

## ABSTRACT

*Currently, the development of science and technology is very advanced. In technology, the control system is absolutely essential. Students requiring learning instrument such as electro simulators or props that help to illustrate the working of the control systems. So it's not just theory with mathematical modeling but also get to see the real system when studying the control system is primarily about the control of PID.*

*One way of helping learning PID control system with practice the system directly. The practical meaning of control with PID in analog systems. The design of these props wearing the Arduino UNO as the microcontroller and the DC Motor actuator as 775. DC motor control in kecepatanya will be through the Rotary Encoder sensor is reading the speed of the motor. After the speed read the Arduino will send information in the form of analog signal to the DAC is then converted into analog signals and will be compared in the comparator. If when compared to a similar nilanya error means in controlling the speed of the motor is relatively small. The props are made are expected be able to adjust the speed of the Motor with low error values.*

*This final task just design a series of analog PID only. After testing it can be seen that the  $K_p$  the greater cause a faster response. Whereas the granting of  $K_d$  can reduce oscillations on the response, and  $K_i$  used to minimize error.*

*Keywords: Analog PID, Motor DC*