

SooperCoat FOR FABRICS Virus Destroying Solution

Self Disinfecting Solution For Fabrics #SooperCoatForFabrics

Innovative Hygiene Technology for Maximum Protection.

One virus has completely changed the way we live. Making health and hygiene, everyone's top priority. In today's times, people across the globe are anxious to stay safe from the dreaded Covid-19 virus, and are in search of everyday solutions.

Sooper Products offers a range of solutions that are created using innovative hygiene technology to safeguard people. Whether you want to breathe easy from behind a mask when you step out or disinfect surfaces and objects with UV light, we have you covered. With Sooper Products on your side, you can rest assured that your health risk is significantly reduced. And so is your stress.

The **SooperCoat For Fabrics** protected by **Organic 121**, uses the advanced nanotechnology to hamper the growth and spread of infections through fabrics. The embedment of antimicrobial nanoparticles into the fabrics and the coating process ensures that any microbe that comes in contact with the fabric is killed. It also makes the fabric resistant to wear and tear even after repeated wash cycles.

As we go about our daily lives, knowing fully well that the fight with virus is going to be a long drawn one, the best we can do is stay highly protected always with **Sooper Products**.

Protect and prevent from Coronavirus (COVID-19)

The specially treated antimicrobial fabrics are most beneficial in making PPEs for healthcare professionals, sportswear, shoes, upholstery and military gear. SooperCoat for Fabrics is eco-friendly, easily washable and durable. As it is hypoallergenic, it suits all skin types.

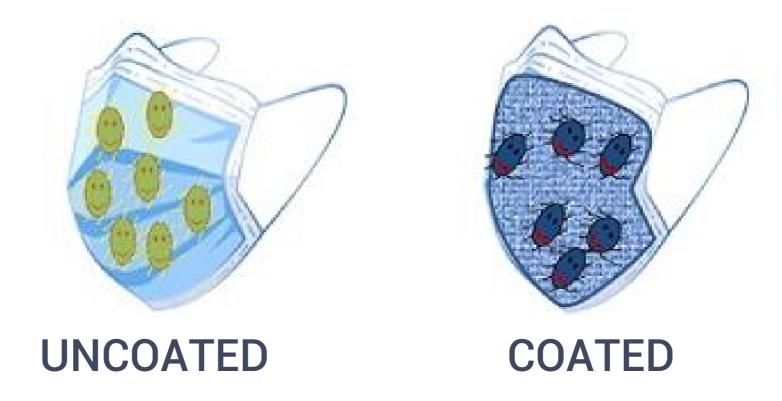
PROTECTED BY

How it works?



Nanotechnology could be applied to textiles used in personal protective equipment and face masks to render antimicrobial properties that can kill any microbe upon contact with the fabric. This will provide additional safety and protection from spread, from touching. It will also address the problem arising from regular change of PPE and inconvenience caused due to precaution.

The long-term effect of SooperCoat on Fabrics resolves the hygiene gap



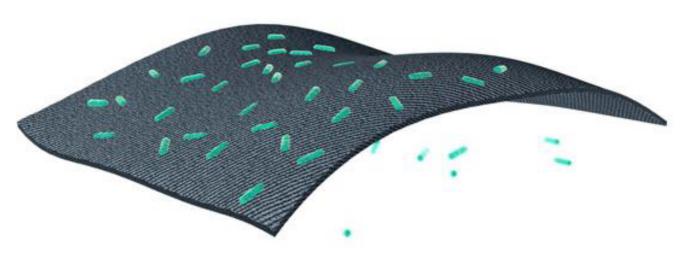


Why SooperCoat?



Textile without coating

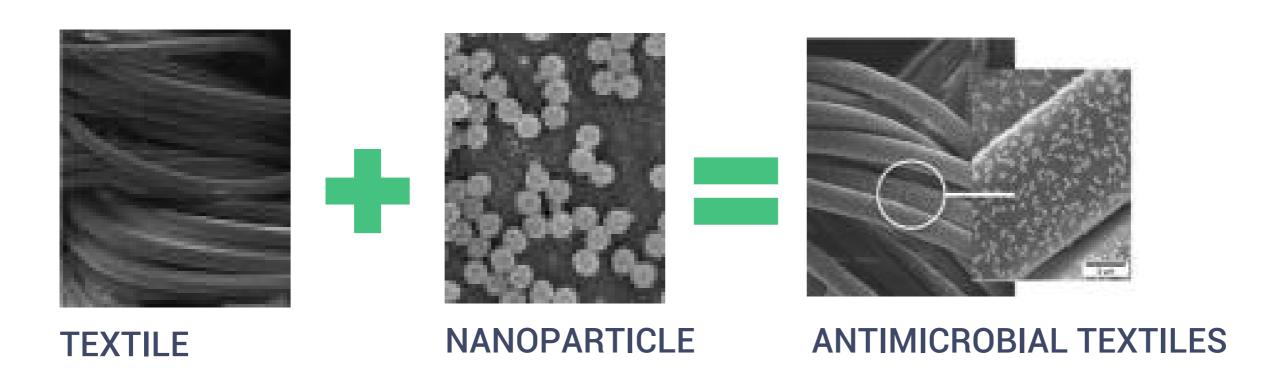
Textile with nanocoating



The fabric harbors microbial layer that spreads freely

The nanocoating imparts antimicrobial properties to the textile making it odor free

Tapping the potential of nanotechnology, we have fabricated functionalized textiles embedded with antimicrobial nanoparticles to inhibit growth and spread of contagious infections through fabrics.

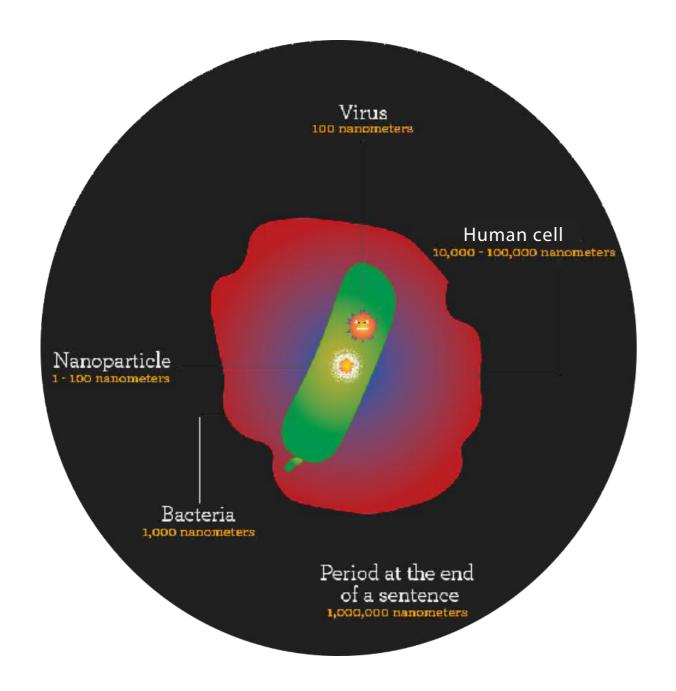


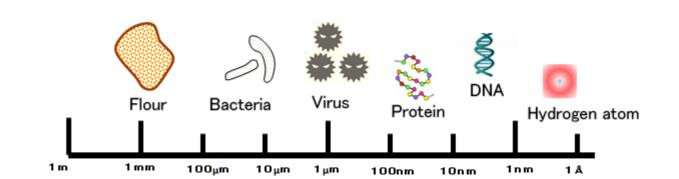
Using our proprietary process, we have designed functionalized textiles with antimicrobial properties suited specifically for medical personal protective equipment. Our synthesized nanoparticles as well as the coating process has been optimized to ensure cross-linking of the nanoparticles on the fabric or abrasion resistance and durability even after several wash cycles.



Why SooperCoat?







Nanoparticles are ultra fine particles of diameter between 1 to 100nm. They are not visible to the eye and can be observed only under electron microscopes. Due to their size the physical and chemical properties are very different from bulk particles such higher surface area by volume ratio, higher surface charge, conductivity etc.



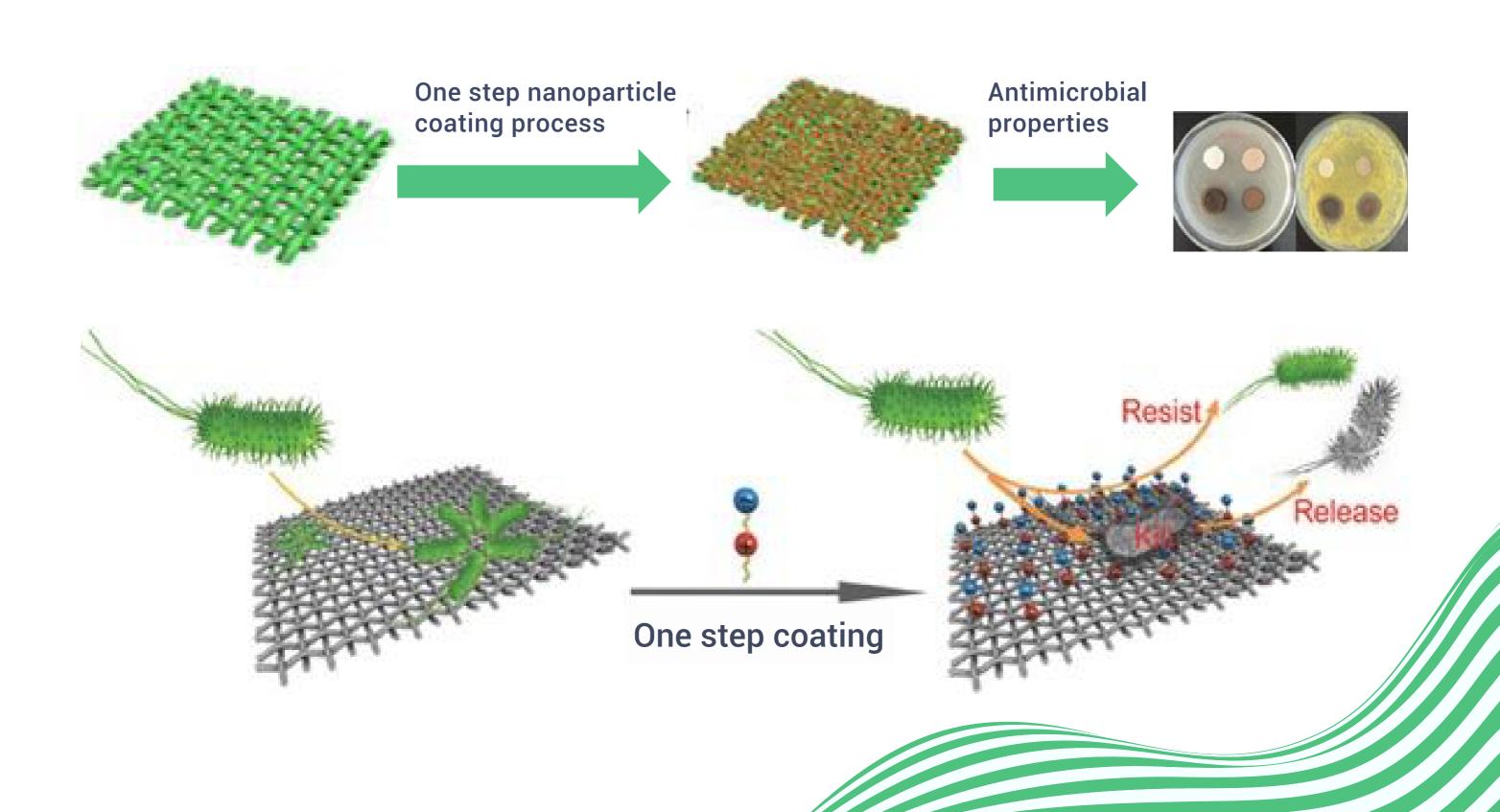






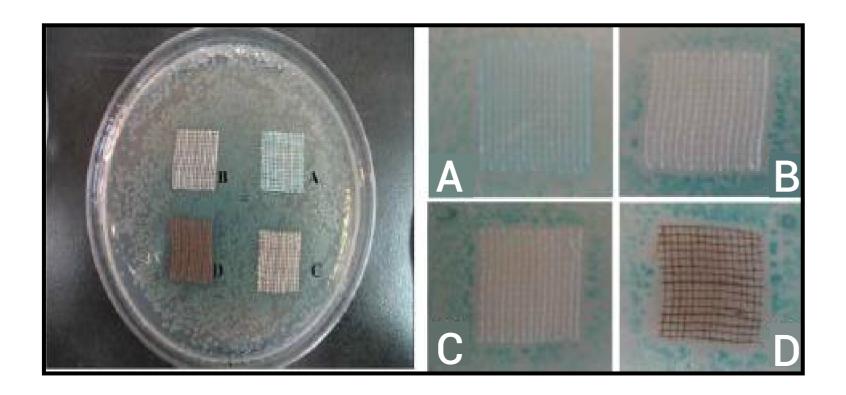


Our revolutionary one-step coating process is an easy to apply approach for functionaliing textiles with nanocoatings for superior dirt and microbe resisting properties tested extensively at our lab.



SuperCoat Advantages





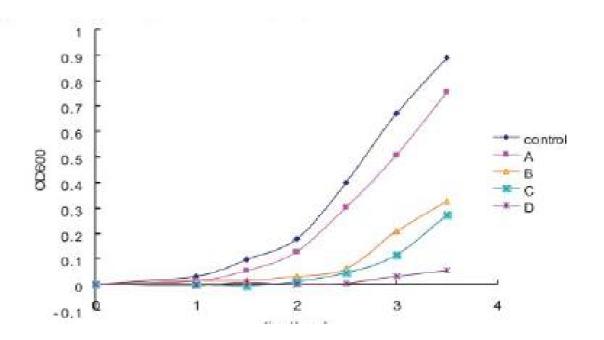
Growth inhibition of bacteria with coated cotton fabric on agar plate

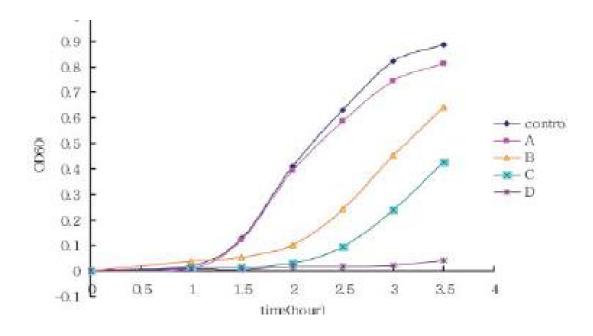
A: Uncoated cotton fabric

B: Coated fabric (low loading)

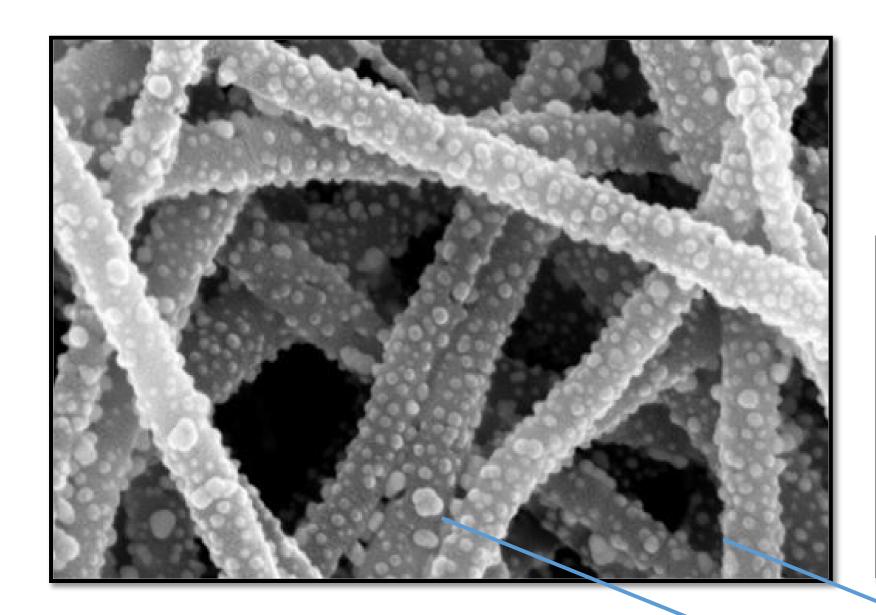
C: Coated fabric (Medium loading)

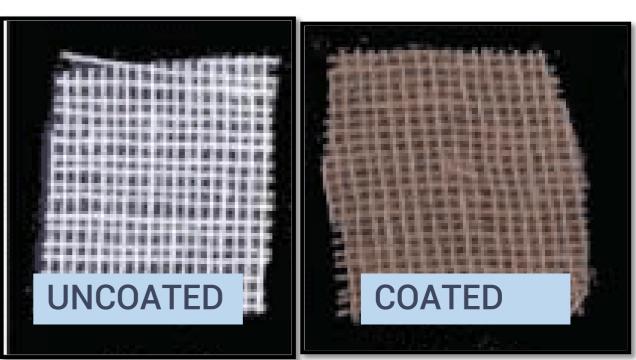
D: Coated Fabric (High loading)





Antimicrobial effects against S.aureus and E.coli





Nanoparticles

Cotton fabric

Electron microscopic structure at high resolution and magnification showing antimicrobial nanoparticles crosslinked with cotton fabrics for longer durability and resistance

Application Areas





APPARAL



SPORTS WEAR



MEDICAL PPE



SHOE TEXTILE

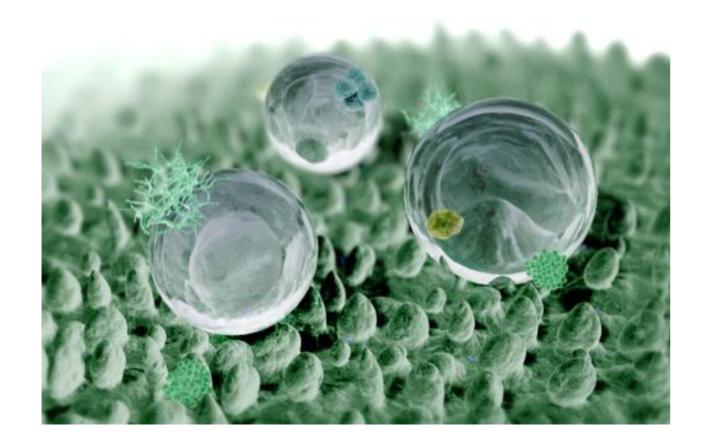


FURNITURE TEXTILE



MILITARY TEXTILE

The self-cleaning lotus effect



Nanopatterned surfaces can exploit the Lotus effect, causing them to be hydrophobic enough for water droplets to ball up and roll off the fabric surface, removing dirt particles in their path



Self cleaning effect on lotus

The age of smart textiles







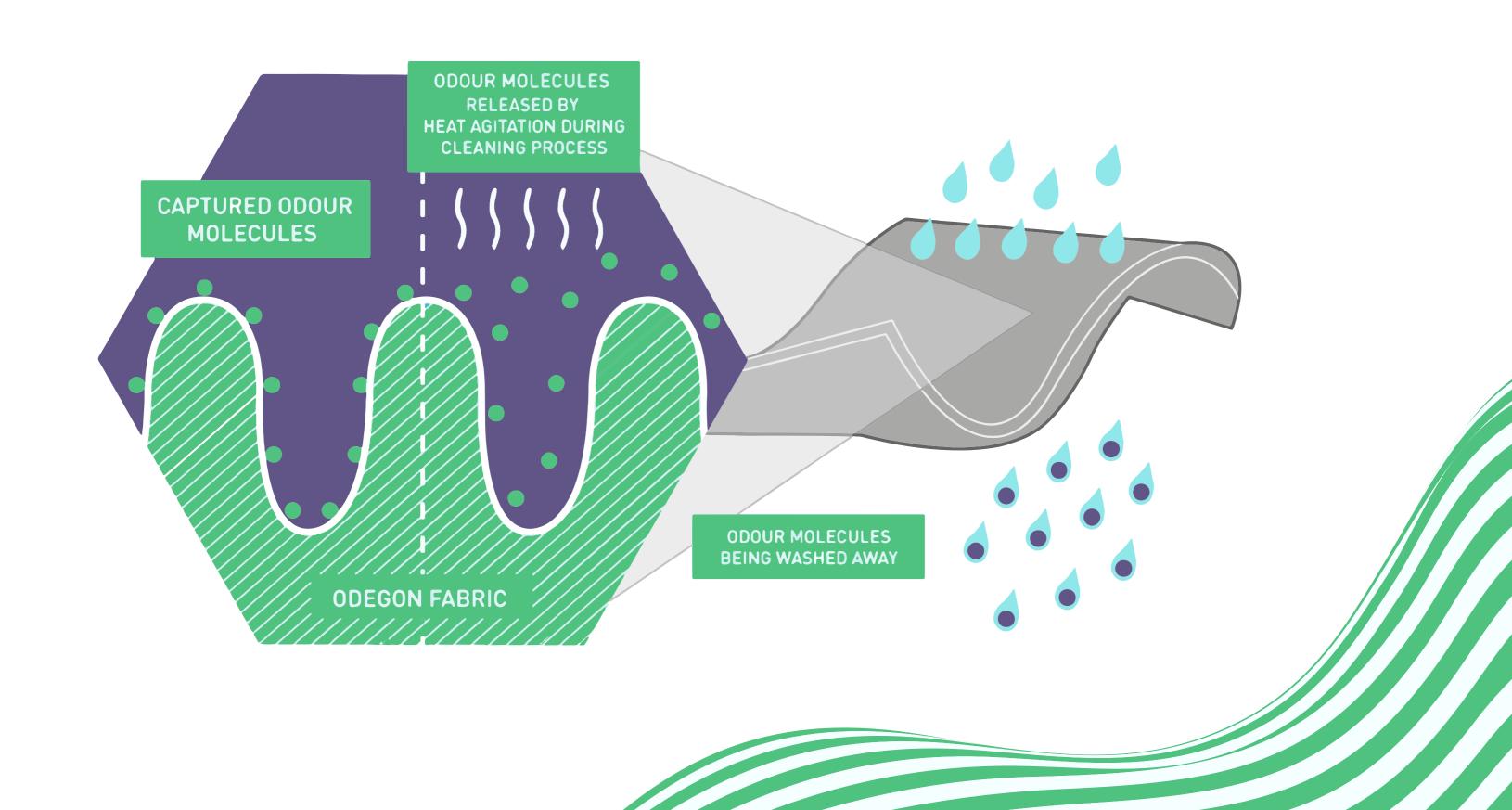






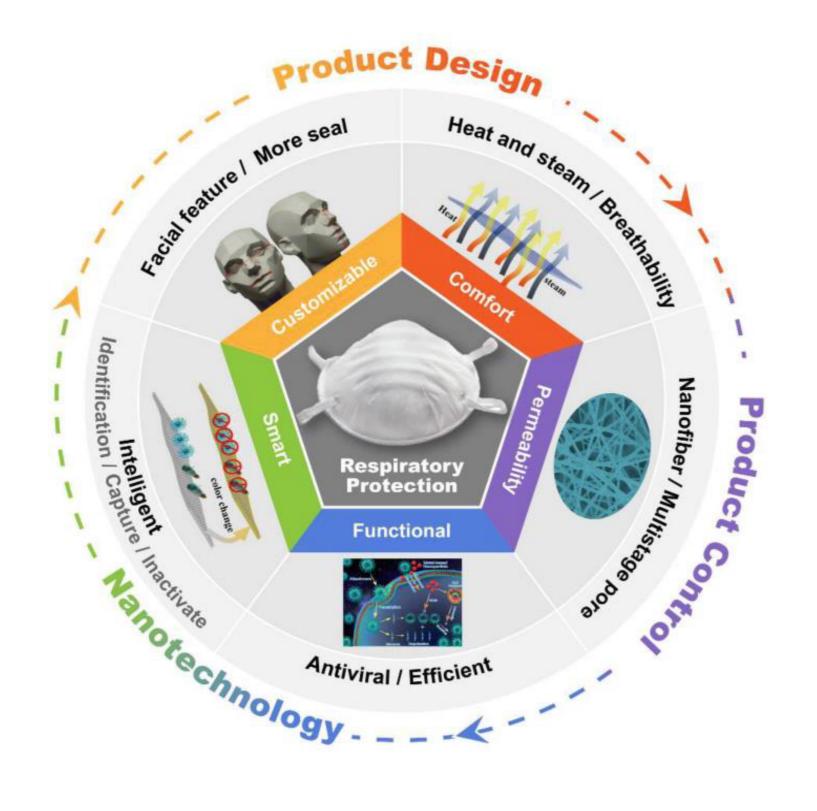


Our nanoparticle fortified textiles are extremely durable and abrasion resistant allowing them to retain antimicrobial properties even after several washes. They are also suitable for all skin types without causing any allergic reactions to sensitive skin. With dirt and water repelling properties, these are indeed

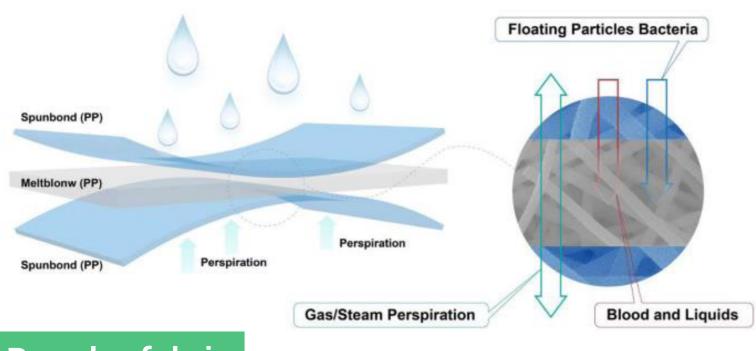


An intelligent, antiviral protection

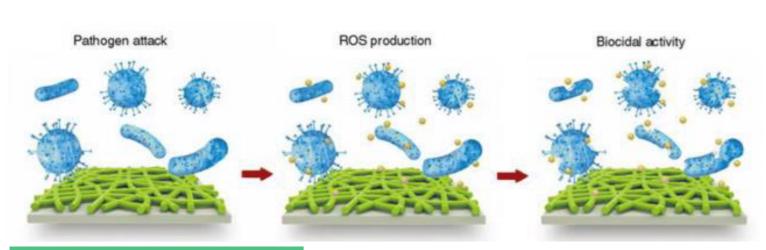




SuperCoat has been adapted to human face, skin and body, and to control the unwanted effects such as accumulation of heat and moisture during usage. To improve the filtering efficiency and breathing without risks, we have modulated structural parameters such as diameter of the fibers, size of the holes and thickness of the filtering materials. Moreover application of nanotechnology has enhanced the entrapting potential, antiviral capabilities and intelligence of protective fabrics.



Regular fabric

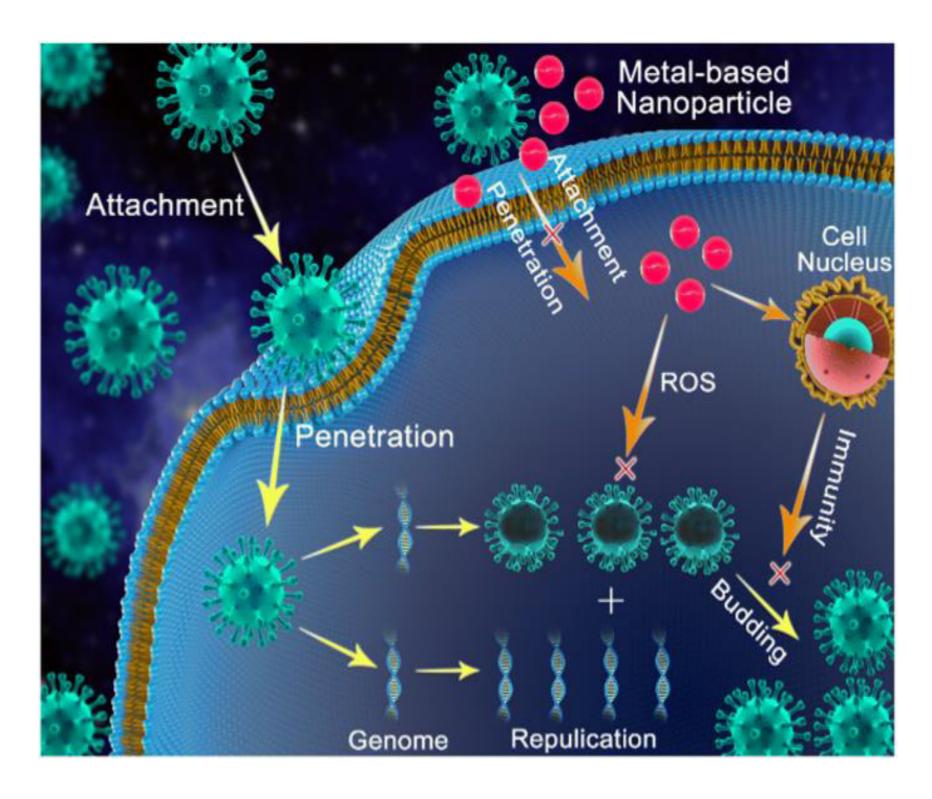


Intelligent fabric

In most of the regular protective fabric, the protection performance is mainly determined by the filtration characteristics of the filled non-woven layer(including filtration thickness, packing density, fiber diameter, fiber charge) and particle characteristics (diameter, density and velocity). If the surface of the protective fabric is contaminated with droplets during the practical applications, viruses could penetrate through the moist fabric. Imparting antiviral properties to the fabric can reduce the risk of cross-infection or secondary infection during the usage or handling.

An intelligent, antiviral protection

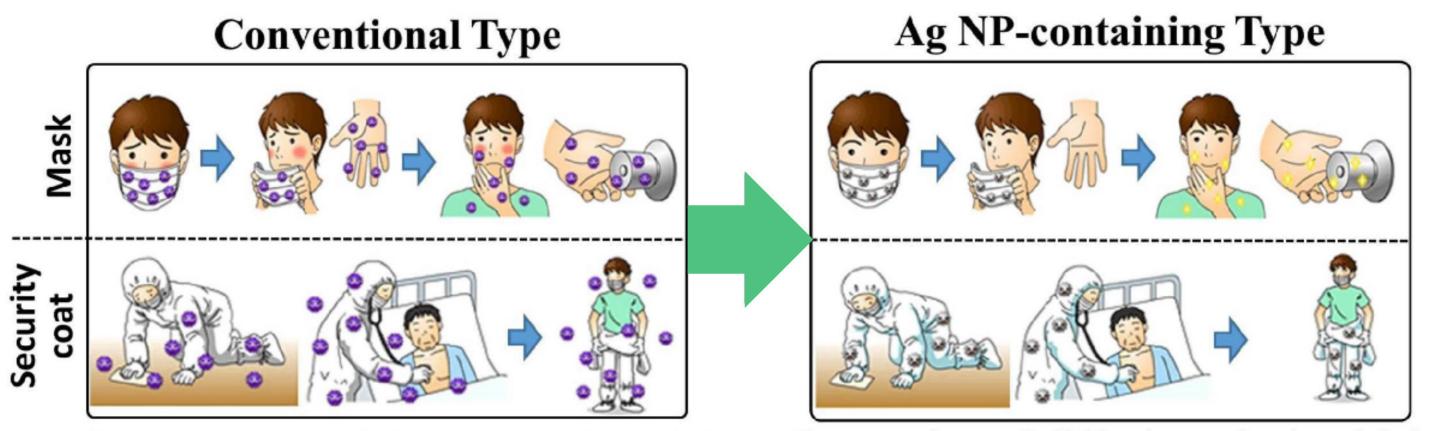




Antiviral action of metal nanoparticles occurs in three stages

- (1) Inhibiting the virus attachment penetration
- (2) Generation of highly reactive oxygen species and radicals which destroy the structure and function of viral proteins and nucleic acids
- (3) Stimulating immune response in host. Harnessing the powerful potential of nanotechnology, we have developed coated fabrics which are antimicrobial in true sense.

PROTECTION OF HEALTHCARE WORKERS



Enhancement of diffusion of microbials

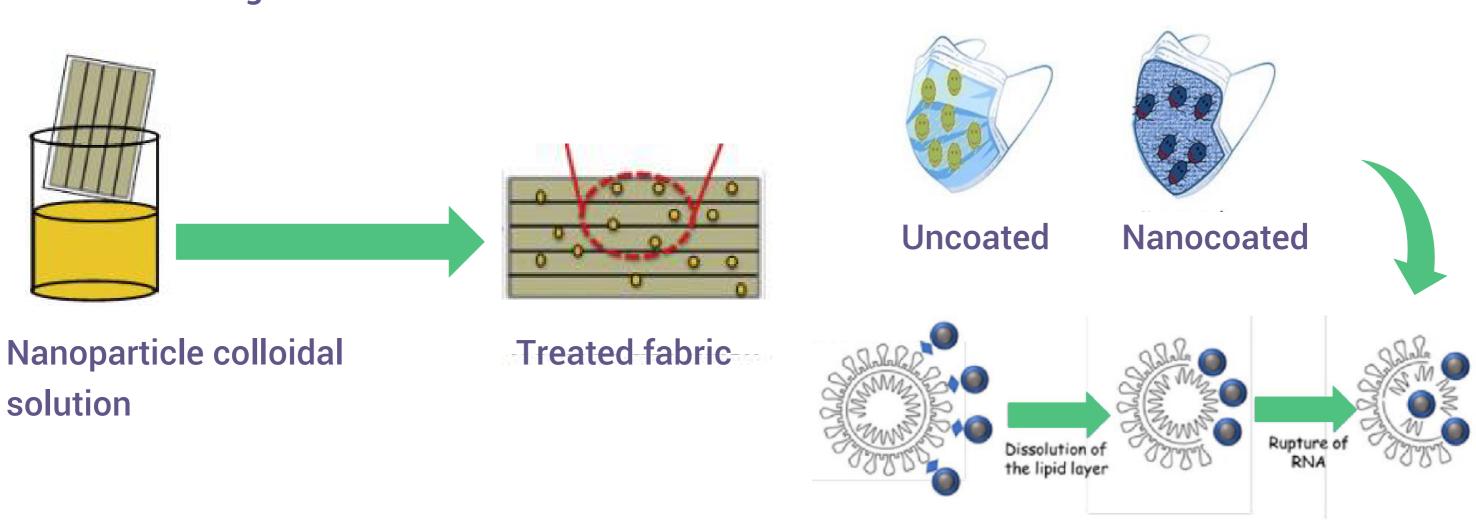
Prevention of diffusion of microbials

Antiviral nanoparticle coatings are a savior for healthcare workers by providing round the clock protection from infected medial consumables and direct patient contact.

Antiviral coating



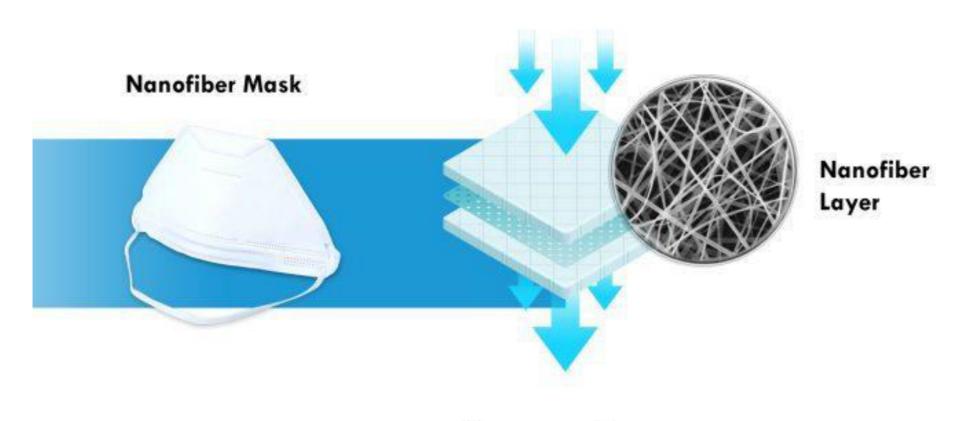
Fabric soaking



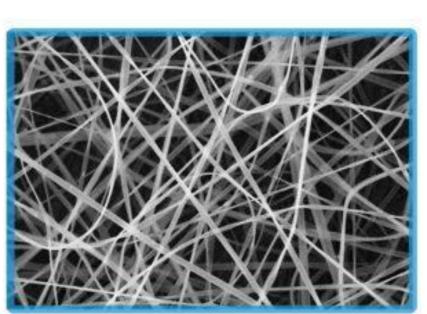
CONTAMINATION FREE

RE-USABILITY

NO CROSS CONTAMINATION



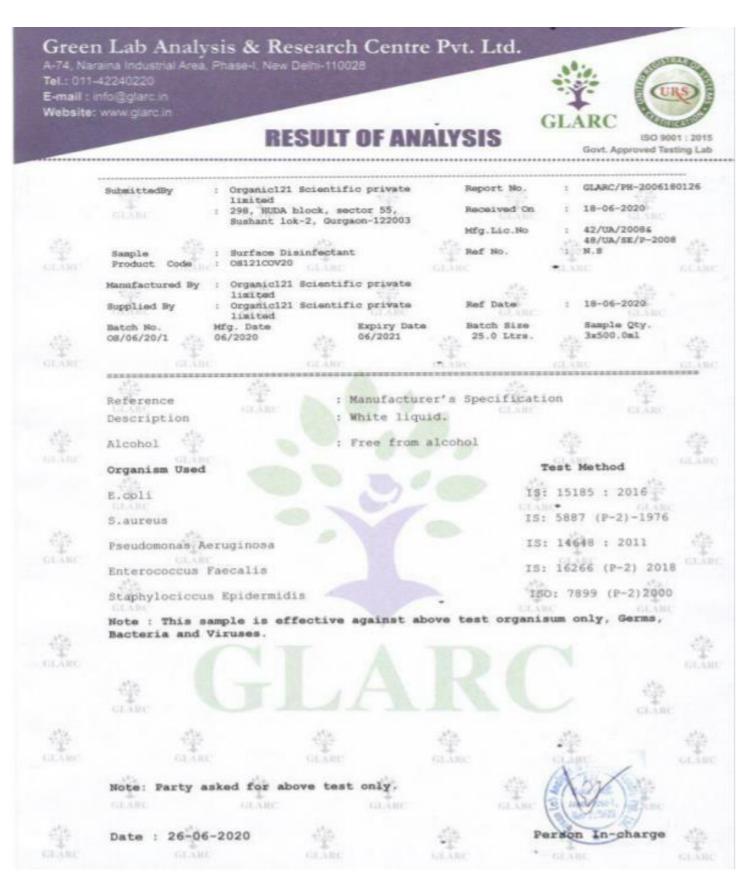
Non-woven Layers



- 99.9% Filtration Efficiency
- More Comfortable
- Easier Breathing
- Less Layers

Certificates







| S.No. | Parameter | Test Result | Protocol |
|-------|----------------------------------|-----------------------------|------------------------|
| 1 | pН | 7.5 | ALPHA 22nd Edit |
| 2 | Total Bacterial Count | 99.996% elimination | IP 2018 |
| 3 | Surface disinfection test | No growth up to 18 hours | Hard Surface Carrier |
| 4 | Suspension Test Growth Detection | No Growth | AOAC Use-dilution test |
| 5 | Total Viral Count | 99.9996% elimination | IP 2018 |

| Untreated : Conc. of | Inoculums on untreated sa | ample at 0 hours (A): | 1.12 x 10 ⁴ | I.og = 4.04 |
|--------------------------|--------------------------------------|--------------------------------------|------------------------------------|--------------------------------|
| Untreated: Conc. of | Inoculums on untreated sa | mple after 10 minutes | s (B): 1.16x 10 ⁴ | Log = 4.06 |
| Sample Identification | No. Bacteria on treated sample(C) | Log of Bacteria on treated sample | Antimicrobial Activity R Log B- CQ | Microbial Kill (%Reduction) |
| Covid Coating | <10 | / <1 | >3.06 | >99.9 |

Staphylococcus auereus 6538

| Intreated: Conc. of Inc | Log =4.07 | | | |
|--------------------------|--------------------------------------|--------------------------------------|---------------------------------|--------------------------------|
| Intreated: Conc. of Inc | Log = 4.08 | | | |
| Sample Identification | No. Bacteria on treated sample(C) | Log of Bacteria on treated sample | Antimicrobial Activity R Log B- | Microbial Kill (%Reduction) |
| Covid Coating | <10 | <1 | >3.08 | >99.9 |

E.Coli ATCC 8739

| Quantitative Assessmen | nt of Activity - JIS Z 280 | 1: 2010 | | |
|--------------------------|--------------------------------------|--------------------------------------|---|--------------------------------|
| Untreated; Conc. of Inc | Log =4.07 | | | |
| Untreated; Conc. of Inc | Log = 4.10 | | | |
| Sample Identification | No. Bacteria on treated sample(C) | Log of Bacteria on treated sample | Antimicrobial Activity R Log B-CQ | Microbial Kill (%Reduction) |
| Covid Coating | <10 | <1 | >3.10 | >99.9 |

Pseudomonas aeruginosa ATCC 9037

SuperCoat for fabrics properties



| S.No | MICROBE | Initial bacteria count (CFU/ml) | Final bacteria count (CFU/ml) | Log reduction | %Reduction |
|------|-------------------------------|---------------------------------|-------------------------------|---------------|------------|
| 1 | E.Coli 10536 | 6.003 | 0.64 | 5.36 | 99.999% |
| 2 | S.Auereus ATCC 6538 | 6.54 | 1.186 | 5.26 | 99.999% |
| 3 | E.Hirae 10541 | 6.458 | 0 | 6.46 | 99.9999% |
| 4 | Listeria monocytogen es | 6.101 | 0.669 | 5.43 | 99.999% |
| 5 | Pseudomonas aeruginosa | 6.454 | 1.885 | 4.56 | 99.99% |
| 6 | Bacillus cereus | 5.966 | 0.556 | 5.441 | 99.999% |

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BY

Sooper Products

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