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MODIFIED SINGLE PHASE H-BRIDGE MULTI-LEVEL INVERTER TOPOLOGY WITH SPWM TECHNIQUE FOR SOLAR-PV APPLICATION

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ABSTRACT

This paper presents a modified topology of single-phase cascaded H-Bridge multilevel inverter for stand-alone photo-voltaic system. The main objective of the research is to propose an alternative topology for H-Bridge multilevel inverter with reduced number of power devices. Proposed topology with SPWM control technique results in reduction of total harmonic distortion (THD) and electromagnetic interference generation The analysis of five, seven and nine level are also presented here with SPWM control scheme. The THD of five-level multilevel inverter is reduced to 3.31% which is much lower than the nine level of conventional MLI.

KEYWORDS: Cascaded H-Bridge Multilevel Inverter (CHB-MLI), Multilevel Inverter (MLI), MATLAB/Simulink, SPWM, SOLAR-PV, THD