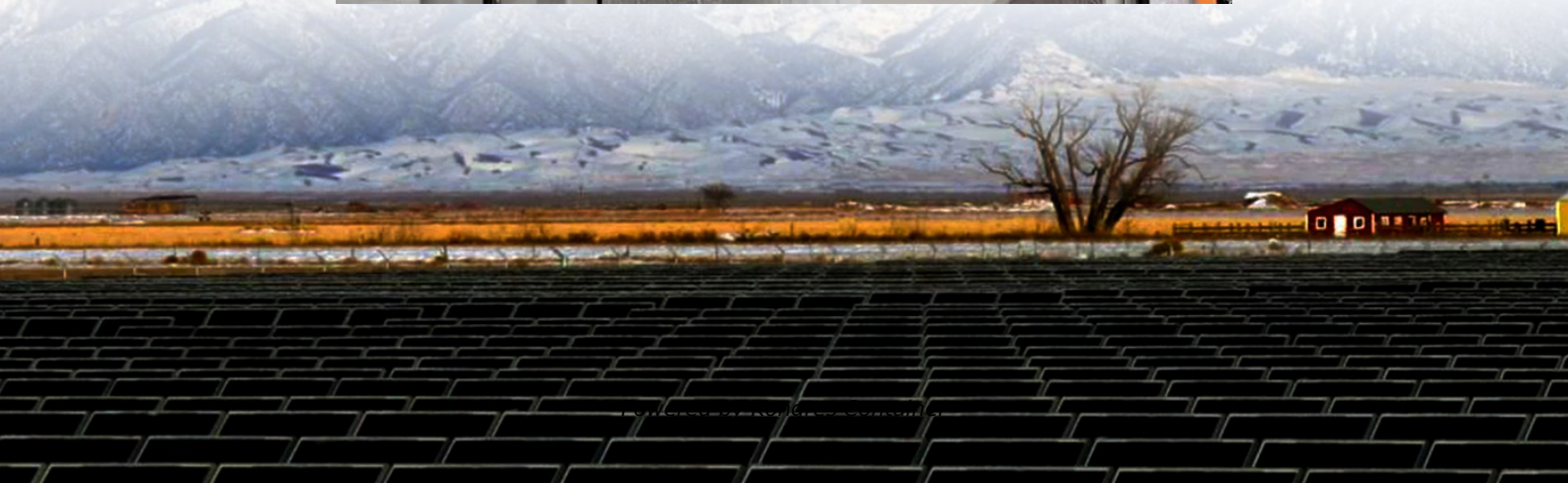


Kongres Container

What is the thermal and electrical separation technology of the battery cabinet



Overview

How do battery separators achieve thermal shutdown?

Thermal shutdown is achieved through the expansion of microspheres. These separators are based on PVDF-HFP with different amounts of microspheres. PVDF-HFP/15 wt% of microspheres show excellent cycling behavior and thermal shutdown. Battery separators with thermal shutdown capabilities have been developed to improve battery safety.

How to choose a battery separator?

In view of battery safety, the separator must be able to act as a blocking interface between the electrodes when an internal short circuit occurs, so that the thermal runaway is avoided. Chemical and thermal stability, as well as shutdown function at the set temperature, should be the requirement for the separator.

How to design a high-safety lithium-ion battery separator?

Designing high-safety battery is a fundamental strategy for solving the potential thermal runaway risk. The ideal lithium-ion battery separator should possess good electronic insulation, appropriate pore size and porosity, chemical and electrochemical stability, excellent wettability, mechanical strength, thermal stability, and high safety.

What is a thermal safety separator?

The thermal safety separator focuses on having a higher melting point and lower thermal shrinkage than the commercial LIB polyolefin separator. Thermal-shutdown separators would prevent the thermal runaway by shutting down the battery's electrochemical reaction.

Why do lithium ion batteries need a separator?

The separator is a key component of lithium-ion batteries. It plays a crucial role in battery safety, serving as one of the most effective measures against

internal short circuits. Separator failure is a direct cause of the thermal runaway and can be specifically divided into three categories: puncture, melting, and thermal shrinkage.

What are the characteristics of a battery separator?

Key attributes of the separator are ion permeability, mechanical strength, thermal stability, chemical resistance, and electrical insulation . To achieve optimal battery performance, it is essential to appropriately combine the characteristics of the separator with the electrolyte solution .

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