Glucose Sensor Using Microwave Sensing Technique

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Abstract

The conventional glucose measuring electrode based techniques are highly time consuming, need skilled people, proper laboratory set-up for testing. Seeing the cruciality of the glucose testing, there is need to explore real-time techniques.

The main aim of this paper is to demonstrate a real-time label-free glucose sensor using microwave sensing technique. Currently we are working on various designs on coplanar waveguide transmission line to demonstrate microwave biosensor. The microwave biosensor is fabricated using microwave laminate board and polymer technology. In this, we proposed biosensor fabricated in-house making use of unconventional fabrication process without the need of cleanroom and costly equipments unlike most of the reported microwave sensors fabricated using conventional MEMS micromachining process. Secondly, the labeled sensing techniques may have an inaccuracy which can be overcome using label-free technique which may be highly useful for biomedical applications.

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Keywords—Microwave, Glucose Sensor, Label free , Real-time

Professional Biography (100-150 words)

Dr. Poonam Agarwal, did PhD from Indian Institute of Science Bangalore, India, in 2011. She worked as Post doctoral researcher at Nanyang Technological University Singapore for one year 2012-2013. Since 2013, she is Assistant Professor at School of Computer & Systems Sciences, Jawaharlal Nehru University New Delhi, India. She is DST INSPIRE Faculty awardee by Department of Science & Technology, Government of India through which fellowship and research grant is provided. Her research interest is focused on to explore unconventional low cost micromachining techniques to implement mesoscale devices for applications such as energy harvesting device, microwave biosensor etc.



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