



Ministry of Skill Development and Entrepreneurship

Industrial Training Institute, Berhampur files 3 Patents for COVID-19 related innovations; Leverages technical expertise to contribute to Aatmnirbhar Bharat

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In an ongoing effort to use its technical expertise to help curtail the spread of COVID-19, Industrial Training Institute (ITI), Berhampur has registered three of its innovative products developed to fight against the novel Coronavirus in the patent journal, attesting its inherent strength to be able to rise to any challenge. This will give priority right to the institute over invention. Following the footsteps of IITs and NITs, ITI Berhampur has joined in the patent institute club of the country. In coming days, this achievement will catapult more ITIs participation towards filing patents for their innovations and contribute towards fulfilling Hon'ble Prime Minister's vision of 'Aatmnirbhar Bharat'.



Lauding the efforts of the ITI, Dr. MahendraNathPandey, Minister for Skill Development and Entrepreneurship, said “Be it designing a UVC Robo warrior that disinfects surfaces or providing solution through mobile swab collection kiosk, Industrial Training Institutes have been at the forefront of our fight against COVID-19. I am confident that such innovations will encourage self-reliance and research spinoffs catering to the needs of the society at large and will encourage more ITIs to come forward with innovative solutions to contain the spread of the virus. My heartiest congratulations to the team at ITI Berhampur for setting an ideal example for other ITIS across the country to stand in solidarity with the government in its efforts to fight the virus”.

Hon’ble Prime Minister’s call for Aatmnirbhar Bharat promises to bring out the best that we have to offer and ITI Berhampur is eminently placed to lead such self-reliant efforts.

The three innovations by the institute include:

MOBILE SWAB COLLECTION KISOK

In a recent report of WHO the COVID 19 virus Aerosol can also transmit through air. The aerosols can remain in air for a longer period, so during swab collection either at the mobile kiosk or at hospitals, the suspected patient stays outside. The health technician stays inside the kiosk. This creates a possibility of contaminated aerosols in that area where sample is collected. There is a possibility of spreading COVID Virus from that location. ITI Berhampur has provided a solution to put the suspected patient inside the cabin and technician outside the kiosk. By a negative pressure technology using HEPA filters the aerosols are filtered, making the environment free from COVID virus in that area.

UVC SOLE SANITIZER

A sole sanitizing device includes a portable platform and a pair of shoe sole receiving sections including open bottom surface. Each of the shoe sole receiving sections is adapted to receive the exterior part of the shoe. This platform also includes plurality of disposable transparent mats along which can be removed and placed on the platform. A plurality of UVC light source is aligned as per length of shoe receiving station. Mechanism is provided through IR sensors when both the soles are on the platform then only the UVC light gets triggered at the same time. The UVC light emits the ray upwards and eradicates the microorganisms deposited on the exterior surface. The digital counter machine is set to 8 sec. and after 8 seconds, both the UVC lights are automatically turned off. 80% of transmissions of viruses happen through shoe sole. As the COVID-19 infection number is increasing in the society, preventing our soles from any chance of COVID virus as well as other infections is highly essential. It can be used at entrance of public places like Hospital, Office, Airport, Railway station, Shopping mall, hotel and institute etc. to disinfect the shoe sole. A portable small single sole machine is also designed to be used at home.

UVC ROBO WARRIOR

The UVC Robo Warrior machine provides UVC light disinfection apparatus that disinfects the surfaces of public transport system and the isolation rooms occupied by COVID 19 infected or suspected patients. This apparatus moves to the point of disinfection surfaces for direct exposure of UVC light. UVC light emits UV Ray with a wave length of 254 nm. which is most easily absorbed by proteins and nucleic acid of bacteria and virus. It can denature and disassociate proteins from thymine dimers in nucleic acid and destroy the nucleic acid and destroy the DNA, RNA, structure of various bacteria.

This shows a robot is used to carry the UVC light to point of disinfection the movement of robot is controlled by an android mobile phone with Bluetooth by the operator who controls the movement of robot from a long distance outside the room. The ROBOT can emit UVC ray to all the inaccessible points in the field of disinfection. The Bluetooth camera fitted in the eyes of robot sends the video of the area of disinfection to the mobile screen for better control movement of robot. The sensor fitted on the body of the robot prevents any collision of robot with the wall or any object coming on its track by stopping the movement. This robot is made out of plywood and is portable, light-weight and low cost with chargeable battery.

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