ABSTRACT

This thesis studies the design and construction of an automatic drinking water quality control device, which has the ability to be directly connected to the drinking water supply system in homes. Extensive market research is conducted for pre-existing devices of similar functionality, as well as research on the parameters that need to be considered. Some of the most important parameters that contribute to the maintenance of the water's suitability for consumption, such as temperature, turbidity, electrical conductivity, and pH, are examined with the use of sensors. The whole process takes place inside a model metal mold, into which potable water flows, through an electronic valve. After this, measurements are taken and then a second electronic valve rejects the test water. The information received from the sensors is processed in the Arduino Uno microprocessor where it is sent to the wifi module-esp8266. Then, esp8266 unit sends the data to the Firebase online platform, which has direct communication with a mobile application, built for the purpose of this thesis. The user can then read the data from the parameters that are being monitored through the purpose-built application and be informed of any dangerous parameter fluctuations. It is emphasized that the whole process takes place in real time and 3 monitoring cycles are scheduled per day, as a result of which the consumer can at any time check the quality of the drinking water of the last monitoring cycles. In conclusion, an evaluation of the functionality of this construction is carried out, as well as a reference on the benefits that someone gains by investing in it.

Keywords: Water, health, parameters, drinking water quality, monitoring device, sensors, mobile application