

Synopsys Presents “Inno Champ Contest”

Theme of The Contest : SMART, SECURE, EVERYTHING

Innovative ideas to create Cleaner and Healthier Planet; To detect, prevent and fight Corona pandemic

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Participant Details : -

Title	Specify Details
Name of the participant	Mukil.S
Specify your Engg Degree	Electronics and Communication Engineering / Bachelors 3 rd Year
Specify Category	Inno Champ Male
Name of the Engineering College and City	Government College of Technology, Coimbatore

Theme of The Contest : SMART, SECURE, EVERYTHING

Focus of the presentation : Innovative ideas to create Cleaner and Healthier Planet, To detect, prevent and fight Corona pandemic

Technology to be explored in the proposed solution : Semiconductors

Application of the proposed solution to be in the Domain of : Automation and Robotics

Problem Statement :-

“The COVID 19 virus survives in a object ranging from 2 hours to 11 days”. The major spread of COVID 19 is due to the surface contact with the object that might have been contacted with infected people. The use of glove is not effective in controlling the spread via infected object to human.

Problem Objectives :-

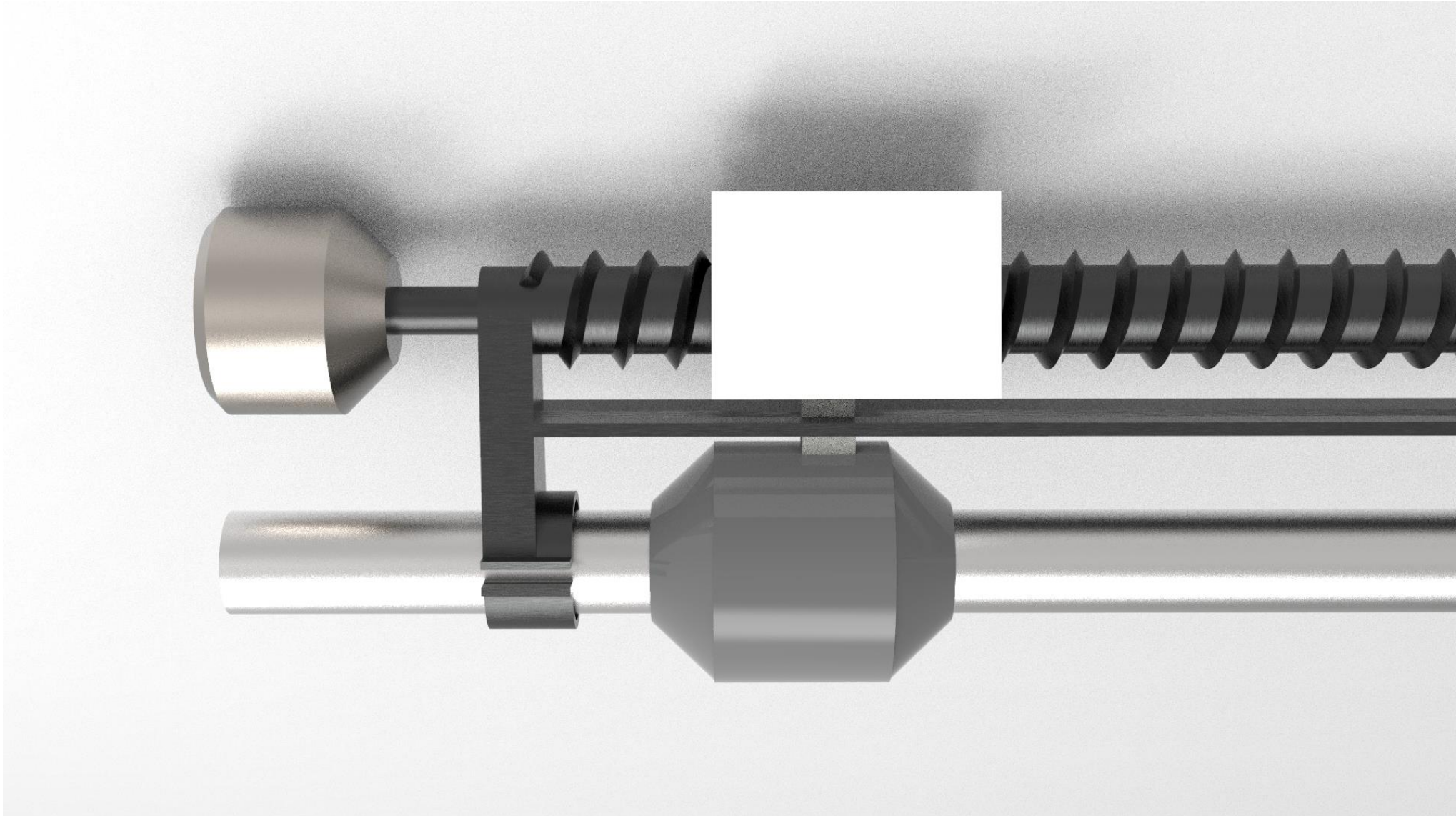
- To prevent the spread of infection via the commonly touched surface by automating* the sanitization process.
- To ensure that the public objects are not infected for the long time continuously.

* To completely eliminate the contact between humans with the infected objects. Thus, further reducing the risk of infection.

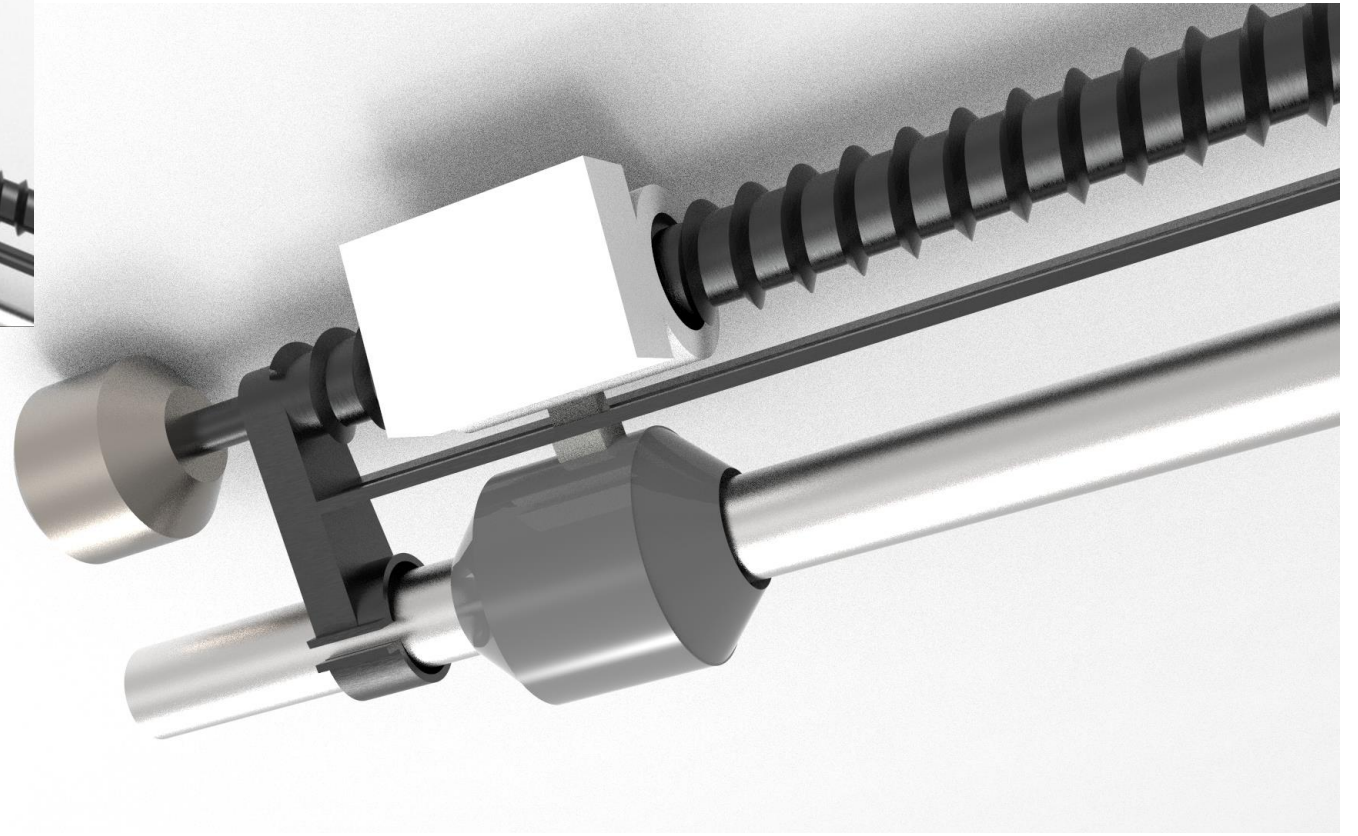
Background :-

- Avoiding touching of public objects may not be possible all the time.
- Thus, This project focus on automating the sanitization process of repeatedly used or touched surface in public places such as educational institutes, offices, hospitals and in public transports.
- Thus, This sanitizes the objects and reduces the risk of infection by avoiding the involvement of human in this task.
- This can also be implemented in other viral outbreaks, especially in densely populated countries.

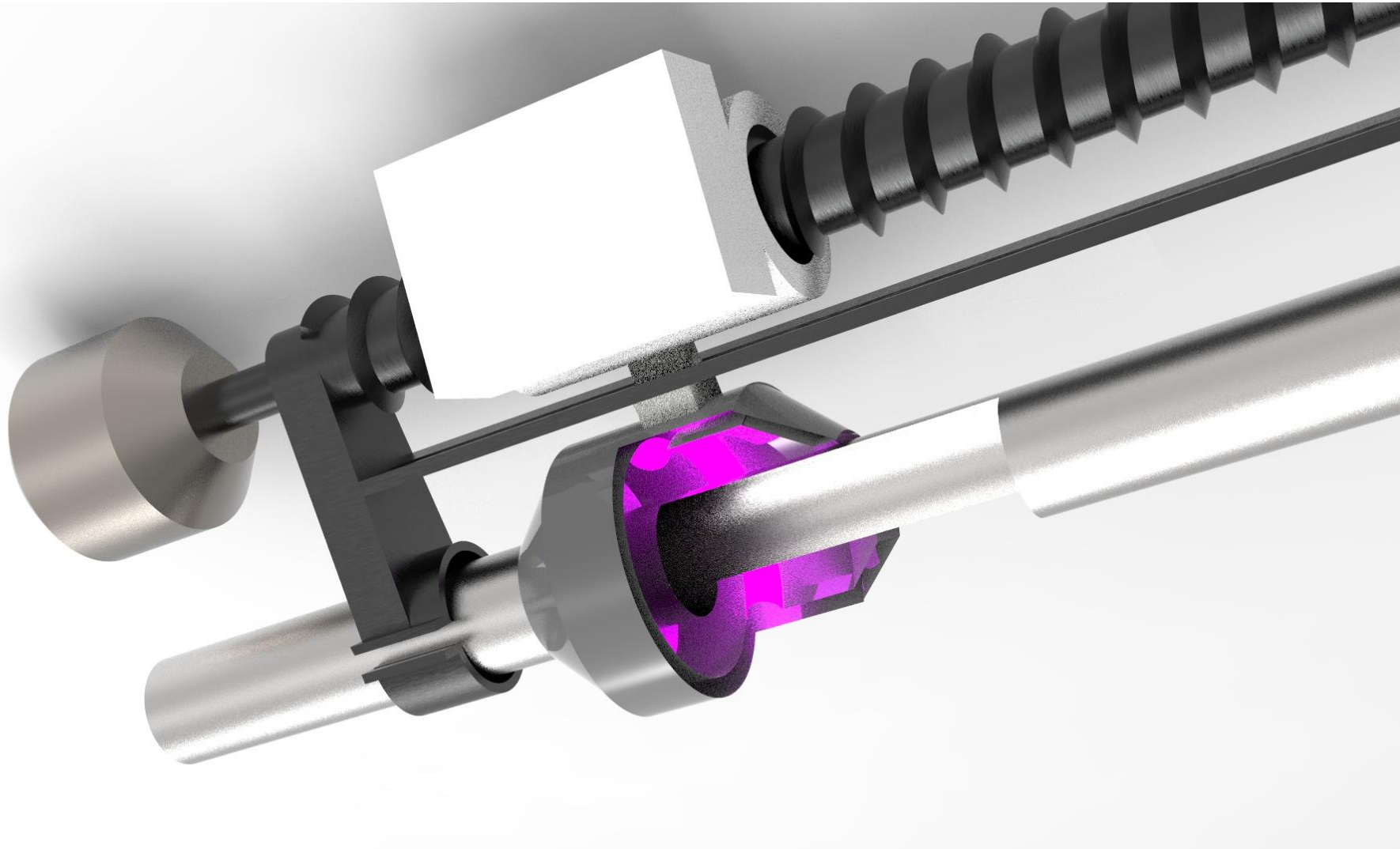
Model :-



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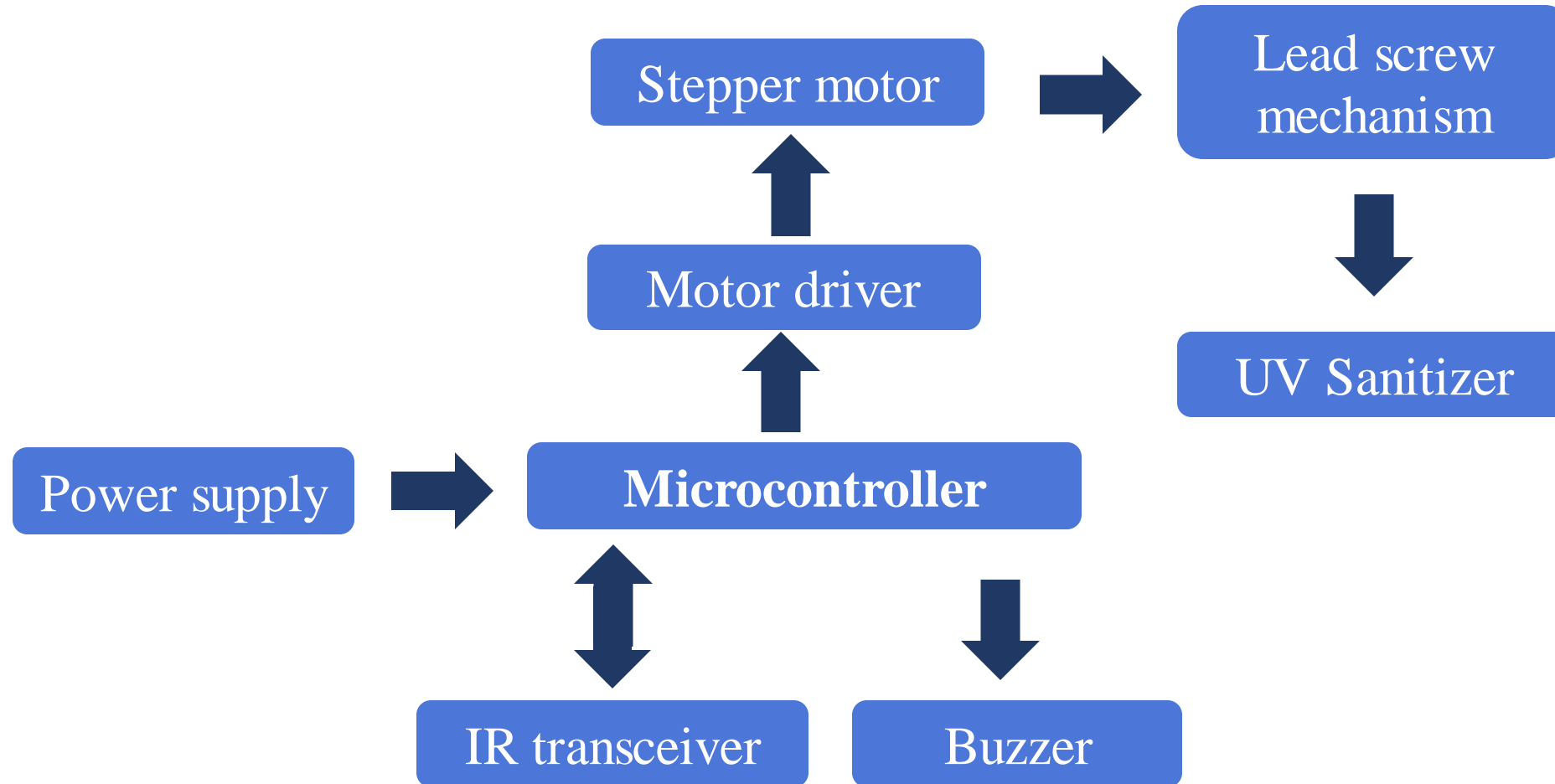
Model :-



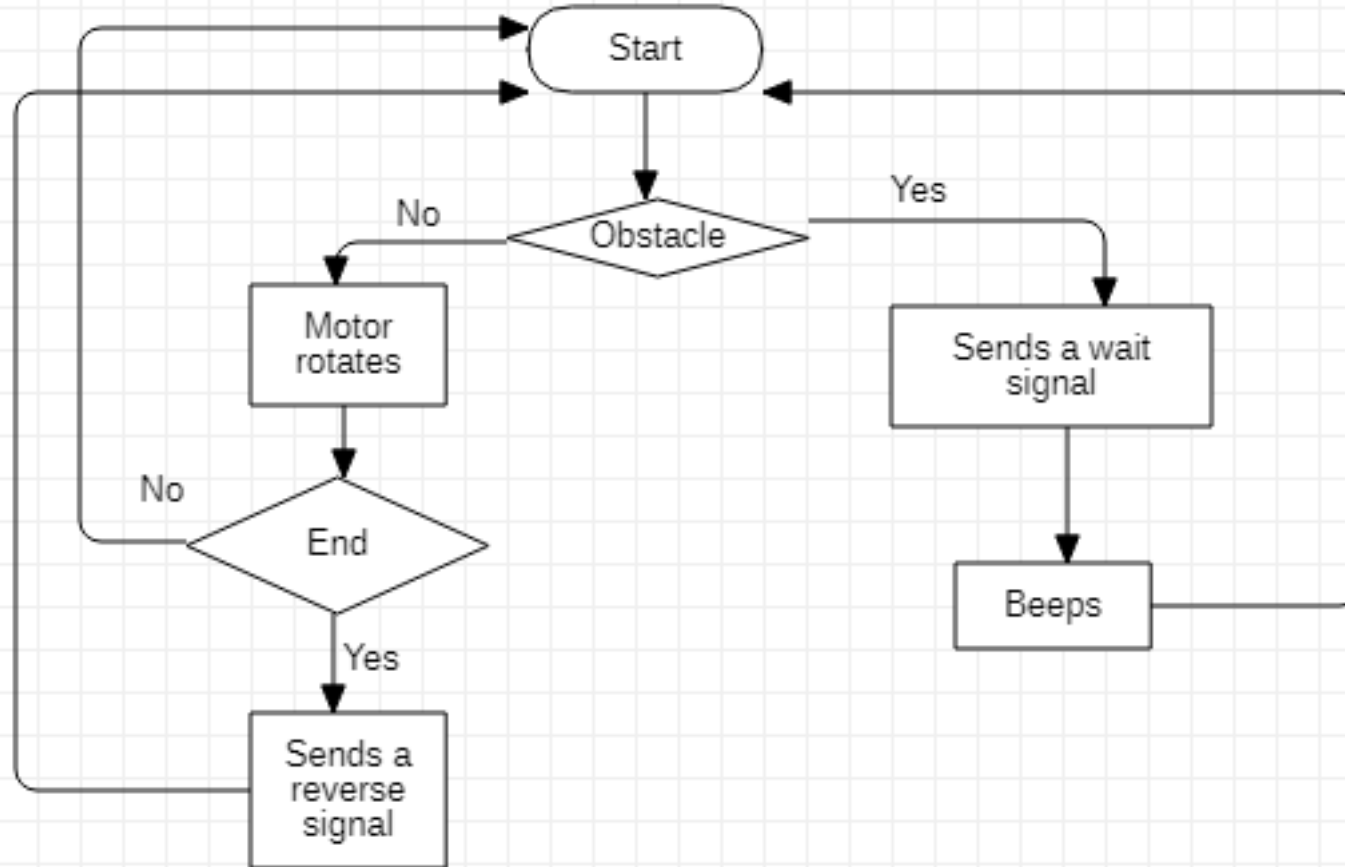
Features of the product:-

- Automated sanitization
- Easy installation - No major modification to existing system
- Chemical free - As it uses UV germicidal irradiation
- Harmless radiation - Far UVC (222 nm)
- Saves time - Automated and no involvement of labor

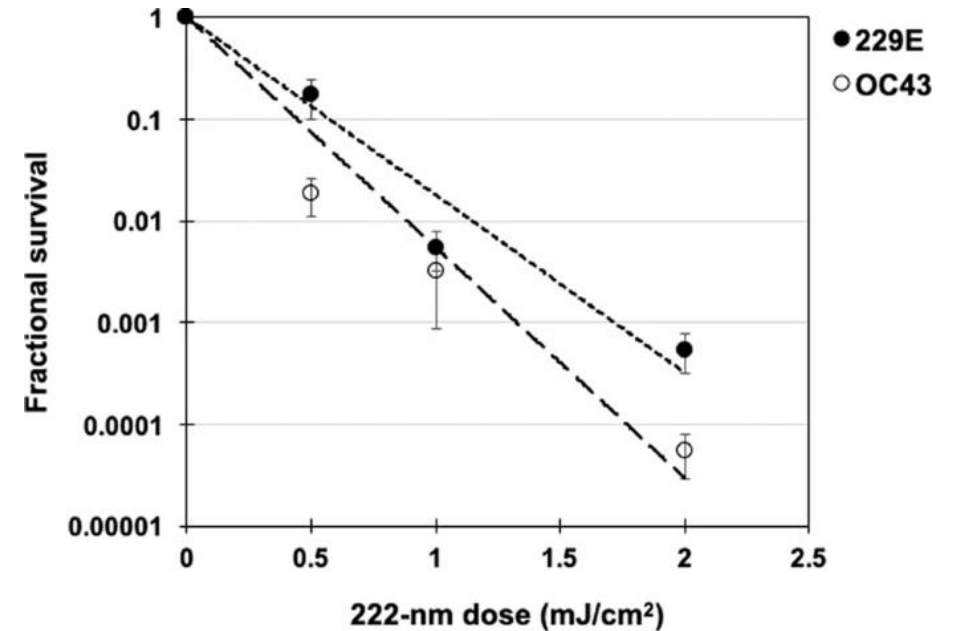
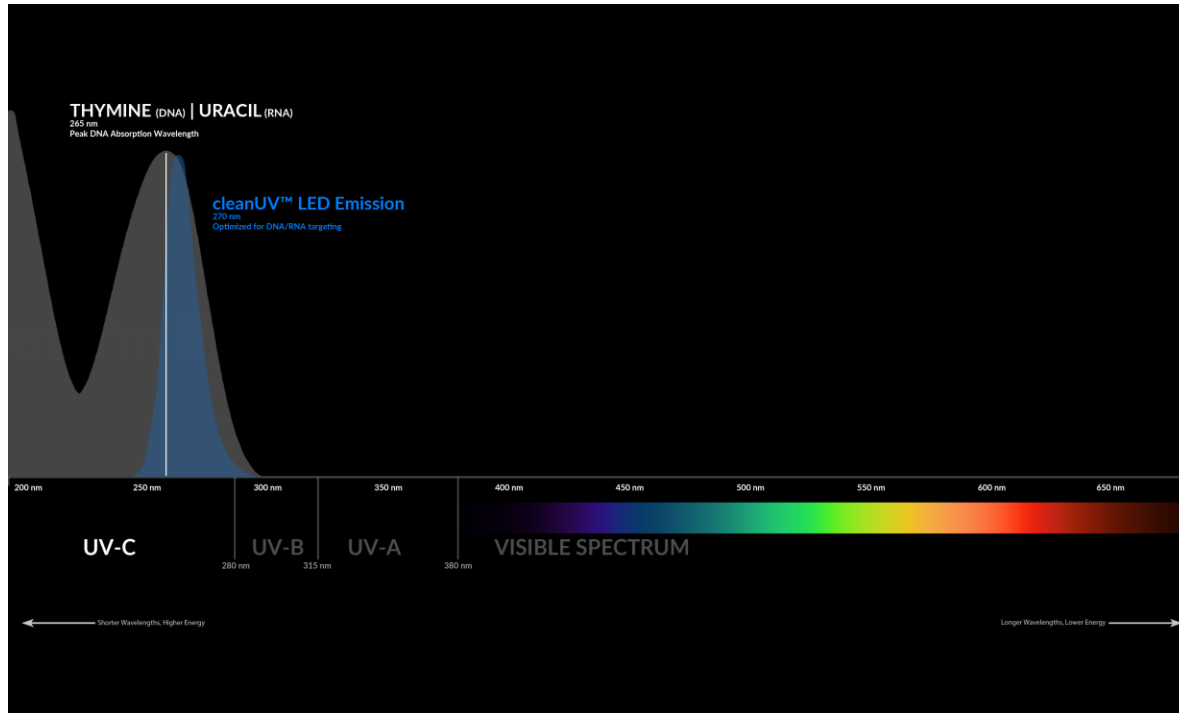
Block Diagram :-



Flow Chart :-



Why Far UV-C ?



- Germicidal UV light (254 nm) is effective but direct exposure can be a health hazard
- Far-UVC light (207–222 nm) efficiently kills pathogens potentially without harm to exposed human tissues
- Low dose inactivates 99.9% coronavirus*

* <https://www.nature.com/articles/s41598-020-67211-2>

Business Opportunities :-

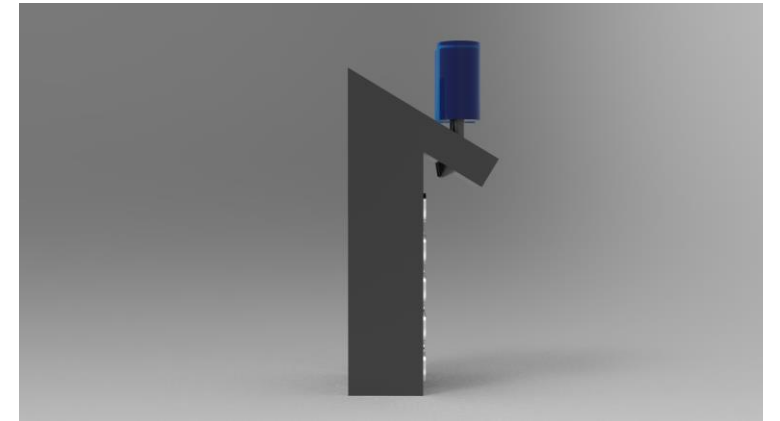
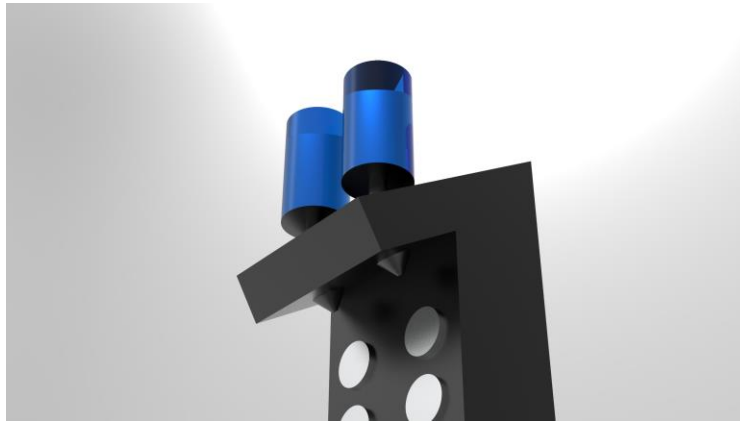
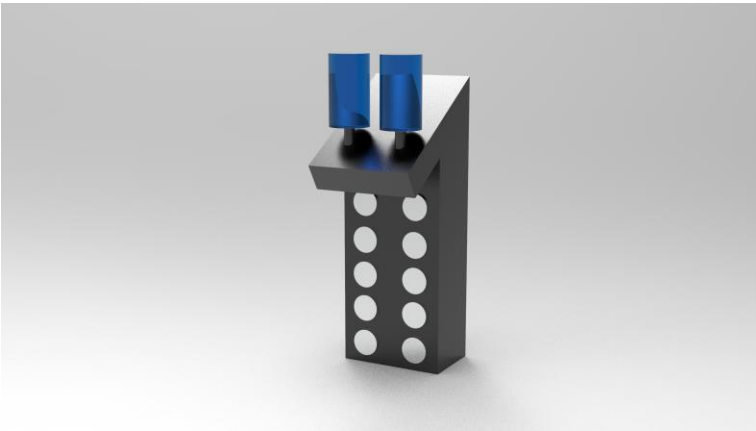
- In hospitals particularly in ICUs, isolation rooms
- Any public places that has numerous doors, lifts.
- In public transports during peak hours or during festival seasons.
- Maintaining the overall cleanliness of the environment.

Specific Use Cases :-

- Grab handles in public places/transport
- Door knobs
- Push buttons in lifts, ATM
- Side handle in staircase

Other models :-

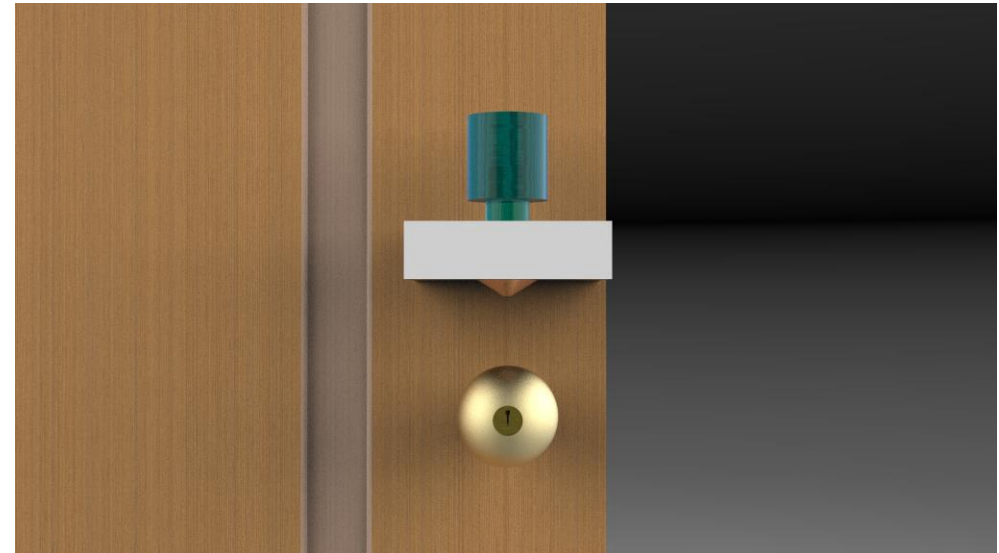
In Elevators, ATMs etc.



- Checks for no obstacle
- Automatically sprays a small amount of disinfectant liquid
- In-built dryer on the top dries away the excess disinfectant liquid after predefined time

Other models :-

In door knobs



- Checks for no obstacle
- Automatically sprays a small amount of disinfectant liquid
- In-built dryer on the top dries away the excess disinfectant liquid after predefined time

Thank You

