



ChemTech

International Journal of ChemTech Research

CODEN (USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555
Vol.11 No.04, pp 136-144, 2018

A Boosted Voltage Single Phase Five Level Inverter With Reduced Switches

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Abstract : Multilevel inverters are in big demand for high voltage applications. It is capable of producing voltages with very less harmonics. The proposed multilevel inverter is used to generate voltage of five levels. For producing five level voltage, it needs very less no of switches so that control signal generation is simple in this inverter. Inductance and capacitances are used to boost up the input voltage of inverter. The presented multilevel inverter is constructed and simulated using power electronics tool box of Matlab/Simulink. The output voltage waveform is obtained for various reference waveforms like Sinusoidal, Third Harmonic Injection (THI), Stepped wave reference and Trapezoidal reference. The peak Value of output voltage, RMS value and THD for different references are tabulated and compared.

Keywords : Multilevel Inverter, THD, THI, Trapezoidal reference, Stepped wave reference, PWM

C.R.Balamurugan *et al* //International Journal of ChemTech Research, 2018,11(04): 136-144.

DOI : <http://dx.doi.org/10.20902/IJCTR.2018.110416>
