Kongres Container

Lithium Batteries and Phase Change Energy Storage

Overview

Energy storage systems like Li-ion batteries are facing many challenges and one of the main challenges in these systems is their cooling component. PCMs could transfer the heat during their phase change from solid to liquid and be transferred to their solid phase below their melting point.

Energy storage systems like Li-ion batteries are facing many challenges and one of the main challenges in these systems is their cooling component. PCMs could transfer the heat during their phase change from solid to liquid and be transferred to their solid phase below their melting point.

Effective battery thermal management (BTM) is crucial in maintaining the safety, efficiency, and lifespan of lithium-ion batteries, particularly in scenarios such as electric vehicles (EVs), where the demand for power can result in considerable heat production and the potential for thermal runaway.

Phase change materials (PCMs) are highly renowned for their substantial latent heat capacity, enabling efficient thermal management in applications such as buildings, wearable devices, and lithium-ion batteries (LIBs). However, conventional PCMs suffer from mechanical rigidity, leakage, and low thermal conductivity.

Phase-change materials (PCMs) have shown great potential in the thermal management (TM) of lithium batteries (LBs), but they still face significant challenges in independently managing TM over an ultra-wide temperature range (UWTR) from low temperatures to thermal runaway (TR).

Battery safety is critical across applications from consumer electronics to large-scale storage. This study identifies lithium oxidation as the primary driver of thermal runaway in high-energy .

Lithium Batteries and Phase Change Energy Storage

Contact Us

For catalog requests, pricing, or partnerships, please visit: https://drugiswiatowykongrespolakow.pl