



Preventing infection through sanitization

A group of high school students from the Discover STEM program went on a mission to limit the spread of viruses

There are ancient Indian customs to wash your hands and feet before you enter any home or office. These traditions were put in place to reduce the spread of infections and help with sanitization. Such traditions were abandoned as people's lifestyles changed.

Newer homes and offices do not offer these facilities (for cleaning and sanitizing) at the entrance. The advent of the global pandemic did cause some changes as homes and offices started keeping hand sanitizers at the entrance. What if it were possible to automate such sanitization? This article explores one such mechanism.

Research has shown that just a single doorknob can spread germs throughout office buildings, hotels and health facilities within hours. By some estimates, people in industrialized nations spend close to 90% of their time indoors. As they move about indoors, they are constantly opening and closing doors – to conference rooms, restrooms and others.

Each contact has the potential to leave behind and pass along droplets from a sneeze or cough. The mechanism for such transmittal is fomites. A fomite is an inanimate object that carries and spreads diseases. In fact, in a study done by Penn State University, a swab of a local café door showed that fourteen different colonies of bacteria were living on the knob. Each colony contained more than a million bacteria.

If you think about it, most of us have avoided the flu and cold over the last two years because of our increased focus on masking and sanitizing. As the pandemic wanes, this focus will diminish. Soon, we will be back to the pre-pandemic ways of getting viral infections. It does not have to be this way.

A group of high school students near Dallas, from the Discover STEM program, went on a mission to limit the spread of pathogens and viruses by automatically sanitizing door handles. The patent pending mechanism they invented is to utilize UV-C light, a proven cleanser of harmful pathogens, to sanitize door handles at regular intervals.



The process of sanitization includes a motor that moves a UV-C ring along the door handle. The product has a proximity sensor that pauses sanitization when triggered. Once the sanitization is completed, the handle is, once again, ready for public use.

The time taken to complete the cleansing is less than one minute. As a result of this cleansing, 99.9% of germs are eliminated from the door handle. The LEDs that are used in the UV-C ring are specifically tested for eliminating the COVID-19 virus. The cabinet that houses the UV-C ring is 100% leak proof – thus making it completely safe to use. UVSET CEO, Manish Rangan says, “Our mission is to sanitize every touch and our vision is to create a germ-free society – UVSET SAFETouch is the first step towards reaching that end.”

The mechanism installs on any, standard, door handle. This DIY installation takes only a few minutes. It has a rechargeable battery that has a span of 27 days between charges. Since it is made of high-quality, durable, material the required maintenance is minimal. The contact information for UVSET can be found on website: www.uvsetinc.com. UVSET has shown us that it needs determination and perseverance to make a difference – whether you are 17 years old or 70 years old.



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