

ABSTRACT

Coronavirus disease 2019 (covid-19) which attacks every country makes the scarcity and high price of N95 masks. The function of the N95 mask or commonly called a respirator mask is one type of mask that has the function of filtering 95% of fine particles that are harmful to health. The purpose of this research is to make an ultraviolet sterilizer that is used to sterilize bacteria and viruses contained in masks. The contribution of this research is to utilize the radiation emitted by ultraviolet C light (short wavelength) to destroy bacteria or germs. This tool works with a time of 15 and 30 minutes taken from a journal that has conducted research on the effectiveness of ultraviolet radiation against bacteria. There is an automatic safety system when the appliance is turned on, the door on the appliance cannot be opened until the sterilization process is complete, because the radiation effect caused by ultraviolet light is very harmful to the eyes. The ATmega328 microcontroller is the main command control of this tool. The results of the time reading will be displayed on the I2C 20x4 LCD (liquid crystal display) by displaying the timer and hourmeter. Based on the results of the timer measurements with a 15 minute stopwatch comparison with an average of 0.188 and an error (% error) of 1.88%, while the 30 minute timer with an average of 0.158 and an error (% error) of 1.58%. And based on the results of the comparison of sampling for the types of bacteria staphylococcus aureus and pseudomonas spp, it shows that the total plate number of bacteria or germs contained on the mask before sterilization with examination results is 60 CFU and after sterilization <10 CFU shows no growth of bacterial colonies or germs.

Keywords : *ultraviolet lamp, light sensor, solenoid, limit switch, microcontroller ATmega328*

