

ABSTRACT

Mobile robot is a robot that has characteristic of the actuator which using wheels to move the robot body, so the robot can make the shift position from one point to another. Mobile robot type is the most popular in world of robotics research. In terms of benefits, the robot is expected to help humans in automation in the transportation, moving platform for industrial robots, unmanned exploration and many more.

Many robots with control techniques that has been implanted in robots, and have been applied and used in various places such as military, industrial, mining, underwater exploration and even outer space. Therefore, the mobile robot with precision control techniques expected to be useful to help the humans works, especially in industrial field.

One of technique controlling the robot speed is used fuzzy logic method. The selection of fuzzy logic method because many problems fuzziness in the determination of robot position and speed setting in all condition, also many of possibilities condition that occur on a robot track. The implementation of this project, a mobile robot designed to be able to follow a moving object, the robot is moving behind the object and maintaining the distance between the robot and object that followed. From the result of design and implementation of moving object follower mobile robot with fuzzy logic control, it was found that the system is running stable. It can be seen from the performance value that not changes so much in each experiment. The Delay Time (t_d) of three experiments have the same value that is 414,4 ms, the biggest difference in value of Rising Time (t_r) is 29,6 ms. The biggest difference in value of Peak Time (t_p) is 29,6 ms, the biggest difference in value of Steady State Time (t_s) is 29,6 ms. And the Maximum Overshoot (m_p) from three trials had the biggest difference value is 0.54 cm.

Keywords: *robot follower of objects, Fuzzy Logic, ultrasonic, microcontroller*