

*Not yet available for sale in U.S.A. or Puerto Rico. Emergency application in process. Patent Pending.

GenViro!™ Swift COVID-19 Screen

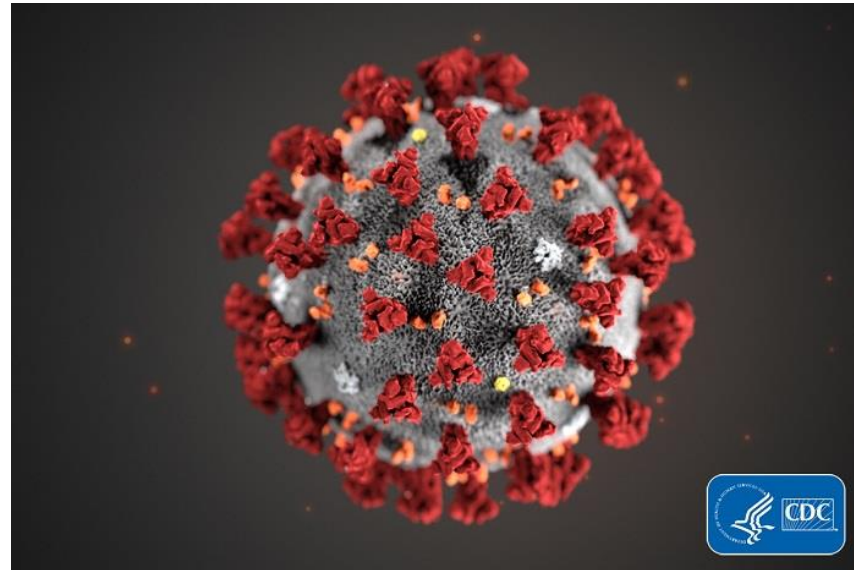
Paired with our GenViro! Swift Meter, GenViro! is here to help ease your mind by screening for the Coronavirus!

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Swift COVID-19 Screen

CoronaVirus

- ▶ Coronaviruses (CoV) are a large family of viruses that cause illness ranging from the common cold to more severe diseases.
 - ▶ Diseases such as Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS-CoV).
 - ▶ Common signs of infection include respiratory symptoms, fever, cough, shortness of breath and breathing difficulties.
 - ▶ In more severe cases, infection can cause pneumonia, severe acute respiratory syndrome, kidney failure and even death.



Background

- ▶ Traditional methods for detecting and quantifying viruses such as real-time PCR and immunodetection are based on known viruses. More general methods are needed that can identify and quantify any virus. Electrochemical Impedance Spectroscopy (EIS) has the potential for sensitive and selective detection of viruses of different sizes and shapes.
- ▶ This method has two key potential advantages: the ability to monitor continuously the environment, and to detect unspecified viruses and mutants, because biological information on genomes or receptors is not required. A high-sensitivity, accurate virus sensor based on direct measurement of physical properties would enable long-term, continuous virus monitoring.

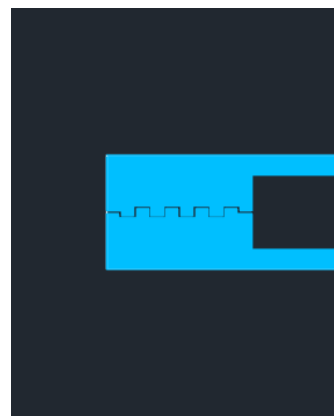
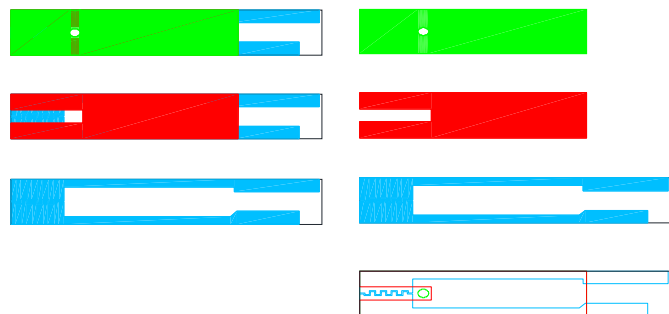
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Swift COVID-19 Screen

Description of the Design

▶ A. Device Design

- ▶ The device is fabricated on a polyethylene terephthalate (PET) substrate that has been patterned with two metal (Pt) electrodes (Blue). The electrodes are separated by a serpentine gap that is 100 microns wide. A spacer layer (Red) defines the lateral extents which the test sample covers while a lid material (Green) provides final definition of a capillary channel. A vent hole in the lid allows the sample to enter the device.

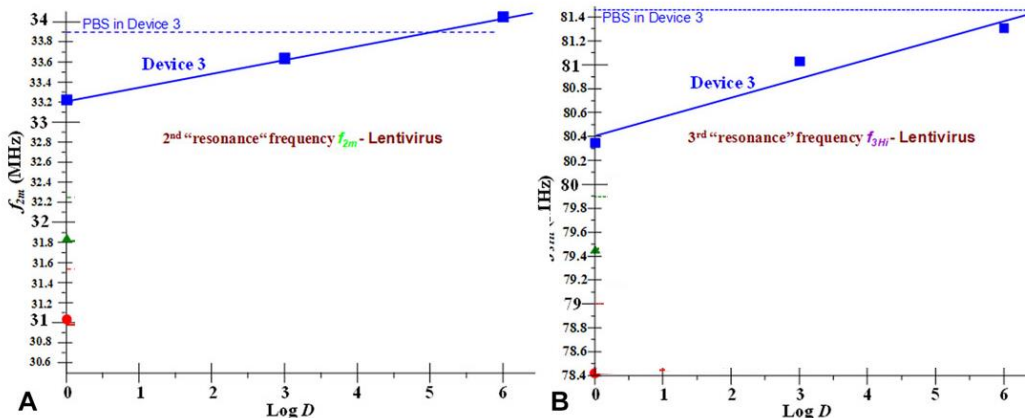


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Description of the Design

- ▶ B. Assay design
- ▶ The assay itself does not require any reagent (see sample preparation section). The sensor is slid into the meter's connector and then the sensor is inoculated with the sample. Sample Volume is 1-2 μL . Using an AC voltage (500 mV pp) signal, frequencies (100 kHz to 10 MHz) are identified where the target particles respond. The test time is expected to be less than 15 seconds.

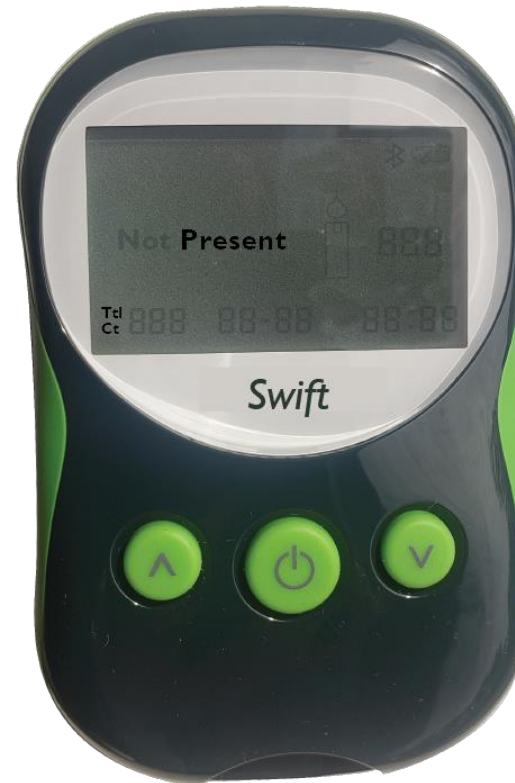


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- ▶ C. Sample Preparation
 - ▶ Whole blood from a finger prick would either be applied directly to the sensor where it is drawn into the capillary channel by capillary forces. The sensor would contain the company's proprietary mechanism to correct for hematocrit in the blood sample.
 - ▶ Or a saliva sample to be collected in to a saliva collection cylinder, with saline added, saliva sample in the cylinder would be used to inoculate the sensor.





Development of the Device

D. References

Daniel P. Poenar et al Electrophoresis 35 433-440 2014

Label-free Virus Identification and characterization using electrochemical impedance spectroscopy

Ryuji Hatsuki et al Frontiers in Microbiology 6 Article 940 2015

Nonlinear electrical impedance spectroscopy of viruses using very high fields created by nanogap electrodes.



About PharmaTech Solutions, Inc.

Business Summary

PharmaTech Solutions is a leading distributor of prescription drug, prescription diagnostics, and home testing products in the United States. We offer bulk prescription drugs on a wholesale basis to clients; diabetes diagnostics and supplies, including diabetic testing strips and associated diagnostic products; and various lines of ostomy, wound care, and post-surgery medical products to ambulatory and semi-ambulatory older Americans afflicted with diabetes and complications caused by diabetes and old age.

PharmaTech Solutions has established a core management team experienced in all phases of health care, data management and the Web.





About PharmaTech Solutions, Inc.

Board of Directors

- ▶ Keith Berman, *Chief Financial Officer, Secretary and Director*

Specializing in healthcare software including intranet and Internet systems for the past 15 years and a founder of PharmaTech Solutions Corp., Keith Berman brings more than 22 years experience in the healthcare field, having worked with such companies as Technician Corporation and Boehringer-Mannheim Corporation. He is the founder of Medicius Inc., and served as that company's president at the time of its acquisition by instaCare Corp. Mr. Berman also was the founder of Cymedix, the operating division of Ramp Corp. (formerly Medix Resources) (AMEX: RCO), a public company. Mr. Berman received his B.A. and M.B.A. from Indiana University.