

## ABSTRACT

Omni wheel is a kind of wheel type which has a different mechanical design from conventional wheels. The function of the omni wheels is it can make a robot move with unusual directions.

Robot with omni wheels is a robot which use omni wheels as their motion system. Omni wheel has been used for many years in the world of industrial robots and logistics. The main source of most users omni wheel is a company that produces for conveyor systems, such as for handling packages / items. Omni wheel is mostly applied to the robots omni. An omni robot can move straight from point A to point B also rotates in order to arrive at its destination. Omni wheel is also used for wheelchairs, service vehicles at airports and others. Omni wheels can move forward and sideways without changing the position of the wheels. That is what makes a robot with omni-wheels is superior if it compared with a robot which use conventional wheels.

In the thesis, the author makes a robot with 4-wheel omni. Fuzzy logic functioned to process the 2 variables as input from analog joystick. Thus expected the robot can move to every direction and change the direction of motion easily and quickly. And after performing various tests, the robot successfully performed its way to 16 ways even more.

Keywords: omni *wheels*, *Joystick*, *Fuzzy logic*.