Abstract

A conventional inverter is used to convert DC power into AC power. But in a conventional two level inverter output voltage is of square or quasi square wave. Also because of that it contains a lot of THD. To eliminate the difficulties associated with the use of conventional inverter at high power applications, multilevel inverter is the best alternative. Multilevel inverter synthesizes the staircase output voltage waveform, which is approaching to sinusoidal waveform, with less distortion, less switching frequency, higher efficiency and low voltage devices. This project explains basic principle and most important topologies of multilevel inverter like diode clamped (neutral point clamped), capacitor clamped (flying capacitor) and cascaded inverters with separate DC sources.

Work presented in this project deals with simulation of different topologies of multilevel inverter. Particularly with a Sinusoidal Pulse Width Modulation Technique. This project presents simulations of all the topologies of multilevel inverter done in MATLAB and PSIM. After that it has been tried for prototype model with diode-clamped multilevel inverter topology. That will be tested on load.