

직물 Mesh 적용 공랭식 경량 HEV용 고방열 BMA의 방열 특성 연구

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Recently, hybrid motor vehicles are having much attention from the automotive industry due to its high fuel efficiency as compare to the vehicles having only internal combustion engine. In order to increase fuel efficiency of hybrid motor vehicles, studies on increasing battery performance and its related systems are one of main topics in the automotive industry. Aluminum is a lighter than steel and its electric conductivity can be controlled through surface treatments. Therefore, in regular battery module, aluminum panel is used for covering battery cell. In this study, polymeric materials were attempted for replacing aluminum panel. By replacing aluminum panel with polymer, material cost and processing cost can be saved. However, polymers have a lower thermal conductivity than metals. Therefore, battery cell design was changed into the newly developed mesh type cover for enhancing heat release from the battery cell. In order to figure out improvement of heat release performance of the new system, degree of heat release from the battery cell was calculated and simulated by computer modelling. Computed values were verified with experimental data measuring temperature changes during battery charging and discharging of current and new systems.