SCIENCE & TECHNOLOGY EFFORTS ON COVID-19

BY

MINISTRY OF ELECTRONICS AND INFORMATION TECHNOLOGY (MEITY)

Development and technology transfer of polymer swab for testing of COVID-19

Considering the acute shortage of testing kits in the country, Centre for Materials for Electronics Technology (CMET), Pune, under the aegis of scientific society of *Ministry of Electronics and Information Technology* (*MeitY*) has developed polymer swabs. These swabs are made up of polymer rod/stick and polymer fibres with locally-sourced materials. The polymer rod is developed with thermoplastic polypropylene materials through injection moulding. Polymer fibers are then crimp pressed on the polymer rod. Sri Research for Tissue Engineering Pvt Ltd, Bengaluru has been chosen to carry out clinical and ethical trials, in which satisfactory results have been observed. Additive Manufacturing Society of India, Bengaluru is now considering the production of these indigenous kits in the country.

Website link:
https://meity.gov.in/content/c-met

Synthesis of nanoparticles and its coatings on cotton/ polyester fibres for having antiviral and antibacterial properties

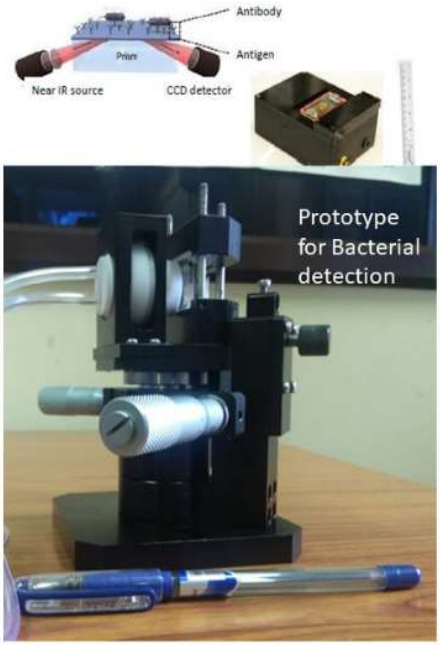
Centre for Materials for Electronics Technology (CMET), Pune, under the aegis of scientific society of *Ministry of Electronics and Information Technology (MeitY)* has developed antiviral and antibacterial masks with metal/metal-semiconductor nanoparticles as a cost-effective alternative of N95 masks for the Indian market. Yshawantrao Chavan Institute of Science,

(YCIS), Satara, Maharashtra, has been chosen to carry out testing of the masks for antibacterial properties and pathogen tests, which has shown encouraging results.

Website link:
https://meity.gov.in/content/c-met

Cost-effective portable plasmonic sensor for random testing of novel coronavirus at the community level

Centre for Materials for Electronics Technology (CMET), Thrissur, Kerala, under the aegis of scientific society of *Ministry of Electronics and Information Technology (MeitY)*, has developed a point-of-care plasmonic portable sensor with disposable semiconductor-based chips to detect antibody with the presence of COVID-19 virus in the blood. The sensor was tested for food-borne pathogens by Rajiv Gandhi Centre for Biotechnology (RGCB), Thiruvananthapuram. Functionalization of the sensor and the docking efficiency analysis are being carried out on the designed bio-receptors with different pathogenic strains. First version of the biosensor is under validation at RGCB. This technology is now being modified for antibody testing in blood for COVID-19 patients. Such portable devices would be beneficial for the random testing of patients at an affordable cost.



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