

## **ABSTRACT**

*Coffee is one of the main commodities that plays an important role in the global economy, including in Indonesia. The moisture content in coffee beans is a crucial parameter affecting the quality and stability of the beans. Excessive moisture content can cause the coffee beans to become soft and easily broken, while too low moisture content can make the beans brittle and cracked. This study involves an in-depth analysis of the system requirements and hardware design necessary to ensure effective monitoring of the moisture content in coffee beans using a Soil Moisture YL-69 sensor that detects the beans' moisture levels. The moisture content data of the coffee beans, obtained from the Soil Moisture YL-69 sensor, is processed through the ESP32 microcontroller with programming that integrates the Soil Moisture YL-69 sensor with the Blynk platform. The data obtained by the Soil Moisture YL-69 sensor is analog data displayed on the Blynk dashboard through the Virtual Pin program. The moisture content values of the coffee beans are displayed on Virtual Pin 0 of the Blynk dashboard, while the voltage values are displayed on Virtual Pin 1. During sensor testing on coffee beans, when moisture is detected, the voltage decreases from its maximum value. At 0% moisture content, the voltage value is 3.30V, which is the maximum voltage. If at any time the sensor detects a moisture content of 50%, the output voltage displayed will be approximately half of its maximum value, which is around 1.65V. Therefore, lower voltage values indicate the presence of moisture in the coffee beans, while maximum voltage values indicate a lack of moisture or dryness.*

**Keywords:** *IoT (Internet of Things), YL-69 Moisture Sensor, ESP32 Microcontroller, Blynk Platform, Prototype Moisture Meter.*