ABSTRACT

The inverter is a circuit that serves to convert the input voltage direct current (DC) to the output voltage of alternating current (AC) voltage and frequency is large can be set as desired. In the industrial applications, such as the inverter is widely used in ac motor speed control, industrial heating, or on the load with uninterrupted power supply. However, the inverter which many in the market today can not produce an AC signal with a sinusoidal waveform which is good if the load requires a large enough power supplied to the AC signal wave is not good then the risk may damage the device.

In this thesis have been designed and implemented a phase inverter circuit that generates an AC signal with a sinusoidal waveform. This inverter is used in the design of software Multisim11. Realization of the inverter device with DC input voltage of 12 volts which is implemented using the method in which the switching transistor as a switch mounted in H-Bridge and to switch the transistor is used technique SPWM (Sinusoidal Pulse-Width Modulation) to generate the AC voltage.

From the results of the design and implementation of the inverter is performed, the simulation of the signal obtained with a sinusoidal wave-shaped AC voltage of 49.73 Vrms after using a transformer, while the realization of the AC voltage generated tool for 9.57 Vrms before using a transformer. In the realization of the tool is not used because the voltage AC transformer produced quite low.

Keyword: Inverter, SPWM