IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 7, May 2022
Impact Factor: 6.252

Grooving Distance Nok in Yamaha BCL Model

Shinde Swapnil K., Pekhale Aniket P., Gohil Mahendrakumar A., Bhosale Tejas R., Prof. H.B. Wagh
Matoshri Collage of Engineering and Research Centre, Nashik

Abstract: As per need of our customers a service package made of an embedded monitoring hardware that collects essential data from forklift trucks, and other equipment in the Transportation sector, for the Condition Based Maintenance (CBM) service. The input data is comprised of several signals and comes from sensors over the whole vehicle, as well as from certain components like the battery which has been enabled with a datalogger to monitor its level of charge or its temperature. The embedded monitoring hardware is composed of several embedded modules for signals capturing, for decision taking (health assessment) and for communication with external devices, including the integration with other components dataloggers. The package is also made of a software remote platform where this information is displayed and exploited at manufacturer / dealer / end user level, i.e. the Fleet-Wide Asset Health Management (FW-AHM) platform by means of KASEM® software (see Figure 5), which also provides integration capabilities with the Enterprise Resource Planning (ERP) software at the company to gather the maximum possible information for the Fleet Management (FM).

I. Introduction

Ultraviolet-C (UV-C) light consists of a shorter but energetic wavelength of light. It is particularly good at destroying genetic material in coronavirus. The radiation warps the structure RNA which prevents the viral particles from making more copies of themselves. UV-C kills microbes quickly. Sanitization of luggage bags by employing UV-C light avoids the harmful effects of the chemicals used for the disinfection. The UVT Conveyor uses UV disinfection lamps that emit UV-C rays. Research has shown that these UV-C rays can effectively kill up to 99.99 per cent of the coronavirus. Thermal heating is another way to disinfect papers, which is an essentiality for office works. These are environment friendly and contact-free effective sanitization methods. Besides this conveyor for disinfecting luggage bags externally, a UVC box has also been developed to sanitize objects like N-95 masks, mobile phones, iPad, laptop, currency notes, cheque leaves, challans, passbooks, paper, envelopes and many more items.

II. Review

By Carolyn Crist:

March 29, 2022 - A type of ultraviolet light called far-UVC, which is safe to shine on people, could dramatically reduce the transmission of airborne germs when used indoors, according to a new study published in Scientific Reports, a journal by Nature.

In an experiment, shining the light for less than 5 minutes reduced the number of airborne microbes by more than 98%, the researchers found. The technology could become a new “hands-off” way to reduce the spread of airborne diseases such as COVID-19 and the flu, they say.

“Far-UVC rapidly reduces the number of active microbes in the indoor air to almost zero, making indoor air essentially as safe as outdoor air,” David Brenner, PhD, one of the researchers and director of the Center for Radiological Research at Columbia University, said in a statement.

“Using this technology in locations where people gather together indoors could prevent the next potential pandemic,” he said.

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 7, May 2022
Impact Factor: 6.252

Scientists have known for decades that a type of ultraviolet light called UVC can kill microbes, including bacteria and viruses. But conventional germ-killing UVC light can't be used in indoor spaces when people are present because it could harm the eyes and skin, potentially causing sunburn and skin cancer. UVC has mostly been limited to sterilizing medical equipment.

Far-UVC light, on the other hand, has a shorter wavelength and doesn't penetrate human skin cells or eye cells. During the past decade, multiple studies across the world have found that far-UVC can destroy airborne germs without causing damage to living tissue. In a study published in February, Brenner's lab found that far-UVC light didn't cause damage in a 3D model of human skin. In another study, they found no signs of skin damage in hairless mice that were exposed to the light for 8 hours a day over 15 months.

In the latest study, researchers from Columbia University, the University of Leeds, the University of Dundee, and the University of St. Andrews tested far-UVC light in a normal-sized room that mimicked real-world conditions, with the same ventilation rate as a typical home or office. They installed five overhead far-UVC lamps in a room that was about 10 by 13 feet -- about the size of a single-patient hospital room.

During the experiment, a sprayer continuously spewed an aerosol mist of *Staphylococcus aureus*, a bacteria that causes a variety of medical issues and can be involved in dangerous drug-resistant cases. The research team chose the microbe because it is less sensitive to far-UVC light than coronaviruses. After the microbes reached a certain concentration in the room, they turned on the lamps.

The lamps killed more than 98% of the airborne microbes in 5 minutes. The research team found that even as more microbes were sprayed into the room, the far-UVC lamps keep the level of microbes low.

The research team noted that the results were much better than other approaches to disinfecting indoor spaces with people present. The efficacy is typically measured in terms of "equivalent air changes per hour," and in this study, far-UVC lamps produced about 184 equivalent air changes per hour. With most other approaches, between five and 20 equivalent air changes per hour is the norm.

The research team also noted the potential limits to using far-UVC in the real world, such as ensuring that lamps are installed properly and that the light has the right amount of radiation to be effective and safe for people. If a safe balance can be achieved, the technology could be a game-changer for reducing virus transmission, the researchers said.

Previous studies have shown that far-UVC light can kill the virus that causes COVID-19, other human coronaviruses, the flu, and drug-resistant bacteria, Brenner said. Due to the way the light kills microbes, viruses and bacteria can't develop resistance as they do with vaccines and drug treatments.

"What's particularly attractive about far-UVC technology as a practical method of preventing indoor disease transmission is that it will be equally good at inactivating all future COVID variants," he said, "as well as new infectious viruses that have yet to emerge while retaining efficacy against 'old-fashioned' viruses like influenza and measles."

The study was supported by a grant from the U.K. Health Security Agency. Brenner and co-inventors have been granted a U.S. patent for the technology, and Columbia University has licensed parts of filtered UV light technology to USHIO Inc. and received a research gift from Lumen Labs, a company producing far-UVC sources.

By Lindsay Kalter:

May 19, 2020 -- The coronavirus pandemic has breathed new life into a decades-old technique that can zap viruses and bacteria: ultraviolet light.

Hospitals have been using it for years to cut down on the spread of drug-resistant superbugs and to disinfect surgical suites. But there is now interest in using the technology in spaces like schools, office buildings, and restaurants to help reduce coronavirus transmission once public spaces are open again.

"Germicidal ultraviolet technology has been around for probably 100 years and has had good success," says Jim Malley, PhD, a professor of civil and environmental engineering at the University of New Hampshire. "Since early March, there's been just an enormous amount of interest in it, and research funding to institutions around the world."

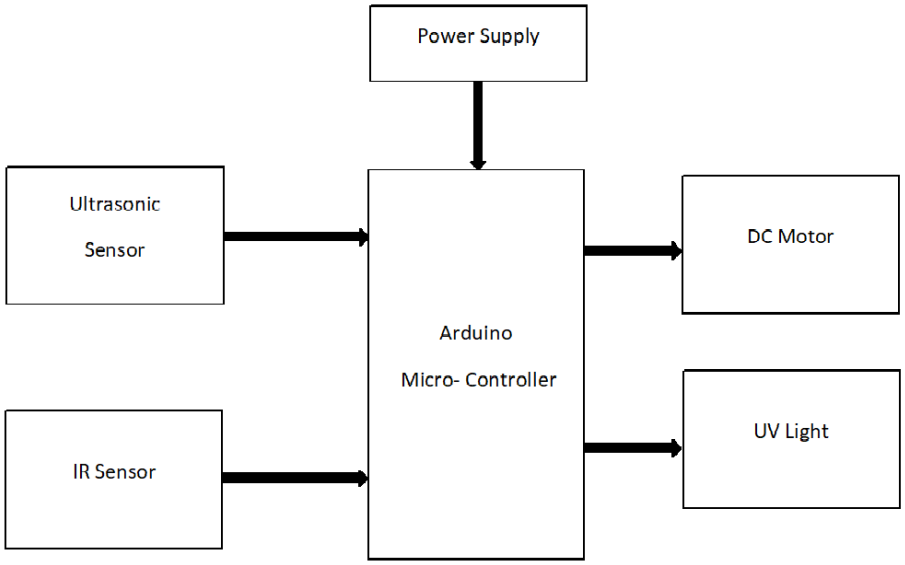
IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 7, May 2022
Impact Factor: 6.252

The kind of light that's used, ultraviolet C (UVC), is one of the three types of rays given off by the sun. It is filtered out by the ozone before it can get to life on Earth, thankfully: Though it can kill germs, it can also cause cancer and destroy our DNA and the corneas of our eyes.

That is the current dilemma with the use of UV technology, Malley says. It has great potential, but it can cause serious permanent damage.

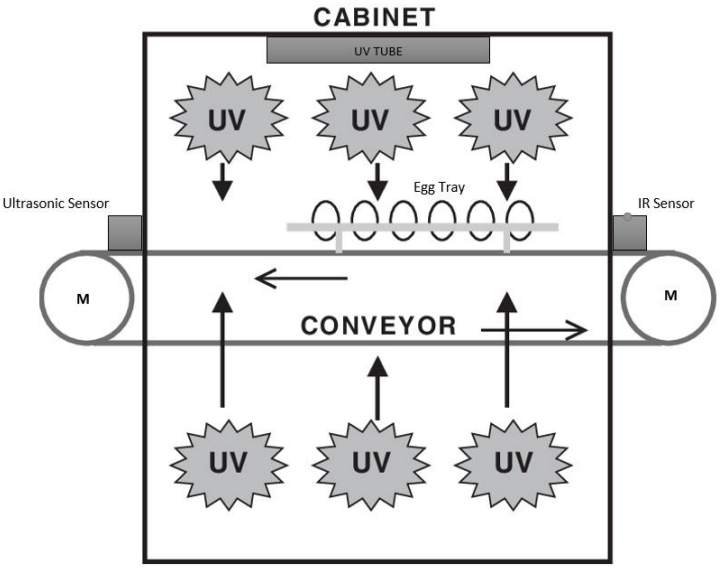
The sanitizing effects of UV lights have been seen with other coronaviruses, including the one that causes severe acute respiratory syndrome (SARS). Studies have shown that it can be used against other coronaviruses. One study found at least 15 minutes of UVC exposure inactivated SARS, making it impossible for the virus to replicate. New York's Metropolitan Transit Authority announced the use of UV light on subway cars, buses, technology centres, and offices. The National Academy of Sciences says although there is no concrete evidence for UV's effectiveness on the virus that causes COVID-19, it has worked on other similar viruses, so it would likely fight this one too.

III. Block Diagram



IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 7, May 2022
Impact Factor: 6.252

IV. METHODOLOGY



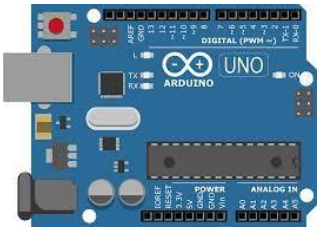
V. OBJECTIVE OF PROJECT

To fight against Corona Virus.

- UV kills microbes quickly.
- Sanitization of luggage bags by employing UVC light avoids the harmful effect of chemicals used for disinfection.

VI. HARDWARE DESCRIPTION

1) Arduino Uno:



Arduino Uno is a microcontroller board based on the ATmega328P. It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz quartz crystal, a USB connection, a power jack, an ICSP header and a reset button. It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with a AC-to-DC adapter or battery to get started. You can tinker with your UNO without worrying too much about doing something wrong, worst-case scenario you can replace the chip for a few dollars and start over again.

The Arduino Uno board can be powered via the USB connection or with an external power supply. The power source is selected automatically. External (non-USB) power can come either from an AC-to-DC adapter (wall-wart) or battery.

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 7, May 2022
Impact Factor: 6.252

The adapter can be connected by plugging a 2.1mm centre-positive plug into the board's power jack. Leads from a battery can be inserted in the GND and Vin pin headers of the POWER connector.
The board can operate on an external supply from 6 to 20 volts. If supplied with less than 7V, however, the 5V pin may supply less than five volts and the board may become unstable. If using more than 12V, the voltage regulator may overheat and damage the board. The recommended range is 7 to 12 volts.
The power pins are as follows:

- Vin. The input voltage to the Arduino board when it's using an external power source (as opposed to 5 volts from the USB connection or other regulated power source). You can supply voltage through this pin, or, if supplying voltage via the power jack, access it through this pin.
- 5V. This pin outputs a regulated 5V from the regulator on the board. The board can be supplied with power either from the DC power jack (7-12V), the USB connector (5V), or the VIN pin of the board (7-12V). Supplying voltage via the 5V or 3.3V pins bypasses the regulator, and can damage your board. We don't advise it.
- 3V3. A 3.3-volt supply generated by the on-board regulator. Maximum current draw is 50 mA.
- GND. Ground pins.
- IOREF. This pin on the Arduino board provides the voltage reference with which the microcontroller operates. A properly configured shield can read the IOREF pin voltage and select the appropriate power source or enable voltage translators on the outputs to work with the 5V or 3.3V.

In addition, some pins have specialized functions:

- Serial: 0 (RX) and 1 (TX). Used to receive (RX) and transmit (TX) TTL serial data. These pins are connected to the corresponding pins of the ATmega8U2 USB-to-TTL Serial chip.
- External Interrupts: 2 and 3. These pins can be configured to trigger an interrupt on a low value, a rising or falling edge, or a change in value. See the attach Interrupt () function for details.
- PWM: 3, 5, 6, 9, 10, and 11. Provide 8-bit PWM output with the analog Write () function.
- SPI: 10 (SS), 11 (MOSI), 12 (MISO), 13 (SCK). These pins support SPI communication using the SPI library.
- LED: 13. There is a built-in LED driven by digital pin 13. When the pin is HIGH value, the LED is on, when the pin is LOW, it's off.
- TWI: A4 or SDA pin and A5 or SCL pin. Support TWI communication using the Wire library.

2) Relay:

A relay is an electrically operated switch. It consists of a set of input terminals for a single or multiple control signals, and a set of operating contact terminals. The switch may have any number of contacts in multiple contact forms, such as make contacts, break contacts, or combinations thereof.

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 7, May 2022
Impact Factor: 6.252

Relays are used where it is necessary to control a circuit by an independent low-power signal, or where several circuits must be controlled by one signal. Relays were first used in long-distance telegraph circuits as signal repeaters: they refresh the signal coming in from one circuit by transmitting it on another circuit. Relays were used extensively in telephone exchanges and early computers to perform logical operations.

The traditional form of a relay uses an electromagnet to close or open the contacts, but other operating principles have been invented, such as in solid-state relays which use semiconductor properties for control without relying on moving parts. Relays with calibrated operating characteristics and sometimes multiple operating coils are used to protect electrical circuits from overload or faults; in modern electric power systems these functions are performed by digital instruments still called protective relays.

Latching relays require only a single pulse of control power to operate the switch persistently. Another pulse applied to a second set of control terminals, or a pulse with opposite polarity, resets the switch, while repeated pulses of the same kind have no effects. Magnetic latching relays are useful in applications when interrupted power should not affect the circuits that the relay is controlling.

3) UVC Tube:

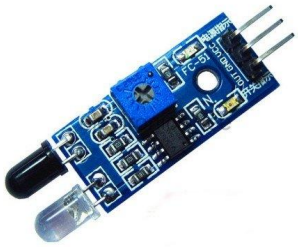
Ultraviolet germicidal irradiation (UVGI) is a disinfection method that uses short-wavelength ultraviolet (ultraviolet C or UV-C) light to kill or inactivate microorganisms by destroying nucleic acids and disrupting their DNA, leaving them unable to perform vital cellular functions. UVGI is used in a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

UV-C light is weak at the Earth's surface since the ozone layer of the atmosphere blocks it, UVGI devices can produce strong enough UV-C light in circulating air or water systems to make them inhospitable environments to microorganisms such as bacteria, viruses, and other pathogens. UVGI can be coupled with a filtration system to sanitize air and water.

The application of UVGI to disinfection has been an accepted practice since the mid-20th century. It has been used primarily in medical sanitation and sterile work facilities. Increasingly, it has been employed to sterilize drinking and wastewater since the holding facilities are enclosed and can be circulated to ensure a higher exposure to the UV. UVGI has found renewed application in air purifiers.

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 7, May 2022
Impact Factor: 6.252

4) IR Sensor:



Infrared (IR), sometimes called infrared light, is electromagnetic radiation (EMR) with wavelengths longer than those of visible light. It is therefore invisible to the human eye. IR is generally understood to encompass wavelengths from around 1 millimeter (300 GHz) to the nominal red edge of the visible spectrum, around 700 nanometers (430 THz). Longer IR wavelengths (30μm-100μm) are sometimes included as part of the terahertz radiation range. Almost all black-body radiation from objects near room temperature is at infrared wavelengths. As a form of electromagnetic radiation, IR propagates energy and momentum, with properties corresponding to both those of a wave and of a particle, the photon.

It was long known that fires emit invisible heat; in 1681 the pioneering experimenter Edme Mariotte showed that glass, though transparent to sunlight, obstructed radiant heat. In 1800 the astronomer Sir William Herschel discovered that infrared radiation is a type of invisible radiation in the spectrum lower in energy than red light, by means of its effect on a thermometer. Slightly more than half of the energy from the Sun was eventually found, through Herschel's studies, to arrive on Earth in the form of infrared. The balance between absorbed and emitted infrared radiation has an important effect on Earth's climate.

Infrared radiation is emitted or absorbed by molecules when changing rotational-vibrational movements. It excites vibrational modes in a molecule through a change in the dipole moment, making it a useful frequency range for study of these energy states for molecules of the proper symmetry. Infrared spectroscopy examines absorption and transmission of photons in the infrared range.

Infrared radiation is used in industrial, scientific, military, commercial, and medical applications. Night-vision devices using active near-infrared illumination allow people or animals to be observed without the observer being detected. Infrared astronomy uses sensor-equipped telescopes to penetrate dusty regions of space such as molecular clouds, to detect objects such as planets, and to view highly red-shifted objects from the early days of the universe. Infrared thermal-imaging cameras are used to detect heat loss in insulated systems, to observe changing blood flow in the skin, and to detect the overheating of electrical components.

Military and civilian applications include target acquisition, surveillance, night vision, homing, and tracking. Humans at normal body temperature radiate chiefly at wavelengths around 10 μm (micrometers). Non-military uses include thermal efficiency analysis, environmental monitoring, industrial facility inspections, detection of grow-ops, remote temperature sensing, short-range wireless communication, spectroscopy, and weather forecasting.

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 7, May 2022
Impact Factor: 6.252

5) DC Motor:

A DC motor is any of a class of rotary electrical motors that converts direct current (DC) electrical energy into mechanical energy. The most common types rely on the forces produced by magnetic fields. Nearly all types of DC motors have some internal mechanism, either electromechanical or electronic, to periodically change the direction of current in part of the motor.

DC motors were the first form of motor widely used, as they could be powered from existing direct-current lighting power distribution systems. A DC motor's speed can be controlled over a wide range, using either a variable supply voltage or by changing the strength of current in its field windings. Small DC motors are used in tools, toys, and appliances. The universal motor can operate on direct current but is a lightweight brushed motor used for portable power tools and appliances. Larger DC motors are currently used in propulsion of electric vehicles, elevator and hoists, and in drives for steel rolling mills. The advent of power electronics has made replacement of DC motors with AC motors possible in many applications.

The brushed DC electric motor generates torque directly from DC power supplied to the motor by using internal commutation, stationary magnets (permanent or electromagnets), and rotating electromagnets.

Advantages of a brushed DC motor include low initial cost, high reliability, and simple control of motor speed. Disadvantages are high maintenance and low life-span for high intensity uses. Maintenance involves regularly replacing the carbon brushes and springs which carry the electric current, as well as cleaning or replacing the commutator. These components are necessary for transferring electrical power from outside the motor to the spinning wire windings of the rotor inside the motor.

Brushes are usually made of graphite or carbon, sometimes with added dispersed copper to improve conductivity. In use, the soft brush material wears to fit the diameter of the commutator, and continues to wear. A brush holder has a spring to maintain pressure on the brush as it shortens. For brushes intended to carry more than an ampere or two, a flying lead will be molded into the brush and connected to the motor terminals. Very small brushes may rely on sliding contact with a metal brush holder to carry current into the brush, or may rely on a contact spring pressing on the end of the brush. The brushes in very small, short-lived motors, such as are used in toys, may be made of a folded strip of metal that contacts the commutator.

Typical brushless DC motors use one or more permanent magnets in the rotor and electromagnets on the motor housing for the stator. A motor controller converts DC to AC. This design is mechanically simpler than that of brushed motors because it eliminates the complication of transferring power from outside the motor to the spinning rotor. The motor controller can sense the rotor's position via Hall effect sensors or similar devices and can precisely control the timing, phase, etc., of the current in the rotor coils to optimize torque, conserve power, regulate speed, and even apply some braking. Advantages of brushless motors include long life span, little or no maintenance, and high efficiency. Disadvantages include high initial cost, and more complicated motor speed controllers. Some such brushless motors are sometimes referred to as "synchronous motors" although they have no external power supply to be synchronized with, as would be the case with normal AC synchronous motors.

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 7, May 2022
Impact Factor: 6.252

6) Ultrasonic Sensor:

Ultrasound can be used for measuring wind speed and direction (anemometer), tank or channel fluid level, and speed through air or water. For measuring speed or direction, a device uses multiple detectors and calculates the speed from the relative distances to particulates in the air or water. To measure tank or channel liquid level, and also sea level (tide gauge), the sensor measures the distance (ranging) to the surface of the fluid. Further applications include: humidifiers, sonar, medical ultrasonography, burglar alarms, non-destructive testing and wireless charging.

Systems typically use a transducer that generates sound waves in the ultrasonic range, above 18 kHz, by turning electrical energy into sound, then upon receiving the echo turn the sound waves into electrical energy which can be measured and displayed. This technology, as well, can detect approaching objects and track their positions. Ultrasound can also be used to make point-to-point distance measurements by transmitting and receiving discrete bursts of ultrasound between transducers. This technique is known as Sonomicrometry where the transit-time of the ultrasound signal is measured electronically (ie digitally) and converted mathematically to the distance between transducers assuming the speed of sound of the medium between the transducers is known. This method can be very precise in terms of temporal and spatial resolution because the time-of-flight measurement can be derived from tracking the same incident (received) waveform either by reference level or zero crossing. This enables the measurement resolution to far exceed the wavelength of the sound frequency generated by the transducers.

Ultrasonic sensors can detect the movement of targets and measure the distance to them in many automated factories and process plants. Sensors can have an on or off digital output for detecting the movement of objects, or an analog output proportional to distance. They can sense the edge of the material as part of a web guiding system. Ultrasonic sensors are widely used in cars as parking sensors to aid the driver in reversing into parking spaces. They are being tested for a number of other automotive uses including ultrasonic people detection and assisting in autonomous UAV navigation.[citation needed]

Because ultrasonic sensors use sound rather than light for detection, they work in applications where photoelectric sensors may not. Ultrasonics is a great solution for clear object detection and for liquid level measurement, applications that photoelectric struggle with because of target translucence. As well, target color or reflectivity do not affect ultrasonic sensors, which can operate reliably in high-glare environments. Passive ultrasonic sensors may be used to detect high-pressure gas or liquid leaks, or other hazardous conditions that generate ultrasonic sound. In these devices, audio from the transducer (microphone) is converted down to the human hearing range.

High-power ultrasonic emitters are used in commercially available ultrasonic cleaning devices. An ultrasonic transducer is affixed to a stainless-steel pan which is filled with a solvent (frequently water or isopropanol). An electrical square wave feeds the transducer, creating sound in the solvent strong enough to cause cavitation. Ultrasonic technology has been used for multiple cleaning purposes. One of which that been gaining a decent amount of traction in the past decade is ultrasonic gun cleaning. Ultrasonic testing is also widely used in metallurgy and engineering to evaluate corrosion, welds, and material defects using different types of scans.

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 7, May 2022
Impact Factor: 6.252

7) Conveyor System:

Conveyors are durable and reliable components used in automated distribution and warehousing, as well as manufacturing and production facilities. In combination with computer-controlled pallet handling equipment this allows for more efficient retail, wholesale, and manufacturing distribution. It is considered a labor-saving system that allows large volumes to move rapidly through a process, allowing companies to ship or receive higher volumes with smaller storage space and with labor expense.

Belt conveyors are the most commonly used powered conveyors because they are the most versatile and the least expensive. Products are conveyed directly on the belt so both regular and irregular shaped objects, large or small, light and heavy, can be transported successfully. Belt conveyors are also manufactured with curved sections that use tapered rollers and curved belting to convey products around a corner. These conveyor systems are commonly used in postal sorting offices and airport baggage handling systems.

Belt conveyors are generally fairly similar in construction consisting of a metal frame with rollers at either end of a flat metal bed. Rubber conveyor belts are commonly used to convey items with irregular bottom surfaces, small items that would fall in between rollers (e.g. a sushi conveyor bar), or bags of product that would sag between rollers. The belt is looped around each of the rollers and when one of the rollers is powered (by an electrical motor) the belting slides across the solid metal frame bed, moving the product. In heavy use applications, the beds in which the belting is pulled over are replaced with rollers. The rollers allow weight to be conveyed as they reduce the amount of friction generated from the heavier loading on the belting. The exception to the standard belt conveyor construction is the Sandwich Belt conveyor. The Sandwich Belt conveyor uses two conveyor belts, instead of one. These two conventional conveyor belts are positioned face to face, to firmly contain the items being carried in a "sandwich-like" hold.

Belt conveyors can be used to transport products in a straight line or through changes in elevation or direction. For conveying Bulk Materials like Grains, Ore, Coal, Sand etc., over gentle slopes or gentle curvatures, a troughed belt conveyor is used. The trough of the belt ensures that the flowable material is contained within the edges of the belt. The trough is achieved by keeping the idler rollers in an angle to the horizontal at the sides of the idAler frame. A Pipe Conveyor is used for material travel paths that require sharper bends and inclines up to 35 degrees. A pipe conveyor features the edges of the belt being rolled together to form a circular section like a pipe. Like a Troughed Belt Conveyor, a Pipe Conveyor also uses idler rollers. However, in this case, the idler frame completely surrounds the conveyor belt helping it to retain the pipe section while pushing it forward. In the case of travel paths requiring high angles and snake-like curvatures, a Sandwich Belt is used. The sandwich belt design enables materials carried to travel along a path of high inclines up to 90-degree angles, enabling a vertical path as opposed to a horizontal one. This transport option is also powered by idlers.

Other important components of the Belt Conveying System apart from the Pulleys and Idler rollers include the Drive Arrangement of reducer Gear Boxes, Drive motors, and associated couplings. Scrapers to clean the belt, Chutes for controlling the discharge direction, Skirts for containing the discharge on the receiving belt, Take Up assembly for "tensioning" the belt and Technological Structures like Stringer, Short Post, Drive Frames, Pulley Frames make up the

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 7, May 2022
Impact Factor: 6.252

balance items to complete the Belt Conveying system. In certain applications, Belt conveyors can also be used for static accumulation or cartons.

VII. Expected Result

It will help us to reduce the spread of the Corona Virus. It will disinfect our personal belong at public places such as airports, railways stations, bus stands, malls, cinema halls, etc. With the help of UV-C light it kills virus and bacteria. Our disinfectant System use 254 nm wavelength UVC lights to inactivate virus present on product Surface. 360^0 disinfectant system use heavy duty material wire mesh to disinfectant product from bottom also. 180^0 disinfectant system use PVC belt. Both side PVC curtains to be provided to minimise UVC light exposure to outer Environment.

Comparison:

UVC Sanitizer	**Liquid Sanitizer**
No Waste	Waste if Liquid
Easy to Sanitize	Hard to Apply
Used to kill germs	Used to kill germs
Can used for food and water industry	Cannot be used in food and water industry

VIII. Conclusion

No-touch surface decontamination technologies that use ultraviolet light may be effective in enhancing the results of the effort spent to reduce the microbial burden and potentially achieving lower Healthcare-associated Infection HAIs rates, as aimed for in infection control strategies. Our UV tunnel conveyor sterilizes all kinds of bags without any use of chemical or liquids, keeping the bags outermost layers intact without any damage. We as a system designer recommend that every such hotspot must have couple of Auto disinfectant UV conveyors depending of the incoming human traffic, to create safe environment.

Because viruses and bacteria are much smaller than human cells, far-UVC light can reach their DNA and kill them, UVC light has a very limited range and cannot penetrate through the outer dead-cell layer of human skin or the tear layer in the eye, so it's not a human health hazard.

References

[1] Farah Zakiyah Rahmanti; Bernadus Anggo Seno Aji; Arliyanti Nurdin; Wiranti Maharani; (27-28 Oct. 2021) A Study of Conveyor System with UV Light for Vegetable and Fruit Sterilization for Farmer: https://ieeexplore.ieee.org/document/9650309.

[2] Welch, David; et al. (January 2018). "Far-UVC light: A new tool to control the spread of airborne-mediated microbial diseases". Scientific Reports. 8 (1): 2752. Bibcode:2018NatSR...8.2752W. doi:10.1038/s41598-018-21058-w. ISSN 2045-2322. PMC 5807439. PMID 29426899.

[3] Chang, Kenneth (7 May 2020). "Scientists Consider Indoor Ultraviolet Light to Zap Coronavirus in the Air". The New York Times. Archived from the original on 7 May 2020. Retrieved 9 May 2020.

[4] Chatelaine, E.; Gabard, B.; Surber, C. (2003). "Skin penetration and sun protection factor of five UV filters: Effect of the vehicle". Skin Pharmacol. Appl. Skin Physiol. 16 (1): 28–35. doi:10.1159/000068291. PMID12566826. S2CID 13458955.

[5] Boyce, J.M. (2016). "Modern technologies for improving cleaning and disinfection of environmental surfaces in hospitals". Antimicrobial Resistance and Infection Control. 5: 10. doi:10.1186/s13756-016-0111-x. PMC 4827199. PMID 27069623.