Iran Leverages Nanotechnology to Launch West Asia's Largest Face Mask Production Plant

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The Iranian government announced that it is to launch West Asia's largest N95 mask plant with a production capacity of 4 million per day, relying on electrospun nanofiber technology. The plant will reduce the demand for imports now that the world is in drastically short supply of face masks to manage the ongoing coronavirus outbreak.

Iran is to launch the largest N95 mask production plant in West Asia, aiming to address the widespread shortage of the protective gear in the country as the coronavirus continues to prey on the most vulnerable people, leaving a surging death toll in its wake.

The plant, located in the Eshtehard Industrial Park in the province of Alborz, is set to open in late April. "Owing to the vast knowledge and long experience of Iranian experts in nanotechnology, this new plant has been designed for a production capacity of 4 million masks per day to supply the bulk of the country's needs," said Ali Rabiei, the government spokesman.

According to other officials, the face mask output of the plant in Eshtehard, which could go beyond 4 million a day, would be double the current production capacity for the personal protective equipment (PPE) in entire Iran.

Lack of PPE has been a major issue for many countries currently grappling with the pandemic as reports have suggested that health staff in countries like Britain and elsewhere face acute shortages of such items in hospitals and care homes.

Iran, a country under a series of bitter US sanctions, has largely relied on homegrown efforts to fight the pandemic as the unjust and illegal bans have hampered the government's ability to import drugs and vital medical equipment needed to contain the disease.

Nanotechnology in Battle Against Coronavirus ...

About N95 Masks

Face masks are a particular type of personal protective equipment designed to reduce the respiratory exposure of the wearer to dangerous substances such as toxic chemicals or infectious particles. N95 masks are capable of blocking out at least 95 percent of the airborne particles larger than 2.5 microns, including particles or droplets carrying viruses and bacteria, thereby protecting people against respiratory tract infections and diseases.

About Electrospun Nanofibers

Nanofibers are the perfect filter material for the production of N95 masks, which not only do provide a very large specific surface area but they can also be functionalized with different chemically active groups to improve the efficiency of the masks in capturing natural nanoparticles (e.g., viruses), micron-sized particles (e.g., bacteria), and other particles (e.g., soot from diesel exhaust). Among various nanofiber production techniques, electrospinning is widely used for fabricating air filter media, because electrospun nanofibers have a remarkably high specific surface area with small pores, creating outstanding filter material with enormous capturing efficiency.

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