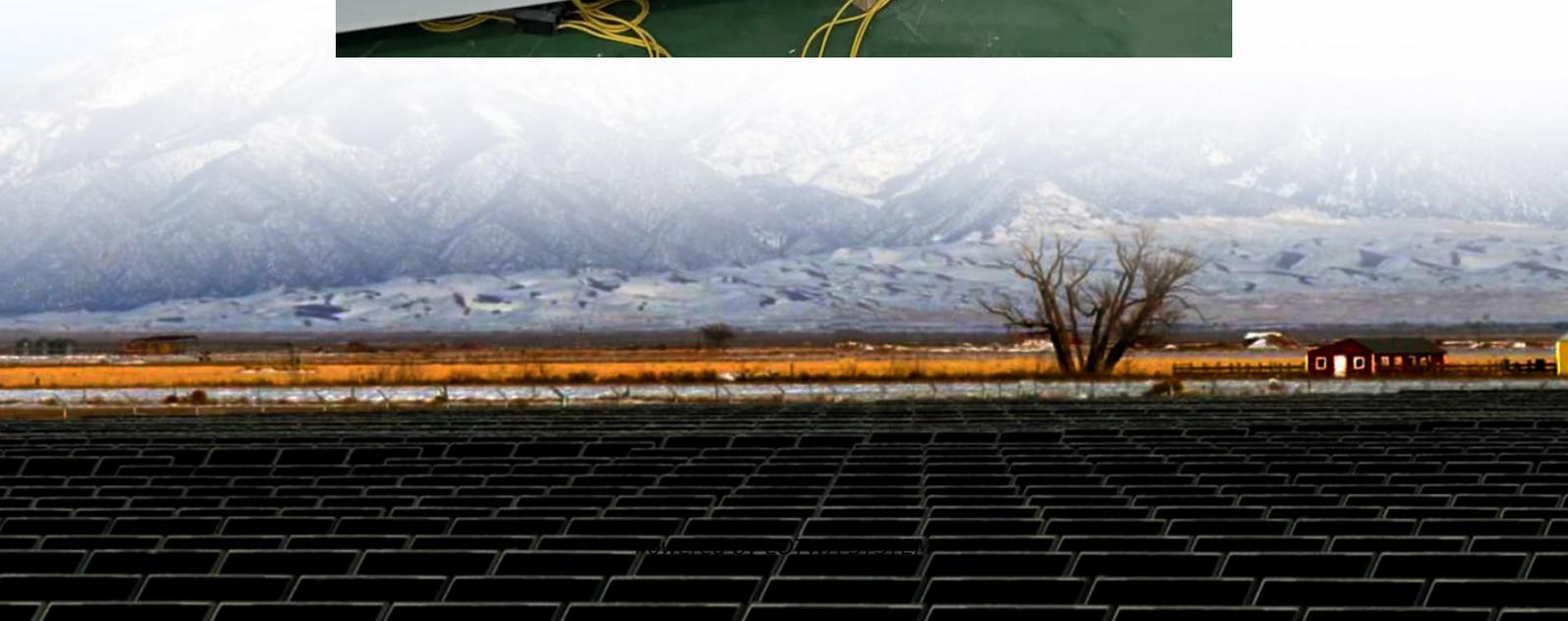


Battery pack temperature and humidity requirements





Overview

What are the environmental requirements for a battery pack?

The battery pack was subjected to extensive environmental testing, such as temperature, vibration, and humidity. This is discussed in Section IV. Safety is one of the most important requirements of automotive battery packs, as discussed in Section V.

What is a good battery packing design?

An optimal battery packing design can maintain the battery cell temperature at the most favorable range, i.e., 25–40 °C, with a temperature difference in each battery cell of 5 °C at the maximum, which is considered the best working temperature. The design must also consider environmental temperature and humidity effects.

How does a PCM protect a battery from overheating?

This helps maintain a more uniform temperature across the battery pack and prevents localized overheating. As the temperature rises, the PCM absorbs thermal energy and transitions to a liquid state, stabilizing the pack's temperature. When the temperature falls, the material solidifies, releasing stored heat.

What are the standards for a battery pack?

There are few standards addressing topics such as ISO7637_1 ; ISO7637_2 ; ISO7637_3 , but as mentioned, more work or regulations are needed. The battery pack, as an individual component with connectors and interfaces, including all cells and electronics, has an acceptable EMC behavior, as defined in relevant standards.



Battery pack temperature and humidity requirements

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