

## **DST-SERB announces first set of approved projects to combat CoVID-19 & related respiratory infections**

COVID-19 virus has spread rapidly throughout the world, a crisis which the World Health Organisation has termed as a pandemic. Given the lack of availability of suitable chemotherapeutic interventions and an efficacious vaccine, the global population has been hit hard with utmost vulnerability to the current coronavirus outbreak. In view of increasing the load of CoVID-19 infections in India, the Department of Science and Technology-- Science and Engineering Board (DST-SERB) announced several special research project calls to urgently ramp up national R&D efforts against the epidemic.

The first set of 5 projects has been selected by DST-SERB, which will be supported for further development into implementable technologies. Three of these projects concern the highly important issue of antiviral and virustatic surface coating of inanimate surfaces, such as personal protection equipment (PPE); while another one deals with the identification of metabolite biomarkers in CoVID-19 infected patients enabling therapeutic target identification; and the last one concerns with the development of antibodies against the receptor-binding domain of the spike glycoprotein of coronavirus.

The projects are the following:

### **Identification of global metabolite biomarkers in CoVID-19 infected patients for targeted therapy**

This will identify the global metabolite biomarkers in CoVID-19 infected patients. It will help in search of potential biomarker signature for CoVID infection and recognition of novel targets for therapy.

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### **Development of functionalized inanimate surfaces with repurposable multi-targeted viricidal agents/drugs for preventive and cost-effective antiviral applications**

It will help develop viricidal coatings for inanimate surfaces used in healthcare settings such as surgical masks for the prevention of infectious diseases caused by highly contagious pathogens such as severe acute respiratory syndrome-related novel coronavirus, SARS-CoV-2.

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### **Development of antiviral surface coatings to prevent the spread of infections caused by influenza virus**

As the attachment of viruses onto surfaces leads to the spread of deadly infections, the objective of the proposal is to develop small molecular and polymeric compounds which will

be coated, both covalently as well as non-covalently, on various surfaces and kill respiratory viruses completely upon contact.

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### **Development of formulations for viral decontamination of inanimate surfaces**

This will help develop material which may be used as a virus tactic and be applied to mops to disinfect the surfaces to remove any adhering viruses or bacteria.

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### **Antibody-based capture of 2019-nCoV and its inactivation using lipid-based *in situ* gel**

This project will help develop antibodies against the receptor-binding domain of the spike glycoprotein of CoV involved in recognizing a host cell-surface receptor, namely, zinc peptidase angiotensin-converting enzyme 2. Another objective is to develop unsaturated free fatty acid-based emulsion loaded in-situ gels to inactivate the virus at the point of entry.

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The projects were selected after peer-review and assessment by a Special Expert Committee for CoVID-19 projects.

*You could contact the undersigned for more information concerning CoVID-19 R&D efforts of DST-SERB:*

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