

عنوان مقاله:

Role of phase change materials in creating uniform surface temperature on a lithium battery cell applicable in electric vehicles

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خلاصه مقاله:

With respect to the limitations of fossil energy resources, different types of electric vehicles (EVs) are developed as suitable alternatives. Lithium-ion (Li-ion) battery cells play an extremely important role in EVs due to their unique features. But they need a thermal management system (TMS) to maintain their surface temperature uniformity and avoid them from thermal runaways. In the current study a phase change material (PCM) based TMS is introduced and applied to provide a uniform temperature distribution on a Li-ion battery cell surface. This PCM based TMS declines the final maximum temperature difference to $(1/5)$ and $(2/3)$ at 1 C and 2 C discharge rate respectively.

کلمات کلیدی:

Electric vehicles, Li-ion battery, Thermal management system, Phase change material

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