

VOICE CONTROLLED DISINFECTION ROBOT

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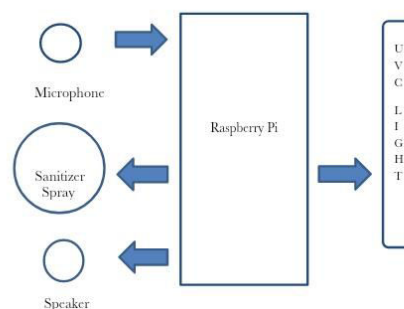
Abstract - This In this year because of coronavirus, 965,065+ people died. As COVID-19 spreads across the world, there is very high risk to be affecting by corona virus in public place, such as hospitals, Railway stations, Bus stops. To stop this spreading we need to disinfect the public place To minimize the risk Disinfection robot can help us, it can kill up to 99.99% Germs and virus. We are designing a computer based voice controlled disinfection robot. For this we are using UVC light, Sanitizer spray and Camera. UVC light kills up to 99.99% germs and disinfect area. This disinfection robot is based on computer, we can control it by voice command. When we give command the robot is able to move in all directions. To disinfect area we have used UVC lights and sanitizer spray which kill germs. Camera used to detect is people wearing face mask or not. UV disinfection and sterilization robot kills germs in the environment by decomposing their DNA structures, thus preventing and reducing the spread of viruses, bacteria and other harmful microorganisms.

Key Words: Voice, Disinfect, Robot, Virus, UV, Sanitize

1. INTRODUCTION

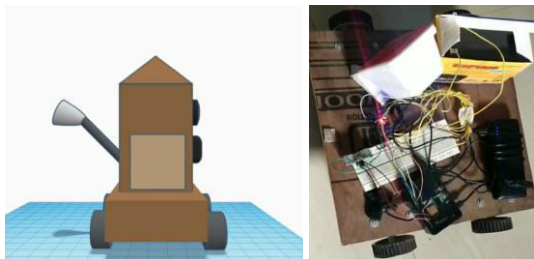
Voice controlled disinfection UVC Robot is an indoor intelligent and autonomous robot designed for indoor virus prevention. It is equipped with UVC light technology that allows it to navigate autonomously, produce short-wave UVC light and automatically sprays disinfectant in indoor space. Already used by many organizations, this UVC is one of the best robotic solution to fight against the current threat of COVID-19. At each visit hospitals or clinical centers we try to leave everything, if possible. This is because of the danger of new bacteria is high. It is mostly MRSA (methicillin-resistant *Staphylococcus aureus*), *C. diff.* (*Clostridium difficile*), VRE (Vancomycin-resistant enterococci) and of new pathogens such as MERS (respiratory syndrome). These microorganisms are resistant to antibiotics, and commonly referred to as "superbugs". As a result of infection by these pathogens often involve considerable pain and suffering and many deaths. These infections are major problems and significant costs of modern health sector. Cleaning and disinfection are expensive and are not effective enough due to inaccessible areas. Since there is no way to force people to disinfect hands remains to introduce robots to disinfect.

2. IMPLEMENTATION



The disinfection spraying robots are developed to sterilize areas, equipment, and vehicles located in the open space areas. Disinfection is carried out by spraying hot fog during the automatic movement of robot along a preprogrammed route. Robots are perfectly suited for regular sterilization procedures in wide-open areas of industrial and transportation companies. Disinfection Spraying Robot is fully autonomous, it performs sanitizing in automatic mode while monitoring the level of the sprayed solution, coverage area, and battery charge. Right after the disinfecting chemical solution is distributed, the robot immediately returns to the charging station where the refill solution is added. At the same time, the batteries are charged to their full capacity. This method of application allows a single operator to service several robots simultaneously and to disinfect large areas efficiently. Most importantly, the technical staff does not expose itself to prolonged exposure of highly concentrated chemicals while working in an entirely safe and risk-free environment. Two robot models S8.2-TF and S8.2-TF-W are available for order. Their difference is that S8.2-TF-W is equipped with a direction and wind speed sensor since the coverage area of the disinfection zone depends on the direction and strength of the wind. The special sensor installed on the robot automatically calculates the sterilization surface area. It accumulates and processes incoming data of the sprayed solution taking into consideration the wind speed and its direction. A specially developed smartphone application is used to display the decontaminated area on the map for easy monitoring and control. S8.2-TF is a more affordable model. It is not equipped with a wind sensor and does not support software for estimating of the treated area. The operator can visually monitor the operation of the robot through two high-resolution cameras directed both forward and backward. Disinfection spraying robots are monitored using 4G wireless technology. To control the movement, software installed on the dispatcher's PC is used. The robot is refilled with a disinfectant solution manually during charging. Refueling of the robot is carried out after charging in a specially equipped place.

3. RESULTS



4. CONCLUSION

Study showed that a “no-touch” semi-automated system, the UV light, was effective in substantially reducing the heterotrophic bacterial and MRSA burden on high-touch surfaces in rooms vacated by COVID-19 positive patients. We are designing a computer based voice controlled disinfection robot. Sanitizer spray and Camera. UVC light kills up to 99.99% germs and disinfect area. This disinfection robot is based on computer, we can control it by voice command. When we give command the robot is able to move in all directions. We have used UVC lights and sanitizer spray which kill germs. UVC disinfection may add to the armamentarium against HAI's without risking the adaptive genetic resistance incurred by pharmaceutical weapons.

5. FUTURE SCOPE

- The robots developed with UV-C light, are used as a part of the consistent cleaning cycle, which results in preventing and reducing the spread of communicable diseases caused by viruses, bacteria, and other types of damaging organic microorganisms in the atmosphere.
- The robotic disinfection is secure, reliable, and reduces human inaccuracy. Moreover, the recent outbreak of the COVID-19 throughout the world has insisted on various regional governments to adopt health & safety measures as well as medical robots.
- Since, the medical professionals seek hand free ways to prevent the spread of novel coronavirus, and UV-C robots can help in regulating the spread of novel coronavirus by killing their germs from surrounding.

6. REFERENCES

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