

## ABSTRACT

DC motor is a device that converts electrical energy into movement energy, it is supplied by DC volt. The rotation speed can be controlled by changing the voltage and the current value going into the motor. One way to control the DC motor speed is by using DC to DC converter, so that will produced various speed depend on the input voltage. A DC motor with a certain capacity of 200 volt 9 ampere, has a big torsion power with a rotation power up to 3000 Rpm. This kind of motor can be applied to a big torsion drilling machine, turbine activator system, conveyor, and etc.

Motor speed controller system is controlled with a driver motor, so that makes the controlling speed less complicated. The function of this motor driver is as a DC to DC converter, so that with the input voltage range of 0-5 volt DC, DC motor speed with a certain capacity of 200 volt can be controlled with a suitable comparison.

Voltage controlled Pulse width Modulation (PWM) technique functions is as a DC to DC converter. With this technique will be designed a DC motor driver which can control motor speed, do some speeding up or deceleration as we wish for, and a motor speed stability by changing existing DC voltage. PWM technique will be planted on a microcontroller and hoped for the output voltage can represent the motor speed value. In this final project has been designed and implemented a DC to DC converter for DC motor driver with specification 160V 1.5A that can be used on DC motors with a certain capacity of 200V 9A with PWM method.

*Key Words: DC to DC converter, DC motor driver, Pulse Width Modulation*