Pathogens! - No place to hide

ELECTROSTATIC DISINFECTION MACHINE

Designed and Developed by
CSIR-CSIO, Chandigarh
under the
CSIR Mission Mode Programme
FOOD AND CONSUMER SAFETY SOLUTIONS
FOCUS

Contact Details;
The Director,
CSIR-Central Scientific Instruments Organisation
Sector 30 C, Chandigarh - 160 030
Email: director@csio.res.in
Phone: 0172-2657190 (200, 400), Fax: 0172-2657267
Website: http://www.csio.res.in
CONVENTIONAL vs ELECTROSTATIC DISINFECTION

- 180° area coverage
- Bigger droplet size
- Not target oriented
- Off-target losses
- Non-uniformity
- No back deposition
- Applicable for low viscous fluids
- Less efficient
- Low accuracy

- 360° area coverage
- Smaller droplet size
- Target specific
- Minimum losses
- Uniform coverage
- Front and back deposition
- Applicable for all fluid types
- 7-8 times more efficient
- High accuracy

Socio-economic Impact
The developed technology has a direct impact on social and economic life, which provides healthy lifestyle by preventing pathogens growth. It has wide application in airports and railways, hospitals and healthcare facilities, public transport, work place and offices, poultry, defence artillery, hotels and catering, food commodities and many more.

SPECIFICATIONS

- Flow rate = 110 ml/min
- Droplet Size = 10-20 µm
- Air pressure = 2-3 bar
- Operating voltage = 1.07 kV
- Spray coverage = 25°-35°
- Efficiency¹ = 70-75%
- No. of nozzles = Single headed
- Tank capacity = 10 litres
- Materials usage² = Reduced by 50-60%
- External air supply = Required
- Uniformity coefficient = 1.71
- Battery usage hours³ = 10-12 hours

¹Compared to traditional application methods including wiping.
²Compared to misting, sprayers and floggers.
³Once fully charged (600 mAh) battery.

Power source for charging of liquid and air compressor is 9.0 Volts DC battery and 220-240 Volts AC (mains operated) respectively.
Students miss on average 4 days per year due to illness.
Teachers miss 5 days per year due to illness.
7.7 Employee sick days per year.
Only 50% of space in hospitals is effectively disinfected.
Approximately 85% of wheelchairs in hospital are contaminated.
More than 50% of beds and mattresses are contaminated.
Approximately 92% of curtains are contaminated even after one week of laundry.
$225 Billion productivity loss to businesses.
Don’t Just Control Infections! Prevent Them

APPLICATIONS

Workplace and Offices

- Tables, Chairs, Desks, Doors, Walls, Lockers, Beds, Wheelchairs, Furniture, Carts, Almirah

Hotels and Catering

- Disinfection and sanitization is the utmost priority in this sector

Airports and Railways

- Indian railways transports about 14 million passengers on 9000 trains everyday

Poultry

- To cure bacterial diseases, histoplasmosis, Avian Influenza

Fruits and Vegetables

- 21 million cases of stomach flu each year

Public transport

- Rapidly growing with an annual growth rate of 10.5%

Healthcare

- 23,582 Government Hospitals, 25,650 Primary Health Centres, 5,624 Community Centres

Overdose

- Charged spray droplet reduces overspray and other ambiguities

Uniformity

- Electrostatic disinfection machine uses less material and achieves more uniform coverage

Droplet Size

- Produces uniform droplets, which is more effective in killing the pathogens

Efficiency

- 7-8 times more efficient than conventional spraying