

**PORTABLE SMART RELAY CONTROL AND MONITORING SYSTEM FOR
GREENHOUSE BASED ON INTERNET OF THINGS (IoT)**

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ABSTRACT

The increasingly rapid development of technology and science has given birth to the world of Industrial Revolution 4.0 which prioritizes communication between devices via the Internet and widespread use of data. The Internet of Things (IoT) is one of the key elements driving this revolution. The existence of IoT is very useful in various fields of life, including agriculture. For example, farming in a greenhouse, the use of this technology can help farmers in maintaining plants, such as controlling or monitoring temperature, humidity and light intensity remotely using a smartphone application in the Greenhouse automatically and in real time. This system uses a microcontroller as the control center for the sensors used and relays as the main output. The DHT22 sensor, which is a temperature and humidity sensor, will send data to the microcontroller which will be processed and give commands to the relay whose output can be a fan and water pump to turn on the sprayer. With this system, it will be easier for farmers to care for their plants so that they grow optimally.

Keywords: *Greenhouse, Internet of Things, system control and monitoring, microcontroller, smartphone application, relay.*