

## ABSTRACT

At this time two-wheeled motorcycle LEDs must be switched on night and day conditions in accordance with applicable traffic regulations of the Police of the Republic of Indonesia. This causes power wastage, so it is necessary to design the control system based LED Microcontroller using Arduino UNO.

In the prototype design using the front body of Honda Vario motor, then peyangganya use iron as a steer controller and using a potentiometer set by the microcontroller system. In the LED control system circuit, the LDR sensor affects the intensity of the light at the rotation angle of the potentiometer connected to the steer. If the weather conditions are bright then the two LEDs are dim, and vice versa. In addition, when steering steering both LEDs are on. Except when steering steering turns right, LED to the left is dim and then LED right flashed and when steer steer turn left, LED left flame then LED right side dim.

The results of the Final Project LED control based on the brightness of the environment and the direction of the vehicle, able to control the beam of light from an adaptive LED based on the brightness of the environment and the direction of the vehicle speed automatically by applying PWM (Pulse Width Modulation), so that the LED control of this vehicle can reduce the voltage 22% and reduce electricity power by 78%.

**Keywords:** LED, LDR Sensor, Potentiometer, PWM, Arduino UNO