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A BIDIRECTIONAL BALANCED CIRCUIT OF SPACE FOR HIGH VOLTAGE BATTERY PACK

Abstract

In regard to the balance management for high voltage and high power battery packs in space, due to the shortages such as the balance current small and the balance time long of the passive balance, a active equalization circuit based on the topology of the multi-winding transformer is proposed in the paper. The circuit can effectively improve the balance accuracy and speed of the high-voltage and high -power packs, increase the service life of the battery pack, and reduce the energy loss of the battery pack. A Simulink model was built for several typical active balance circuits. The simulation result of the proposed approach shows the superiority of the proposed topology. At last, a test bench is set up to verify the scheme. The experimental result prove the correctness and effectiveness of the scheme.