



## Highly sensitive smart biosensor based on the surface plasmon resonance (SPR)

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### Abstract:

In the current technologic era biosensors are being used largely in different fields of application. Current research trends focus on the invention of a portable detection system with high sensitivity, accuracy, repeatability, and other criteria relevant to the applications. From all the existing biosensors, Surface plasmon resonance (SPR) sensing technology has received continuous attention due to its advantage of a high-sensitivity, label-free, and fast response time. Although the SPR sensing technique being a legend in the sensor community, currently the temperature of the sample needs to be carefully maintained and controlled because the SPR signal varies with temperature. This gives a huge challenge in the application whether the SPR sensor senses only the biological reaction or it detects also the temperature change in the sample. Taking all the challenges into account we have developed a novel SPR sensor design having multi SPR channels allowing to modulate the temperature of each channel precisely in real-time independent to the other channels by using joules effect. We have experimentally demonstrated that the temperature



modulation of the SPR channel by Joules heating is reliable and enables the SPR sensor system to still being portable and user-friendly.

### Biography:

SIVARAMAKRISHNAN GANESAN is a third-year PhD student from the University of Lille, France. His PhD will be finishing in September 2020. He published an article related to super-resolution microscopy in the nature communication journal and submitted two articles in the field of biosensing towards a point of care in a reputed journal (will be published soon) and finally writing another article in the field of biosensing which will be soon submitted.