

# MEASUREMENT OF WATER CONTENT OF COFFEE BEANS BASED ON THE MIT INVENTOR APPLICATION

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## ABSTRACT

This research aims to design a coffee bean moisture content measuring device using a capacitive soil moisture sensor based on the ESP32. Measuring the moisture content of coffee beans is crucial in the processing and storage stages, as the appropriate moisture level can significantly affect the quality and shelf life of the coffee beans. The designed system utilizes a capacitive soil moisture sensor to detect the moisture level of the coffee beans, which is then processed by the ESP32 microcontroller. The measurement data is displayed in real-time on an LCD screen and can be monitored wirelessly via a mobile or web application. The design of this device involves several key components: a capacitive soil moisture sensor, an ESP32 microcontroller, bluetooth module, and an LCD screen. The capacitive soil moisture sensor measures the moisture content of the coffee beans by detecting changes in capacitance caused by the moisture level. The ESP32 microcontroller processes the sensor data and sends it to the bluetooth module for remote monitoring purposes. The measurement data is also displayed on an LCD screen for easy on-site monitoring. This system is designed to be user-friendly and provides accurate and quick results. Testing results indicate that the coffee bean moisture content measuring device based on the ESP32 has high accuracy and a fast response time.

**Keywords:** Moisture Content Measuring Device, Coffee Beans, Capacitive Sensor, ESP32, Iot, Humidity, Real-Time Monitoring

