

ABSTRACT

Alkaline water or water with a high pH can help overcome various health problems, such as blood pressure disease, heart disease, gout, etc. Replacing mineral water with alkaline water as drinking water is said to help slow down the aging process in the body. Replacing mineral water with alkaline water as drinking water is said to help slow down the aging process in the body. Alkaline water is water that has a pH value higher than 8.5. However, alkaline water is sold in the market at a very expensive price, making it very difficult for people to buy and produce alkaline water.

The proposed system solution is a portable water ionizer device that uses a simple electrolysis process to produce alkaline water. This device is equipped with a TDS and pH water measurement feature, as well as notifications connected to the user's mobile phone. By using a lithium-ion battery as a power supply, this device can be used portably. Through integration with IoT technology, users can monitor and control the electrolysis process and obtain information on alkaline water quality. This solution provides easy and affordable access to alkaline water, so that people can produce alkaline water independently for health purposes.

Based on the experiment results, the device produces water in the cathode section with a pH value of 8.5 and TDS of 72 ppm, and water in the anode section has a pH value of 6.8 and TDS of 61 ppm. The device proved to be portable after 15 out of 22 respondents agreed that the device can be carried while traveling and the device can operate without an external power supply. The lithium-ion battery provides approximately 3 (three) hours of life, while connectivity with the Blynk app allows remote monitoring and control of the device using wifi connectivity. The information display is accurate with a percentage accuracy of 98.917% on the TDS sensor and 98.6032% on the pH sensor. The circuit breaker system is an important feature in the device to cut off power for the electrolysis process.

Keywords: Water ionizer, Alkaline water, Electrolysis, IoT, Electrode