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**DEPARTMENT OF ELECTRONICS AND COMMUNICATION  
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**A MINOR PROJECT REPORT ON**

**UV Germicidal Robot**

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# UV Germicidal Robot

## **ABSTRACT**

The role of robots for cleaning and sanitation purposes is increasing worldwide. The global COVID-19 pandemic due to the novel coronavirus SARS-CoV-2 has challenged the availability of traditional surface disinfectants. These robots are increasingly advocated as a simple solution for the immediate disinfection of rooms and spaces of all surfaces in one process and as such they seem attractive to hospital management, also because of automation and apparent cost savings by reducing cleaning staff using Ultraviolet (UV) radiations. Many restaurants find it difficult to keep up with cleaning tables quickly and effectively during busy shifts. Cleanliness is especially important to mitigate the spread of diseases, such as the novel coronavirus (COVID-19). In this project the designed autonomous robot can emit UVC light that can kill pathogens such as COVID-19. It is more cost-effective since it can be used for multiple tables. A new infection prevention method and Ultraviolet (UV) disinfection robot is proposed for achieving maximum sterilization for hospital rooms. The proposed robot can kill microbes efficiently within a few minutes. The robot uses Ultraviolet (UV) rays which travel a few meters, disinfects the area to its proximity. This robot is highly efficient than humans and helps to disinfect the room and keep infections in control.

The aim of the present work is to contribute in the fight against the spread of Covid-19, a novel human coronavirus, in hospitals, public transport, airlines, and any enclosed areas. UVC Robot disinfects rooms and equipment with ultraviolet (UV) light, and shuts down when humans are around to keep them safe.

Ultrasonic sensor and Passive Infrared (PIR) sensor helped to achieve the objective of the design by killing harmful pathogens, microorganisms, by detecting obstacles to avoid collision and by detecting the presence of human or animal, so the robot operates when people are not around and turns off the UVC light respectively.

To get optimal accuracy, the model is designed with the three ultrasonic sensors instead of designing with one ultrasonic sensor and with Passive Infrared (PIR) sensor. By this the designed robot can kill 99.999% bacteria and various microorganisms through UVC led.

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