ABSTRACT

Todays, many people start to develop the power plant with renewable energy and very enviromentally friendly. Hydropower, sollar cells, and windpower are some example of that. That power plant is quite practical and not only PLN that must build it. But most of that power plan still produce the DC output. In order to be utilized in everyday life, it is necessary to convert the DC source to the AC source. So, in this thesis designed a modul to convert the DC source into 3 phase AC source which is typically known as 3 phase inverter.

In this thesis, three-phase inverter is designed with the pulse width modulation (PWM) method. Pwm signal which is generated by the microcontroller ATMega 8535 will be amplified by transistor 2n222A to switch the transistor 2n3055 in the six-step inverter circuit. Pwm frequency set to 50Hz so that the output of inverter equal to PLN source. In the final step, the output of inverter would be amplified by the three phase transformator 220 V 2A.

In the testing step, we can calculate the phase difference of each output is 108 degrees. Inverter output without the transformer was tested with a resistor ranging from 220 Ω to 220 KΩ as load. It Can be concluded that inverter works well with almost no voltage drop. A test with 9 watt lamp showed that inverter not works optimal yet.

Key Words : Inverter, 3 Phase AC source, PWM, *Six-step* inverter