ABSTRACT

Fire disaster is often happen and caused dead victims and property losses. There are risks that must be borne by the team of firefighters when extinguish flames in a building like a falling object that fall from the roof of the building or the fire getting bigger.

In this final project fire fighting robot using hexapod robot is realized and taking the example of a fire simulation in the field of The Indonesian Intelligent Robot Contest. This robot is designed using four types of sensors, ultrasonic sensors for distance detection, UV sensor and to detect if there are fire in the room on maze, TPA81 to detect the position fire in the room and line sensors to distinguish between the hallway and the room in the field KRCI. Robot navigation system is designed based fuzzy logic method for the application of wall following algorithms to reach the room where the fire is located.

The result from the design of controllers using fuzzy logic method is gaining good mobility of robot that scour in the room to find the flame, extinguish it and return to home. Based on testing, the robot’s ability in executing fire fighting missions made a success rate of 75%.

Keywords: ultrasonic sensor, firefighting robot, wall following, fuzzy logic.