



## Editorial Note on Nanosciences and Nanotechnology

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Researchers and entrepreneurs in Nano sciences and nanotechnology are taking action to tackle COVID-19's global health emergency. Formerly, firms, and universities were designing and developing nano materials to combat COVID-19, which is still a global health emergency.

A universal and reusable system for virus deactivation for respiratory protection is needed. Metal & metal oxide nanoparticles play a pivotal role in the development of simple and rapid immunodiagnostic methods aimed at identifying Corona cases.

An effective method which can effectively identify Corona cases thoroughly is to develop simple and rapid immunodiagnostic methods based on nanotechnology. A reusable virus deactivation system for respiratory protection is a necessity of the hour. Nano cellulose, which is obtained from various sources and biodegradable, can effectively remove particles as small as a virus and is easily inhaled, so that silver nanoparticles and nanocellulose could be combined. Coronaviruses are single-stranded RNA viruses that have a crown-like form and have a diameter of 120 nanometers. Bats and wild birds are hosts of the virus, which is susceptible to mutation and recombination. It can infect humans and animals as a result of the gene changes, creating COVID-19. These viruses are likely to have started in bats and moved across China's meat markets in late December 2019. Because its genome sequence is similar to that of SARS-CoV, the virus that caused severe acute respiratory syndrome (SARS) in 2002-2003, it was given the moniker SARS-CoV-2. Coronavirus, unlike certain viruses, may infect metal, glass, wood, textiles, and plastic surfaces for several hours to days. Researchers have been scrambling to understand more about coronavirus since the outbreak began. Because of their terrible ability to adapt to their present host and

switch to a new host, emerging and re-emerging viruses pose a serious threat to human health. As a result, they evade antiviral defences and become more powerful. In India, around 4.5 lakh persons have been infected with coronavirus. Only 2.3 critical care beds are available per 100,000 people in India. At the same time, by May 2020, the country will have a maximum of 57,000 ventilators available. Its use comes at a high expense, and some of those cannot be used since COVID-19 patients require a ventilator with specified features. This severe shortage of health-care facilities emphasises the importance of foresight and prevention.

As a result, the scientific community faces a difficult task in designing personal protective equipment (PPE) to prevent the virus from entering the body, as well as a vaccine to prevent infection. Nanoscience and Nanotechnology, in particular, play a critical role in protecting humans from viruses by detecting and treating disease early. Various nanomaterials are now being tested for use as coating materials for virus-defeating masks, wipes, and sprays. Furthermore, some nanomaterials are being tested in clinical trials to see how effective they are at detecting and destroying the new virus. The search for an effective personal COVID-19 protection is on.

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