

## Abstract

Controlling system in mobile robots have developed rapidly these days. Manufacturers are currently competing by creating high-end controlling system technology in mobile robots and improving its capabilities. The easier the mobile robots to be controlled, the better. On the other hand, security systems are developing as well and mainly applied in mobile robots.

Controlling system is wide. Fuzzy logic or the application of control through fuzzy logic could give complex perspective, even approaching human decision making system, which would be very beneficial if it is applied to speed controlling system. Fuzzy logic concept will be applied to mobile robot using DC motor which is the motor of the robot itself, which use Pulse Width Modulation configuration by managing reference voltage using the motor's duty cycle.

Fuzzy Logic that implemented in mobile robots are classified into 5, which is very fast with a speed of 0,833 m / s, fast with a speed of 0.654 m / s, normally with a speed of 0.533 m / s, slower with a speed of 0.328 m / s, and very slow with speed of 0.255 m / s. While the slowdown mobile robot from 5cm to 20cm toward assuming the initial velocity of 0.533 m / s are at  $-0.93895 \text{ m / s}^2$ .

Key Word: *Fuzzy Logic, Pulse Width Modulation PWM, Mobile Robot, Motor DC*