

Virosensor : An Innovative Mobile Application for Predicting The Risk Of Airborne Transmission Of Covid-19 Through The Data-Driven Approaches With Real-Time Data From Biosensor Systems

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Abstract

Growing global calamities like Corona pandemic have been pushing the limits of scientific research and technological innovation which can cause the dampening of the health & economy of the world. Even though there were reports of the incidence of the disease in the past, the 2019 occurrence has been massive and many governments, health organisations and other sectors are cumulatively functioning to bring down the corona effects. Due to the high infectivity rate as it has the potential to be able to sustain and be active in the atmosphere even after a long time and its prolonged incubation period gives ample time for the spread of the disease causing more morbidity and mortality rises. Having understood the distressing impact of COVID-19, the idea of the Virosensor application in mobile phone devices equipped with nano biosensors is put forth and designed in a way to analyse the data with an RNA algorithm and predict the presence of the virus in the environment. Taking into consideration of the existing components, and technologies and designing an innovative and economically effective application which will help in epidemiological data collection and also help dampen the spread of infection.

References

- [1] [Apostolopoulos ID, Aznaouridis SI, Tzani MA](#) “Extracting Possibly Representative COVID-19 Biomarkers from X-ray Images with Deep Learning Approach and Image Data Related to Pulmonary Diseases” *Journal of Medical Biological Engineering*, 2020 May 14:1-8. doi: 10.1007/s40846-020-00529-4
- [2] [Lin C, Xiang J, Yan M, Li H, Huang S, Shen C](#) “ Comparison of throat swabs and sputum specimens for viral nucleic acid detection in 52 cases of novel coronavirus (SARS-Cov- 2)-infected pneumonia (COVID-19).” *Clinical Chemical Laboratory Medicine*. 2020 Apr 16. doi: 10.1515/cclm-2020-0187.
- [3] [Guo L, Ren L, Yang S, Xiao M](#), et., al “ Profiling Early Humoral Response to Diagnose Novel Coronavirus Disease (COVID-19).” *Journal of Clinical Infectious Diseases*. 2020 Mar 21. pii: ciaa310. doi: 10.1093/cid/ciaa310
- [4] [Wacharapluesadee S1, Kaewpom T1, Ampoot W1, Ghai S1, Khamhang W1, Worachotsueptrakun K1](#) “Evaluating the efficiency of specimen pooling for PCR- based detection of COVID-19.” *Journal of Medical Virology*. 2020 May 13. doi: 10.1002/jmv.26005.
- [5] [DimingZhangQingjunLiu](#) Biosensor National Special Laboratory, Key Laboratory for Biomedical Engineering of Education Ministry, Zhejiang Provincial Key Laboratory of Cardio-Cerebral Vascular Detection Technology and Medicinal Effectiveness Appraisal, Department of Biomedical Engineering, Zhejiang University, Hangzhou 310027, PR China Biosensors and bioelectronics on a smartphone for portable biochemical detection, 20 August 2015.
- [6] [Xiwei Huang, a Dandan Xu, bc](#) et., al., Smartphone-based analytical biosensors. Royal Society of Chemistry

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