

Abstract

Using a simple structure to facilitate a flow path delivering coolant in an even and well-distributed manner, providing efficient and effective cooling for power battery packs in electric vehicles. The heat exchange apparatus is composed of an array of cooling duct plates, with ducts for coolant to flow within, with front and back covers and their respective rubber sheets facilitating the changing of direction of the coolant, providing a pathway for the coolant to flow throughout the array. Individual cells of the battery pack will be fitted in the spaces between these ducts, connected in series by a novel system of electricity-conducting clips, forming a structure where a comprehensive, well-distributed and compact cooling pathway can exist within the battery pack.

The concept and structure of this power battery pack cooling apparatus can also apply to other future implementations and applications requiring compact and lightweight battery packs, or applications requiring effective cooling systems under space constraints.

Fig 17



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