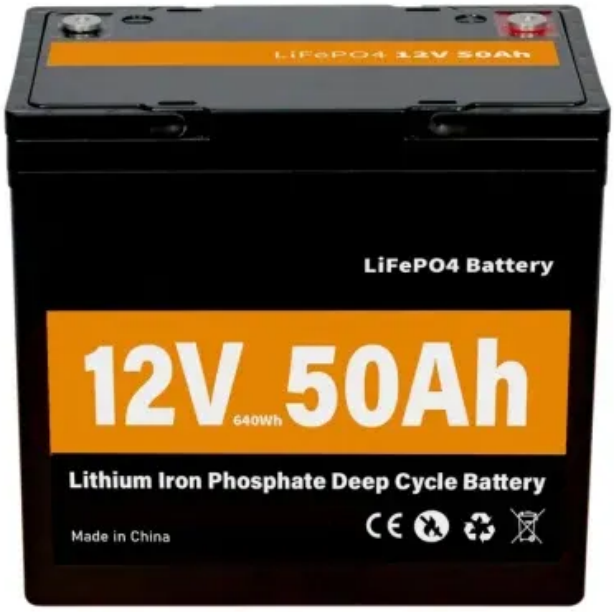
SolarInnovate Energy Solutions

How to achieve air cooling of battery cabinet



Overview

In this work, the computational fluid dynamics (CFD) method and lumped model of single cell are used to investigate the thermal characteristic of the 18650 battery module which consists of 60 pieces of cel.

What is a battery cooling method?

The battery cooling method using air as the medium is also called air-cooled cooling. According to whether the electric vehicle needs to provide auxiliary energy, it can be divided into active and passive heat dissipation methods.

Does a battery module need forced air cooling?

Knowing the natural convection cooling performance of the battery module is the first step to investigate the thermal performance of the battery module. If the natural cooling performance is suitable for the stability and durability of the battery, there is no need for using forced air cooling strategy.

What is air cooled cooling?

Overview of air-cooled cooling The thermal management of the power battery with air as the medium is to let the air traverse the battery pack to take away or bring heat to achieve the purpose of heat dissipation or heating. The battery cooling method using air as the medium is also called air-cooled cooling.

How to reduce temperature difference between battery cells?

By changing the air inlet and air outlet, the temperature difference between different battery cells can be further reduced. Alternate ventilation is a heat dissipation method that cools the battery by periodically changing the position of the air inlet and the air outlet. The principle is shown in Figure 2.

Can heat pipe thermal management control the temperature of battery pack?

Zhao et al. developed a heat pipe thermal management system with wet cooling which was able to control the temperature of battery pack in an appropriate temperature range . Air cooling method has the advantage of

structure simplicity , light weight and low cost which the other BTMS may not have.

How does active air cooling work?

The heat exchange in the heat dissipation process of active air cooling is mainly forced convection. Therefore, if the space around the battery module allows, a local radiator or fan can be installed, or an auxiliary or car's own evaporator can be used to provide cold air. The principle is shown in Figure 1.

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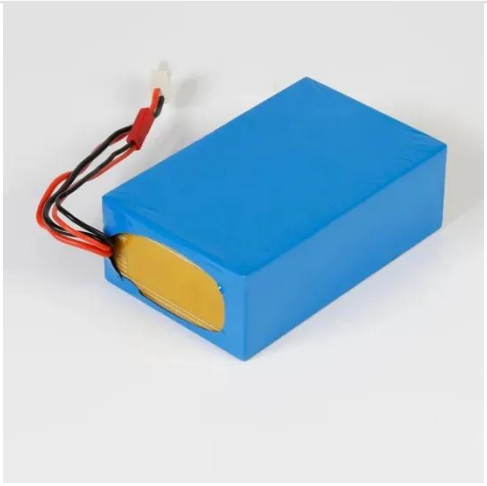

Comparison of different

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Feb 5, 2016 · Different cooling methods have different limitations and merits. Air cooling is the simplest approach. Forced-air cooling can mitigate temperature rise, but during aggressive ...

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Air cooling and heat dissipation performance of multi-layer battery

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