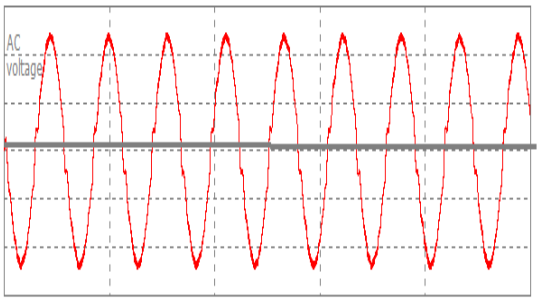

Figure 8: Output wave from H-Bridge

This pulsated dc wave is given to the H Bridge inverter as shown in the Fig (8). The output from the dc to dc converter is fed to the H Bridge which is cosists of four Mosfets.

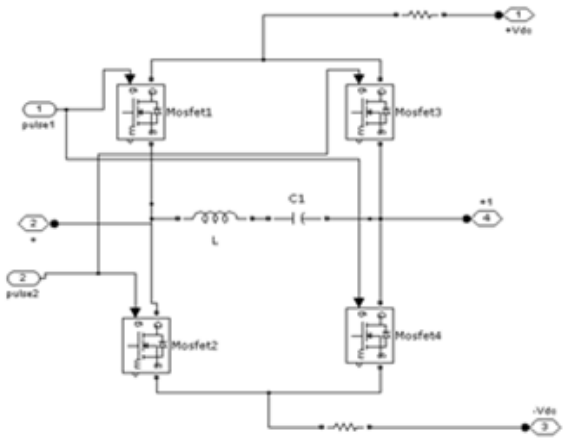

Figure 9: H-Bridge schematic diagram

The implementation of this circuit is done. The system Parameters of the circuit to generate triangular wave from integrated circuit logic inverter 74hc14 are in table (1).

Table 1: System parameters

Power frequency	Capacitance	Resistance
60Hz	.1uf	200 ohms
50Hz	.1uf	176 ohms

The proposed design of the inverter is implemented using boost converter and PWM generator .The input voltage is varied from 1Vto 30V. The output voltage is varied from 85 to 105V (lower rated devices used for implementation, XL6009 voltage regulator) with corresponding input voltage. The circuit working is examined are in table (2).

Figure 9: Experimental setup

4. Results

It is implemented and validated the proposed design of circuit .The summary of results are given in table (2).

Table 2: Summary of results

S No	Vin(V)	V out(V)
1	1	0
2	2	45
3	3	67
4	4	96
5	5	105
6	6	105
7	12	105

In this case the proposed design of the inverter circuits acts as a boost inverter since the reference triangular wave is set to maximum, so that voltage is constant. The implemented inverter acts as boost inverter converting 10 volts to 105 volts. It is observed that the output voltage is remains same when further increase in input voltage from 5V.

5. Conclusion

From the results it is seen that designed boost single phase voltage inverter works well producing an ac wave outputs depending upon the reference signal. From the summary table it can be summarized that proposed design of the inverter circuit operates for wide voltage range of the dc input voltage producing a sinusoidal ac voltage 50Hz.

The proposed design uses only five switches, the low switching frequency of the output H-bridge reduces the inverter switching losses and cost compared to multilevel inverters.

The drawbacks of the inverter, compared to traditional H Bridge inverters are relatively high cost (switches) and relatively high switching losses in one of the five switches.

6. Scope of Future Work

The present trend of research, the cost of photovoltaic cells is expected to go down in future. This design of inverter under consideration is capable of minimizing the no of components and design portable, thus occupying less space reducing the size of the equipment. This design can be extended by using suitable inductor coils and switching circuitry.

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