

DESIGN AND CONTROL OF NOVEL MULTI LEVEL BI-DIRECTIONAL GRID CONNECTED INVERTER

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ABSTRACT

The main aim of this paper is to Design and Control a Novel Multi Level bidirectional grid-connected inverter for the battery energy storage applications. The proposed grid connected bidirectional multi-level inverter consists of several bidirectional buck boost DC to DC converter and a DC to AC inverter. Advantages of the proposed Novel Multi Level bidirectional grid-connected inverter includes single stage power conversion, low DC bus voltage, pulsating charging and discharging battery currents and separate power control for every battery module. Therefore capacity extension of the battery energy storage system can be attained. It do not require input current sensor to control the power flow for the battery energy storage system. Output current ripple also reduced. To verify the effectiveness of the proposed Novel Multi Level bidirectional grid-connected inverter, hardware experimental results are shown.

KEYWORDS: *Multi Level Inverter (MLI), Discontinuous Conduction Mode (DCM), Battery Management System (BMS)*

Article History

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