

4S mask innovation for full face protection

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Vadodara: It's a complete mask — from a face shield to ear pads — so that no sensory orifice is left open in the face, inviting unwanted pathogens inside the body.

And the product even surpasses the benchmark N95 standards while being comfortable to wear.

Meet 23-year-old Hetika Shah from Halol in Panchmahal district who has designed what she has named the '4S Shield'. "It was named so as it covers four body parts with sensory organs — the mouth, nose, ears and eyes. Pathogens can enter through these and the face shield covers all," Shah told TOI. The N99 specification shield developed by Shah uses nanofiber fabric that she has developed herself.

Eyeing to kickstart her bu-



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ness of chillers, she also dabbled with safety equipment like face covers and gloves that she designed for people working in waste energy to protect them from toxic fumes generated during the processing.

But as fate would have it, the Covid-19 pandemic ensured that safety gears became her priority as she already had in-

sight into material and methods to make them. Shah said that she also contacted experienced doctors treating Covid-19 patients for more insight.

"The elastic of the mask as well as the safety goggles are on the ears. Doctors told me that their ears pained after wearing these for long hours. It worst for doctors who wore specta-



cles. Apart from the pain, glasses too got scratched due to the safety goggles," said Shah.

"I procure the raw material and provide it to the person who makes the N99 grade fabric for me," said the young entrepreneur who has even started getting orders for such face shields with N95 specifications and even non-woven fabric. Presently she makes around 30,000 masks and face shi-

How these masks differ from others?

The 4S shield has to be tied behind the head and does not have strings over the ears. The ears are completely covered with a small opening for cables of headphones. There is an opening in the fabric for eyes and it is sealed with a plastic sheet.

elds a day, including over 1,000 4S Shields.

Apart from these, Shah also makes N99, N95 and three-ply non-woven fabric masks. All her products have necessary certifications. Her efforts have been supported by the Student Startup and Innovation Policy of the state government as well as the Entrepreneurship Development Institute of India.