ABSTRACT

Balancing robot is the based on the concept of inverted pendulum.

Balancing robot is a mobile robot that has two wheels that will not be able to run

balanced without the existence of a precisely adjusted control system. In case to

make robot balancing balanced we need a control method that is adjusted precisely

so that the robot can balance itself without any external force.

This research will be designed a balancing robot with the PID method with

accelerometer and gyroscope sensors and equipped with a wireless WIFI controller

to control the instrument. The goal is that the robot can be controlled from a safe

distance by the user.

At 1 degrees setpoint with the setting Kp=12, Ki=0.001 Kd=0.24 with an

average response time of 2 seconds The robot can manage to maintain its balance

and receive good quality motion control input from the user with an optimum

distance of 10-30 meters

Keywords: balancing robot, accelerometer, gyroscope, PID.

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