



CONTRIBUTING TO MAKE INDIA ATMANIRBHAR IN TRUE SENSE



PROF VC MALSHE
DIRECTOR-TECHNOLOGY,
NICHEM SOLUTIONS

To increase the life of fruits and vegetables, Prof VC Malshe stumbled upon the idea of catalytically destroying ethylene and converted it into a product

For years, 74-year-old scientist Prof VC Malshe has been working on water and environmental sciences. A retired professor of paints technology from ICT Mumbai (erstwhile UDCT Mumbai) is the Director Technology in NiChem Solutions. Years ago, he noticed the country is wasting (and continues to do so) about 30% of its agro produce due to inadequate handling, transportation, storage facilities and absence of cold chain in the country. In an effort to increase the life of fruits and vegetables, he stumbled upon the idea of catalytically destroying ethylene. The idea was soon converted in a product and a patent was applied in 2009. Prof VC Malshe.

In the following years, the same product underwent morphological changes and emerged as a catalyst that could generate hydroxyl free radicals. These are potent oxidising agents and hence are able to destroy bacteria, fungus and viruses in physical contact. During the pandemic, the country started importing face masks that would be able to destroy 95% viruses and could be repeatedly washed for 20 washes without losing effectiveness. These were highly priced and involved foreign exchange. There was no local technology in sight that could have served millions of Indians at an affordable price.

Extending the idea, the catalyst

was converted in a coating that could destroy bacteria and viruses on contact. The coating was tested for 25 washes first and then for 50 washes and was found to retain 100% of the activity. The best part is, the coating did not change the appearance of the mask, is soft and smooth, does not obstruct the breathing process and there is no discomfort to the user even if the mask is worn for a long time.

In the first phase of development, the masks were distributed free to friends and business associates. As a social responsibility, these were also gifted to doctors, health workers, volunteers, police men and house-keeping staff of societies.

It is a pride to share that NiChem Solutions received *The Star SIES SOP Award 2021* and *The All India Export Excellence Award 2021*. The management of NiChem Solutions is committed to develop indigenous products for the country. They look forward to carrying on the work for the benefit of the last person in the chain, at an economical cost. The utility of the technology is being explored in other fields like currency paper, writing paper, paints, plastics storage tanks, treatment of hospital linen, cosmetic applications and pharmaceutical applications. NiChem aims to continue contributing to make Bharat Atmanirbhar in true sense.