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Wireless Battery Management System of Electric Transport (Conference Paper)

 Rahman, A.^a Rahman, M.^b Rashid, M.^b
^aDepartment of Mechanical Engineering, International Islamic University Malaysia, Malaysia

^bDepartment of Mechatronics Engineering, International Islamic University Malaysia, Malaysia

Abstract

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Electric vehicles (EVs) are being developed and considered as the future transportation to reduce emission of toxic gas, cost and weight. The battery pack is one of the main crucial parts of the electric vehicle. The power optimization of the battery pack has been maintained by developing a two phase evaporative thermal management system which operation has been controlled by using a wireless battery management system. A large number of individual cells in a battery pack have many wire terminations that are liable for safety failure. To reduce the wiring problem, a wireless battery management system based on ZigBee communication protocol and point-to-point wireless topology has been presented. Microcontrollers and wireless modules are employed to process the information from several sensors (voltage, temperature and SOC) and transmit to the display devices respectively. The WBMS multistage charge balancing system offering more effective and efficient responses for several numbers of series connected battery cells. The concept of double tier switched capacitor converter and resonant switched capacitor converter is used for reducing the charge balancing time of the cells. The balancing result for 2 cells and 16 cells are improved by 15.12% and 25.3% respectively. The balancing results are poised to become better when the battery cells are increased. © Published under licence by IOP Publishing Ltd.

Indexed keywords

 Engineering controlled terms: [Display devices](#) [Electric batteries](#) [Electric vehicles](#) [Secondary batteries](#)

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