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Title: Battery cabinet preheating system working principle

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Can a battery preheating system guarantee a suitable working temperature?

However, its severe sensitivity to working temperatures leads to problems when driving electric vehicles. Therefore, researchers and engineers have explored approaches to guaranteeing a suitable working temperature for LIB, one of which is the battery preheating system.

Can battery preheating ensure a suitable working temperature for Lib?

Therefore, researchers and engineers have explored approaches to guaranteeing a suitable working temperature for LIB, one of which is the battery preheating system. To clarify the advancement of this system, both internal and external preheating methods studied in recent years are summarized, and the discussion for future research is included.

Why is battery preheating important in cold climates?

Charging at low temperature will induce lithium deposition, and in severe cases, it may even penetrate the separator and cause internal short, resulting in an explosion. Therefore, battery preheating techniques are key means to improve the performance and lifetime of lithium-ion batteries in cold climates.

What is the requirement of battery preheating?

The requirement of battery preheating is that the temperature of the battery is quickly heated to a specific temperature, and the temperature difference is required to be less than 5 °C. It can be seen from the Sect. 5.2 that increasing the power of heating film can reduce the preheating time, while the temperature difference of battery is raised.

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