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Analysis of battery cooling system using nanofluid - A Review

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Abstract:

A battery cooling system that utilizes nanofluids can help manage the heat generated during battery operation and enhance overall thermal management. Nanofluids are engineered fluids that consist of a base fluid, such as water or oil, with dispersed nanoparticles. These nanoparticles typically have high thermal conductivity, which enables them to improve the heat transfer properties of the nanofluid. To design a battery cooling system using nanofluids, needs to consider the Nanofluid selection, Base fluid selection,Nanoparticle dispersion, Cooling system integration, Pumping and circulation, Heat dissipation, Monitoring and control. It's important to note that designing and implementing a battery cooling system using nanofluids requires careful consideration of various factors such as material compatibility, nanoparticle stability, and system efficiency. Additionally, safety measures should be taken to prevent leakage or contamination of the nanofluid within the battery system.Over the period of the last ten years, a great number of research have reported on the creation of nanofluids that are employed in LHP for the cooling of electronic devices. Because of their improved heat transmission and thermal qualities, nanofluids have found widespread usage in applications pertaining to electrical devices. This article reviews the production of nanofluids, as well as their stability and surfactants.

Keywords: Nanofluid, concentration, pumping power, dispersion, thermal management.

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