

ABSTRACT

Waste is a very serious problem for life. If waste is continuously disposed of it will cause damage to the surrounding environment. Especially in the quality of water that is polluted by waste, which is a problem for humans, because water is needed for human life. Humans need water not only in quantity but also in quality. To meet water quality, there are many parameters that must be looked at, one of the water quality parameters that needs to be monitored is TDS (Total Dissolved Solid).

In this study, an Arduino-based Total Dissolved Solid meter was made and measured by means of real time, So that it is useful to know the quality of water used daily. This measuring instrument measures the value of Total Dissolved Solid and temperature using two electrodes, which are referred to as probes as the Total Dissolved Solid sensor with certain dimensions and distance and the DS12B20 temperature sensor. The probe will be immersed in 50 ml of sample water at the time of measurement, and will form a closed electrical circuit with a voltage source and resistance. The voltage source flows to the probe and generates a potential difference, the results are processed by Arduino as a microcontroller to determine the Total Dissolved Solid value, the Total Dissolved Solid value data will be displayed on the serial monitor and also sent to NodeMCU, from NodeMCU the Total Dissolved Solid value will be sent to the Antares platform . Antares is useful as a data storage platform for the Total Dissolved Solid measurement tool.

The Total Dissolved Solid measuring instrument can already be used to measure Total Dissolved Solid in textile-colored wastewater with an amount of 50 ml, using 3 different types of probes as sensor variations. The output voltage on the sensor will stabilize after 40 seconds when the sensor measures the sample. The Total Dissolved Solid measuring instrument can display values sequentially real time, and measurement accuracy is better than the standard TDS-3 tool, with an error of probe 1 3.68%, probe 2 4.42%, probe 3 3.73%, and tool TDS-3 9.23%. The TDS measurement tool can store TDS value measurement data on the Antares platform.

Keywords:Sensor Total Dissolved Solid, Arduino, Textile Waste