

ABSTRACT

Soil Moisture Control Design Using Arduino Application. Guidance was given by Mr. Hary Nugroho as the first supervisor and Mr. Muhammad Royhan as the second supervisor. The concept applied here uses technological intelligence to control plant conditions, soil moisture levels and humidity temperatures around plants. The purpose of this design is to make automatic plant watering using several tools, namely soil moisture sensors, Arduino UNO microcontrollers, DHT11, LCD I2c, relays, and water pumps. Another goal of this design is to study the simulation of soil moisture control applications and temperature humidity measurements using Arduino UNO and using technological intelligence to manage and care for plants. Another goal of this design is to be used in the next design. The test results of the tool use a microcontroller as control, soil moisture sensor and temperature sensor as input, and LCD and relay as output. The soil moisture value on the LCD screen is shown in the research results. When soil moisture is less than 20% it is considered dry soil, and when moisture is more than 20% it is considered wet. When dry soil is detected, the automatic plant sprinkler will work.

Keyword : Microcontroller, Soil Moisture, Temperature, Automatic Watering