# Surface Acoustic Wave Biosensor **Based Point-of-Care System for** Influenza Diagnosis

#### **Technology** Overview

The point-of-care (POC) system developed is based on a Surface Acoustic Wave (SAW) biosensor to bind and detect hemagglutinin (HA) of Influenza A H1N1 virus subtype. Based on laboratory evaluation, the POC system is capable of detecting HA antigen with sensitivity down to 1 ng/ml. This POC SAW biosensor system can be further developed for diagnosing other diseases.

### Features & Specifications

This technology comprises of:

- a microfabrication process of a Surface Acoustic Wave (SAW) biosensor chip,
- a surface modification protocol for antibody immobilization,
- a sandwich immunoassay on microfabricated SAW biosensor chip for influenza viral protein detection,
- a polymer housing with microfluidic channel for bio sample delivery, and
- a point-of-care (POC) system for SAW biosensor signal reading.

Based to laboratory evaluation, the POC system can detect influenza viral protein with a sensitivity of 1 ng/ml. These biosensor platforms offer label-free assay diagnosis with immediate results and employ small user-friendly form factor, could overcome some of the challenges faced in conventional diagnostic techniques.





### Collaborators



**Materials Research** 



## **Customer Benefits**

Compared with other biosensing technologies, SAW biosensor has the advantages of simpler operation, higher sensitivity, faster response and lower cost.

## **Potential Applications**

This SAW biosensor based POC system is developed specifically for influenza viral antigen detection. By immobilizing different antibodies, the biosensor platform can be modified to detect other disease-specific biomarkers. When multiple chips are integrated within a microfluidic channel for specimen processing and delivery, this POC system can be developed for multiplexed testing, which is simultaneous on-site detection of multiple analytes from a single specimen.



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