

## ABSTRACT

*This Script has a purpose to control DC motor with fuzzy logic system on turntable. Now turntable speed setting only focusing on the gear ratio only, because that the author uses fuzzy logic to control DC motor speed on the turntable. Fuzzy logic system is modern control system and easy to use but still effective to make a good response system.*

*In this script make fuzzy logic system to control DC motor rotation. This system has membership function for input and output, motor driver basically use PWM (Pulse Width Modulation) method. Settling point input will be give and process by microcontroller. DC motor speed will be censored with encoder as feedback.*

*System examination doing with different mass and diameter of records. The average from three times experiment of unit step response such as rise time ( $t_r$ ):  $30\ \mu s$ , peak time ( $t_p$ ):  $60\ \mu s$ , delay time ( $t_d$ ):  $120\ \mu s$  and settling time ( $t_s$ ):  $200\ \mu s$ . With the results obtained conclude that the system is made stable, there is has high over-shoot but can be reduced rapidly with time average between 60 microseconds.*

**Keywords:** *Fuzzy logic, Turntable, PWM (Pulse Width Modulation), rise time ( $t_r$ ), maximum overshoot ( $M_p$ ), peak time ( $t_p$ ), delay time ( $t_d$ ), settling time ( $t_s$ ), encoder*