

## ABSTRACT

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*Nutritional needs when planting with hydroponics methods should always be maintained, both from water quality, temperature and nutrient circulation, so that the plant can grow well. This research aims to know the advantages of the NFT hydroponic automation system from measuring water nutrient quality to a temperature in a room based on an Arduino microcontroller. This tool consists of three subsystems namely sensor systems, processing systems, and communication systems. The sensor system consists of a water velocity sensor (Waterflow), pH sensor, TDS sensor and DHT 22. The processing system is a system to process the signals obtained from the sensor system in which the communication system transmits information processed by the processing system to the LCD display. The system also uses an alternative energy source that aims to measure the potential of solar energy as renewable energy. The results showed that the overall testing of nutrient mixing using the pump can work according to the program, subsequent to the monitoring of water discharge sensors, pH sensors, temperature and humidity sensors can be read properly. Solar energy sources can be a solution as an alternative energy when the main energy source is in trouble.*

*Keywords: Hydroponic NFT, Automation System, Arduino, Renewable Energy, Waterflow sensor, pH sensor, TDS sensor, DHT22 sensor*