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Covid Defence Robotic System

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ABSTRACT

The design depicted shows the protection which will be taken during the COVID-19 pandemic within the whole world. Sanitizers became the foremost significant commodities without delay. By the new rules and regulations were given by WHO vigorous sanitization is required to survive. The planning gave the answer for the matter stated. The planning introduces an autonomous robot that is used as a component of standard cleaning cycles and is extremely helpful for preventing and reducing the spread of infectious and harm full microorganisms by destroying their DNA structure with UV lights. With a wavelength of 222- or 254-nanometres, the robot kills bacteria and spreads infectious diseases publicly in places, like hospitals, office spaces, schools, airports, etc. UV Disinfection robot is intended to assist your cleaning staff on a daily basis while eliminating human error. The UV Disinfection robots have light bulbs that emit UV-c actinic radiation ready to destroy bacteria, viruses, and other harmful microbes.

KEYWORD : *Arduino, Calculate Distance, Spray pump, Ultraviolet led, Ultrasonic sensor.*

INTRODUCTION

Since December 2019 the globe is under tremendous tension, the numbers are increasing day by day, and to date, no vaccine has been fully proven against the pandemic agent. Yes, it**'s** COVID-19, it had been unknown to the race before it out broke in Wuhan, China. Being from a no ver sized family, a continual mutation is going on, forbidding the researchers, microbiologists, and pharmaceuticals to draw the road of conclusion on the vaccine. Affecting the foremost prestigious countries **i**n an exceedingly chain; China, Italy, Spain, USA, India, and Russia, [1] the virus has proved its strength and subservient to a technologically enhanced race. The race of homo-sapiens.

The policies taken worldwide have lessened its effect to some extent but couldn't eradicate it. Lockdown has economically weakened many nations, and testing of various medicines has also not proven to be satisfactory. The question now prevails is Life vs. Livelihood. The weaker section of the society is facing hardship because of vigorous lockdown across the nations. The starving faces reveal the pain. Industries are at a loss, workers are

losing jobs, and the economic process of the state has taken a back seat, but it should be realized that daily sanitizing of the infected or non-infected areas, on the surface can prevent the spread of the pandemic to the masses. Keeping in mind, matters worldwide, sanitization commodities should be installed in each and each corner of the sphere, be it an industry, a company office, an academic institute, or a shopping precinct. during this research work, an automatic hand sanitizer with a temperature sensing design prototype has been made.

LITERATURE REVIEW

1]A front-line assault on hospital-acquired infections: during this, we got the thought about how important to sanitize the hospital. Because the quantity of patients has come so that's why it's essential of unpolluted the hospitals time to time. So, from this, we've got that concept for spraying sanitizer which will help like today's corona situation. Where the human interface isn't, there we because it and sanitize all the hospital. Consider introducing disinfection robots into medical aid units and other high-infection-risk patient care areas but understand these technologies don't obviate the requirement for other infection control practices.

2]The Ultra Violet (UV) Disinfection Robot:-

In this paper, we extracted that the disinfection Robot that**'s** autonomous can help to figure in any condition. The Ultra Violet (UV)Disinfection Robot-also called UVDR -is an autonomous disinfection robot for hospitals, production lines, and pharmaceutical companies. The robot **is** intended as a supplement to the prevailing cleaning cycle with the aim of reducing the spread of Hospital Acquired Infections (HAIs), infectious diseases, viruses, bacteria, and other varieties of harmful organic microorganisms. The robot can drive autonomously while emitting concentrated V-C light onto pre-defined infection hotspots in inpatient rooms and other hospital environments, thus disinfecting and killing bacteria and viruses on all exposed surfaces. The robot has been tested at one of the most important hospitals in Denmark, and also the results showed that an exposure time of ten minutes can kill up to 99,9% of common bacteria found at hospitals.

METHODOLOGY

POWER SUPPLY UNIT CIRCUIT DIAGRAM OF+5V & +12V FULLWAVE REGULATED POWER SUPPLY

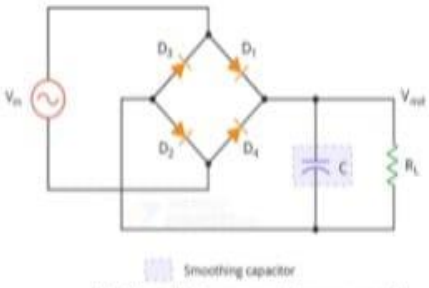


Fig Circuit Diagram of Power supply

Parts List:

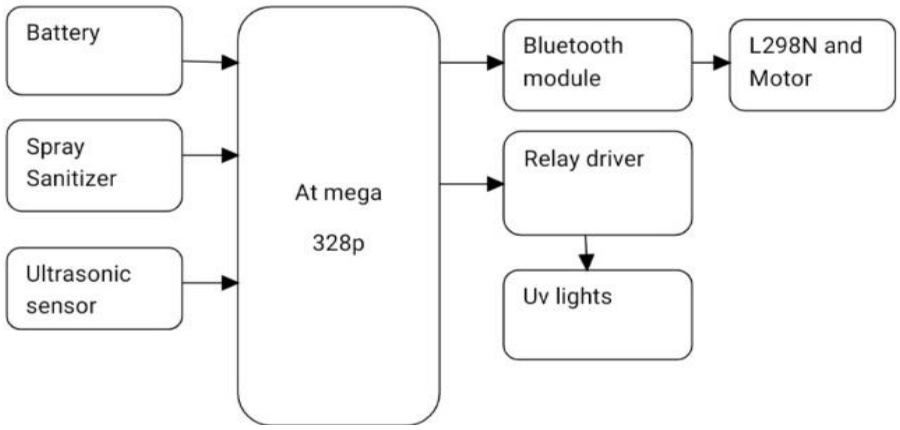
SEMICONDUCTORS

IC 1	7812 Regulator IC

IC2	7805 Regulator IC
D1&D2	1N4007 Rectifier Diodes
CAPACITORS	
C1	1000µf/25VElectrolytic
C2toC4	0.1µFCeramicDisctype
MISCELLANEOUS	
X1	230V AC Pri,14-0-14
	1 Amp Sec Transformer

The circuit needs two different voltages, +5V & +12V, to work. These dual voltages a resupplied by this specially designed power supply. The facility supply, the unsung hero of each electron circuit, plays a vital role in the smooth running of the connected circuit. the most objective of this 'power supply' is, as than me itself implies, to deliver the desired amount of stabilized and pure power to the circuit. Every typical power supply contains the subsequent sections:

BLOCK DIAGRAM:



Component:-

Arduino: -

Arduino consists of both a physical programmable board (often spoken as a microcontroller) and a bit of software, or IDE (integrated development environment) that runs on your computer, accustomed write and uploading coding **syst**em

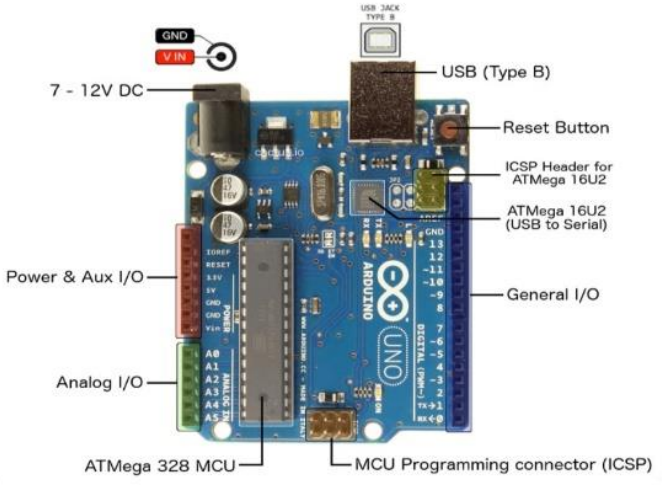


Fig.2:Arduino

L298N Dual H-Bridge Motor Driver: -

This dual bidirectional motor driver relies on the very talked-about L298Dual H-Bridge Motor Driver microcircuit. The circuit will allow you to simply and independently control two motors of up to 2A each in both directions

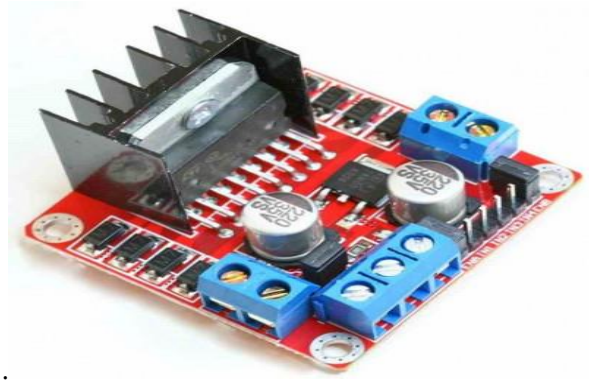


Fig3:L298N Dual H-Bridge Motor Driver

Ultrasonic Sensor: -

The sensor emits an ultrasound of 40,000hz and travels in the air when it hits an obstacle it's detected by the receiver and the time taken is taken because the base for calculating space

Fig.4:Ultrasonic sensor

Submersible Spray Pump: -

The pump is employedto spray the sanitizer on the surface after the sensors give the required signal.

Fig.5:Submersible spray pump

Motor: -

To control the rotation speed of a dc motor is to control its driving voltage.

Fig.6:Motor

UV LED: -

Ultraviolet Light(UV)is a disinfection method that uses short-wavelength ultraviolet(ultraviolet CorUV -C)light to kill or inactivate microorganisms by destroying nucleic acids and disrupting their DNA, leaving them unable to perform vital cellular functions. [1]UV is used in a variety of applications, such as food, air, and water purification.

Fig.7:UV LED

Bluetooth: -

HC-05 Specification:

- Bluetooth Protocol: Bluetooth Specification v2.0+EDR
- Frequency: 2.4GHz ISM band
- Modulation: GFSK(Gaussian Frequency Shift Keying)
- Emission power:<4dBm, class2
- Sensitivity: <-84dBm at 0.1% BER
- Speed: Asynchronous: 2.1Mbps(Max)/160kbps

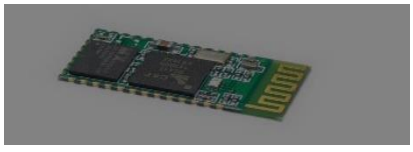
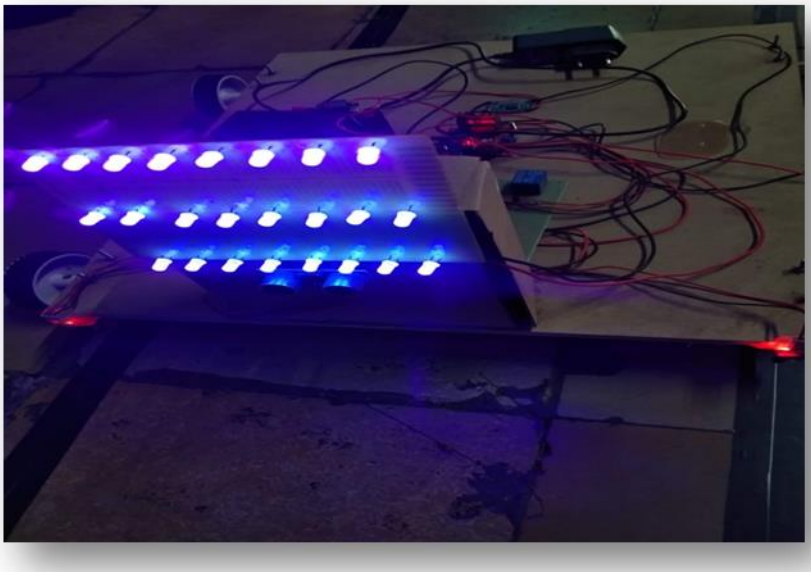


Fig.8:Bluetooth



Final Project

CONCLUSION

The UV Disinfection Robot in reducing HAIs, and provides a better hygiene standard for existing and future hospitals. The Disinfectant robot utilizes Ultraviolet light, contrary to traditional disinfection systems. The project, UV has proven technology for disinfecting air, water, and instruments for over a century. Microorganisms have less protection against UV and cannot survive prolonged exposure to it. There for, our robot can be used in certain environments like hospital ICUs or research labs where the. Environment would not be contained by exposure to Uv light.

REFERENCES

[1]Public Health Response to the Initiation and spread of Pandemic COVID-19 in the United States. February 24–April 21, 2020, Weekly/May 8, 2020/69(18);551–556On May 1, 2020, this report was posted online as an MMWR Early Release. Anne Schutte,MD;CDCCOVID-19Response Team.(https://www.cdc.gov/mmwr/volumes/69/wr/mm6918e2.htm)

[2]Working principle of Arduino Uno and using IT as a tool for study And research Leo Louis International Journal of Control, Automation, Communication and Systems(IJCACS),Vol.1,No.2, April 2016.

[3]Bipasa Roy Patra "Sustainable trends & Necessity of improving power quality for future smarter nation by smart grid", International journal of innovations in engineering and science, ISSN: 2456-3463, April 2018.