

HydroTrak liquid cold plates offer up to 3x cooling of standard plates, ideal for high-power density applications like EVs, solar, and industrial power systems. Skip to content. 978-989-0981. ... Energy Storage, Transportation, Electric vehicle, Photonics, LED, Military, Industrial power supply cooling, and more.

To increase heat exchange area and improve cooling efficiency, some designs based on biological structural features are conducted, such as serpentine channels [17], web-shaped, and leaf-shaped [18]. Shen et al. [19] proposed a serpentine-channel cold plate and found that as the number of channels increased, the maximum temperature and temperature ...

Liquid cooling thermal management systems are very effective for high energy density cases and can meet most cooling needs, although they may have problems such as coolant leakage and high energy consumption [28, 29]. Chen et al. [30] investigated the effect of coolant flow and contact area for roll bond liquid cold plates. It was found that ...

2.1. Geometric model description. Figure 1 shows a schematic diagram of the battery pack with HCLC, comprising 15 18650 LIB (connected in 5 series and 3 parallel (5S3P)), aluminum thermal conductive element, curved flat heat pipes, and liquid-cooled plate. The main physical parameters of these elements are shown in Table 1. An aluminum block with curved grooves serves as the ...

@article{Wang2023OptimizationOL, title={Optimization of liquid cooling for prismatic battery with novel cold plate based on butterfly-shaped channel}, author={Yichao Wang and Xiaobin Xu and Zhiwei Liu and Jizhou Kong and Qingwei Zhai and Hossam Zakaria and Qianzhi Wang and Fei Zhou and Hongyu Wei}, journal={Journal of Energy Storage}, year ...

Optimized Cooling: Customization allows for the design of cold plates that perfectly fit the components they need to cool, ensuring efficient heat transfer.; Space Efficiency: Custom cold plates can be designed to fit within tight spaces, maximizing the use of available real estate within a system.; Enhanced Performance: Customization can significantly improve the ...

The thermal management of lithium-ion batteries allows them to safely provide power. Among the common techniques such as air cooling, liquid cooling, phase change material, heat pipe, and thermo-electric, the liquid cooling is very popular due to its greater compactness and efficient performance [40], [41] this article, nonuniform wavy minichannels are utilized ...

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