Analysis of THD and Output Voltage for Seven Level Asymmetrical Cascaded H-Bridge Multilevel Inverter using LSCPWM Technique

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Authors:
Anuradha Singh
Mohit Jain
Suman Singh

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Abstract

In this paper, a seven level asymmetrical cascaded H-Bridge multilevel inverter in three phase configuration using different level-shifted carrier-based pulse width modulation techniques is discussed. Multilevel inverters have become more popular due to high voltage and high power output applications. Comparable to traditional PWM inverters, multilevel inverters are able to reduced switching losses, low harmonic distortion and high-voltage capability with low costs. This paper presents ACMLI using fixed frequency level-shifted carrier-based PWM technique for three phase squirrel cage induction motor as a load. In this topology, two H-Bridges with 8-IGBT switches are used for getting seven level output voltage for each phase leg. Simulation using MATLAB-SIMULINK is done to verify the performance of the ACMLI using LSCPWM techniques. Simulation results for this proposed scheme are shown in this paper.

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Index Terms

Computer Science Circuits And Systems

Keywords

Level shifted carrier-based PWM techniques (LSCPWM) MATLAB SIMULINK Total Harmonic Distortion (THD).