

This biodegradable mask resists pathogens, and has the goodness of neem, turmeric & basil

Synopsis

The 'pavitrapati' mask can be reused up to three washing cycles.



The Defence Institute of Advanced Technology has developed a cotton mask using a herbal extract. (Representative Image)

RELATED

Say yes to masks, digi payments: Amitabh Kant wants people to embrace the new normal

Don't need a N95 respirator to cover your face. Cloth masks may prevent coronavirus spread too

Widespread, regular use of face masks may help prevent a second Covid-19 wave, shows study

PUNE: The **Defence Institute of Advanced Technology (DIAT)** here on Sunday said it has developed a cotton mask using a herbal extract, and claimed that it acts as "virus-neutraliser and resists pathogens effectively.

A herbal extract obtained from neem oil, turmeric, tulsi (holy basil), ajwain (carom seeds), black pepper, gum arabic, clove, sandalwood and saffron has been used in the non-woven **nano-fibre** of this three-layered **biodegradable mask**, named 'pavitrapati, a patented invention, DIAT's metallurgical and materials engineering department Prof Balasubramanian K said.

This provides "antibacterial and antiviral properties", he claimed, adding that these additives are immunity-boosting agents for self-care, as per guidelines of **the AYUSH Ministry**.

"The product is antibacterial, anti-fungal, antiviral, porous, super-hydrophobic (outer layer of mask), hydrophilic (inner layer) and biodegradable and it will be very useful in our fight against COVID-19, said Balasubramanian.

Its samples were tested for air permeability/ breathability, nano-fibre mat porosity, biodegradability and mechanical properties as per the American Society for Testing and Materials standards and the results are highly impressive, he claimed.

"It was found to be capable for use as surgical masks, and can be discarded after a single use or after soil exposure," he added.

DIAT has developed 'Pavitrapati' a biodegradable face mask based on Nanofibres of Ayurvedic products which acts a v.
<https://t.co/f7cIrNPbmv>

— PRO Defence Pune (@pune_pro) [1592207591000](https://t.co/1592207591000)

The Pune-based DIAT is a deemed university supported by the Defence Research and Development Organisation (DRDO).

"The samples were tested to understand the de-naturing capability of protein molecules, and the results demonstrated that the ayurvedic natural herbal extracts interacted and neutralised or killed the aminoacids (that are normally constituents of the shell of virus pathogens) instantly," the official said.

Impressed by the results, three major mask manufacturing companies have approached DIAT and signed the transfer of technology (ToT) and non-disclosure agreements with the deemed university for mass production, he said.

The product can be extended for infection prevention and control as the personal protective equipment (PPE) and for waste management purpose, he said.

It can be used as a garment, gloves, gown, and for face protection and head cover, the official said.

Unlike other masks which are made of synthetic material and are non-degradable in nature, the 'pavitrapati' mask is cotton-based, bio-degradable and can be reused up to three washing cycles.

"The biodegradable nanofibre mat/membrane finds application as a protective membrane for PPE. This technology has proved that the non-woven membrane between the woven fabrics supports to block droplets, splashes, sprays, bacteria, and viruses," he said.

Cancelled Events, A New Global Greeting: The Many
Firsts That Came With The Novel Coronavir...



AUTOPLAY 1 of 7 < >

A New World

The coronavirus has shut down countries, offices and even some famous tourist places for the first time ever. There have been some other firsts that were added to the list.

Download ***The Economic Times News App*** to get Daily Market Updates & Live Business News.
