

ABSTRACT

Electrolysis is a method used to decompose or change chemical compounds with an electric current that is passed through an electrode. For now, electrolysis equipment is already on the market, but the tool has several weaknesses, namely they are still produced abroad, are expensive, and have no application. The purpose of this research is to design an implementation related to platforms and systems that are automated in control or monitoring for electrolysis and to record data related to the state of the material.

The system uses an integration between applications with an electrolysis device. The electrolysis device has one cycle consisting of filling, electrolysis, and product discharge processes. The filling process's purpose is to fill the container used for electrolysis using a water pump. The electrolysis process is carried out using electrodes that have been connected to the power supply and the raw material's state will be monitored using pH, TDS, ultrasonic, and temperature sensors. The data from the monitoring process will be sent to the database. The discharge process will be ran using a solenoid valve. Monitoring and control processes will be ran using a website application connected to the firebase database and designed using the JavaScript programming language with the React Js library.

The test result shows that the 30 experiments conducted on electrolysis for 10 minutes resulted in a decrease of TDS value with an average of 19 ppm, a decrease of pH value on the anode side by 1.25, and an increase of the cathode PH by 0.87. In application usage test, we can conclude that the application can be used on all operating systems, and performance tests show that the application does not burden many devices used.

Keyword : electrolysis, Website Application, automation, IoT