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Design and Implementation of smart disinfection and sanitation System

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The Smart Disinfection and Sanitation Tunnel is a demonstration of how It has been designed to provide maximum protection to people passing through the tunnel in around 15 seconds. Which can help the community to fight against the COVID-19. The main idea of this project is to make a tunnel that can try and prevent the spread of COVID-19. This disinfection and sanitation tunnel is prepared in order to sanitize people within 15 seconds from any possible bacteria. The disinfectant solution used consists of a combination of sodium hypochlorite (NaOCl) and water (H₂O). The disinfectant is non-volatile, thus enabling prolonged veridical and bactericidal activity and sanitizing the surfaces. So, we took this initiative to make this Smart Disinfection and Sanitation Tunnel. This tunnel was made in a time span of 12hrs. It can disinfect a person fully from head to toe in a time span of just 15 seconds and the solution used is completely harmless. A 1HP Water Pump machine is placed on the side of each tunnel that takes the solution of 0.4% of Sodium hypochlorite solution in 100 Litre of water from the tank. As the machine is automatic it senses whether anyone is entering into the tunnel. As anyone enters into the tunnel the Water Pump gets started for 15 seconds. So that the user can pass through that tunnel and if there is no one in the tunnel the pump will be off to save the water and electricity. The misty disinfectant spray protects citizens from catching bacteria for a period of at least 60 minutes (Approximate). As it disinfects the air, exposed skin, and human clothing. A plastic tank for 200 liters of solution and a pump for the high-pressure pipe system is located on the side of the tunnel. As per calculation the solution should be enough for 8-10 hours. Since it has a motion sensor above the entrance in order to save an antiseptic. (May varies according to the people entering into tunnel). A plastic tank for 200 liters of solution and a pump for the high-pressure pipe system is located on the side of the tunnel which is connected with 4-Way Fogger Assembly. Micro tubing pipes have been used throughout the tunnel to supply the solution to the fogger. Inside, there is a high-pressure pipeline with 4 4-Way Fogger which can be connected. The fog leaves no marks on clothes, while completely enveloping the incoming person and destroys the virus even in hard-to-reach folds of clothing and protects for some time after the exit. As a solution, a certified solution is used in this project.

Biography

I am Md. Rahatul Islam (Mr.), a Bangladeshi citizen. I have completed my graduation as B. Sc in Electrical and Electronic Engineering (4-years Bachelor of Engineering) at Canadian University of Bangladesh (CUB), Dhaka, Bangladesh. Currently, I am a research assistant at Canadian University of Bangladesh. Besides my academic background, I have an excellent professional working experience for more than three years in the field of Robotics, Advance Technology Insurance, marketing, and management. I'm CEO and Vice-president of Bangladesh Advance Robotics Research Center. I was working with UNDP SDG project as Executive Director (HR Department). I started the Robo Tech Leadership Program "Let's make a robot" and learned Robotics and Advance Technology among the School, College and University students. So, I attempted to develop more than 20+ robotics & autonomous projects, I have taken 10+ workshop as a Core speaker & accumulated 2000+ students. Moreover, I received 5+ honor and awards, some journal & publications, conference acceptances, Invitations, 10+ media coverage, features, and an interview was published for special contribution in the field of advanced technology (AI & Robotics) & young leadership activities.

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