ABSTRACT

Two-wheel motorcycle is one of the most vital means of transportation, because by owning and using a two-wheeled motorcycle can support the needs of human activities. In addition, two-wheeled motorcycle is easier and more practical than other means of transportation. Motorcycles have disadvantages that impact on the environment such as on plants, air pollution and noise in the rider dense areas. With the development of electric motorcycles can reduce pollution or emissions on earth.

In this Final Project is made controlling one-wheeled motor vehicle using accelerometer and gyroscope sensors to detect angles on vehicles and motor Brushless DC as the driving of the vehicle. Electric motor vehicle one wheel consists of 3 controls that is forward control using fuzzy logic controller method, reverse control using PID method and braking control.

One-wheel motor vehicle can move by leaning forward, by leaning forward in the vehicle can move as the angle change is read by the sensor. In this final project is used fuzzy logic controller with pulse width modulation output parameter from 90 to 110 and parameter of PID used is Kp = 1, Ki = 0, and Kd = 9 with no overshoot and rise time 0.05 seconds.

***Keywords**: Control System, Accelerometer, Gyroscope, Brushless DC Motor, Forward Control, Reverse Control, Braking Control, Fuzzy Logic Controller, PID.*