

ABSTRAK

RANCANG BANGUN SISTEM MONITORING KELEMBAPAN RUANGAN DAN KONTROL GORDEN JENDELA MENGGUNAKAN NODEMCU ESP8266

Oleh

Muhammad Daffa Khanifadin

Pemanfaatan teknologi otomatisasi dan kontrol memberikan fungsi yang canggih, salah satunya adalah pengaplikasiannya pada media tirai dan pengukuran kelembaban ruangan yang ada di rumah. Dimasa pandemik covid saat ini, disaat pemerintah menyarankan untuk banyak melakukan aktivitas dari rumah, seperti bekerja dari rumah (*Work From Home*), sekolah online (*Study From Home*) dan aktivitas lainnya. penerapan teknologi sistem otomatis dan kontrol pada beberapa interior rumah sangat dibutuhkan, hal tersebut dapat membantu mengatasi masalah seperti kurangnya ruangan di dalam rumah yang terkena cahaya matahari, kurangnya sirkulasi atau bahkan kelembapan akibat pendingin ruangan. Gorden apabila di buka dan ditutup diwaktu dan keadaan yang tepat, membuat cahaya dan panas dapat masuk sehingga bisa membantu mengendalikan keadaan kelembapan ruangan yang baik yakni diantara 40% – 60%. apabila berada diluar persentase tersebut dapat menyebabkan gangguan kesehatan dan kerugian antara lain, penyakit kulit misalnya iritasi, kudis dan kurap, selain itu bisa juga menyebabkan iritasi mata bahkan gangguan pernapasan, dinding berjamur, alat-alat elektronik seperti kamera bisa berjamur pada lensa dan masih banyak lagi. Berdasarkan permasalahan tersebut, dibutuhkan sebuah alat berupa sistem memonitoring kondisi kelembapan ruangan dan pengontrolan gorden, penulis dengan memanfaatkan teknologi modul NodeMCU ESP8266 sebagai sistem kendali, Motor DC sebagai penggerak gorden dan sensor kelembapan ruangan. Berdasarkan hasil penelitian yang telah dilakukan di dalam pengujian keseluruhan kontrol gorden dan monitoring kelembapan ruangan bekerja dengan baik. Ketika data sensor berada di luar kelembapan 45 – 65 % maka gorden akan menyesuaikan secara otomatis baik membuka atau menutup sesuai dengan kebutuhan ruangan, dan fungsi kendali baik buka, tutup, serta *timer* berjalan dengan baik saat di berikan perintah melalui gawai *smartphone*.

Kata Kunci : Monitoring, Gorden, Kelembapan, NodeMcu, DHT11 dan Motor DC.

ABSTRACT

THE DESIGN OF ROOM HUMIDITY MONITORING SYSTEM AND WINDOW CURTAINS CONTROL USING NODEMCU ESP8266

**By
Muhammad Daffa Khanifadin**

The use of automation and control technology provides sophisticated functions, one of which is its application to curtain media and measuring humidity in the room at home. During the current covid pandemic, when the government recommended doing a lot of activities from home, such as working from home, online school (Study From Home) and other activities. the application of automatic system technology and control in some home interiors was needed, it helped overcome problems such as the lack of room in the house that was exposed to sunlight, lack of circulation or even humidity due to air conditioning. Curtains when opened and closed at the right time and condition, allow light and heat to enter so that they can help control the humidity of the room, which is between 40% - 60%. if it is outside this percentage it can cause health problems and losses, among others, skin diseases such as irritation, scabies and ringworm, besides that it can also cause eye irritation and even respiratory problems, moldy walls, electronic devices such as cameras can mold on the lenses and many more. again. Based on these problems, a device is needed in the form of a system for monitoring room humidity conditions and controlling curtains, the author uses the NodeMCU ESP8266 module technology as a control system, DC motor as a driving force for curtains and room humidity sensors. Based on the result of research that was carried out in testing the overall control of the curtains and monitoring the humidity of the room worked well. When the sensor data was outside of 45 – 65% humidity, the curtains adjusted automatically, either opening or closing according to the needs of the room, and the control functions for opening, closing, and timers worked well when given a command via a smartphone.

Keywords: Monitoring, Curtains, Humidity, NodeMcu, DHT11, DC Motor