

## **ABSTRACT**

In 2045 Indonesia will experience a demographic bonus, about 180 million people are in productive age, so it is necessary to prepare quality human resources. One of the factors of quality human resources is the quality of health that can be influenced by the quality of drinking water because at least 80% of the human body consists of fluids. Mineral water that is suitable for consumption can be seen from the content of TDS (Total Dissolved Solid) in the water. The maximum TDS value according to the Indonesian Ministry of Health Regulation number 492 of 2010 is 500 mg / liter or 500 ppm. Internet Of Things (IoT) is an information exchange technology, which provides not only People To Machine communication but also Machine-To-Machine (M2M). In Indonesia, there are variants of tools for processing mineral water into alkaline water, but the price is still not affordable for the general public and has not used IoT technology.

Therefore, the development and design of an IoT Water Ionizer (IWI) tool with a compact design and affordable price that can produce electrolyzed mineral water, which produces alkaline water containing hydrogen and acidic water that can be utilized.

The design of the IWI tool uses funds of Rp.812,100 in which there is IoT technology with three sensors, namely the current sensor, temperature sensor and TDS sensor. For the current sensor on the tool has an average value of 0.64A. The temperature sensor has a constant increase during 66 minutes of electrolysis, the initial temperature value of 25.56 ° C becomes 30 ° C. when the temperature is 30 ° C the electrolysis stops, because the system detects a temperature value of 30 ° C. For the TDS sensor, the TDS value increases from the beginning of electrolysis to completion. So, it can be concluded that our tool is successful because it can meet the specifications well from an affordable price as well as the needs of IoT to facilitate users to have a small error so that the data generated is accurate.

**Keywords: electrolysis, internet of things, sensor, total dissolved solid**