ABSTRACT

Drinking water is a source of life, one of which can be consumed because mineral water is a very important nutritional element for the human body. Water suitable for consumption has standard water parameters, namely TDS ≤300 ppm and pH 6,5-8,5. Based on observations and results of water tests conducted, the water at Telkom University has poor water quality. It is known that the iron content contained in the water exceeds the maximum level, which is certainly not suitable for consumption, which allows the water around Telkom University to also have high quality. water is not good. The need to improve water quality around Telkom University is the background of this research.

Water ionizer is a tool that applies the electrolysis method which is capable of producing alkaline water which is good for consumption and aims to minimize iron levels in water. This water ionizer can certainly improve the quality of water at Telkom University and its surroundings, where in the electrolysis process the electrolyte is decomposed by an electric current which can change the pH, TDS (Total Dissolved Solids) and EC (Electrical Conductivity) values. The 4502C pH sensor and the SEN0244 TDS sensor are sensors used in the system to monitor and find out changes in water values.

The results of this study indicate that a monitoring system to minimize iron content in water using the electrolysis method was successfully implemented by making the TDS and EC values as approximations in the parameters measured for the value of iron content in water. In the research with the electrolysis process for 30 minutes, the most significant changes occurred in the water around Telkom University, namely the TDS value decreased from 302 to 265, EC from 605 to 530, and the pH value increased from 6,13 to 7,52. It can be concluded that the change in value is 37 ppm for the TDS value, while for the EC value it is 75 µS, and the pH changes by 1,39.

Keywords: water ionizer, electrolysis, iron content, pH 4502C module, TDS SEN0244 sensor module, Electrical Conductivity.

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