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Review [Biosensors \(Basel\)](#). 2021 Feb 25;11(3):61. doi: 10.3390/bios11030061.

Fiber Optic Sensors: A Review for Glucose Measurement

José Luis Cano Perez ¹, Jaime Gutiérrez-Gutiérrez ², Christian Perezcampos Mayoral ¹, Eduardo L Pérez-Campos ³, Maria Del Socorro Pina Canseco ³, Lorenzo Tepech Carrillo ², Laura Pérez-Campos Mayoral ³, Marciano Vargas Treviño ², Edmundo López Apreza ², Roberto Rojas Laguna ⁴

Affiliations

PMID: 33669087 PMCID: [PMC7996499](#) DOI: [10.3390/bios11030061](#)[Free PMC article](#)

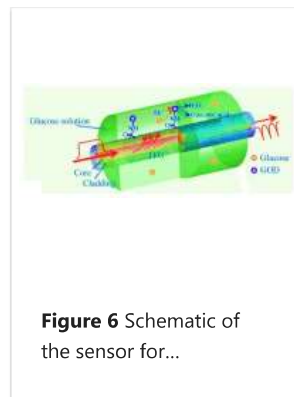
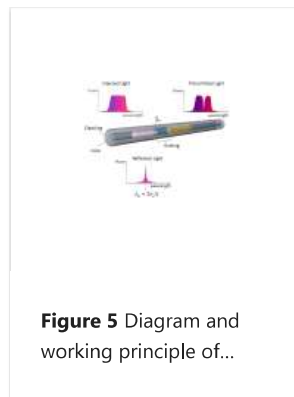
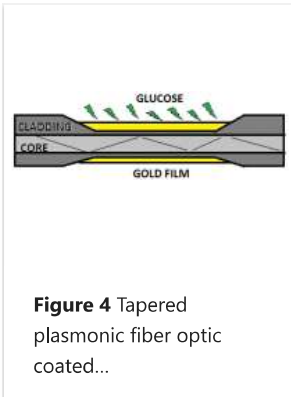
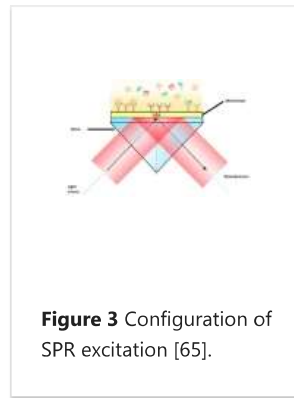
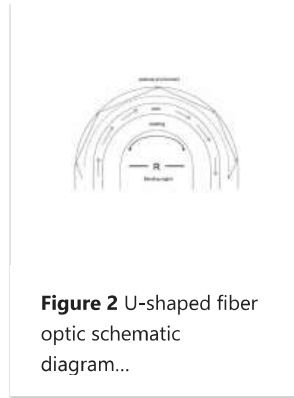
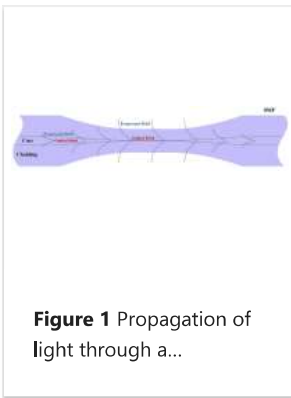
Abstract

Diabetes mellitus is a chronic metabolic disorder, being globally one of the most deadly diseases. This disease requires continually monitoring of the body's glucose levels. There are different types of sensors for measuring glucose, most of them invasive to the patient. Fiber optic sensors have been proven to have advantages compared to conventional sensors and they have great potential for various applications, especially in the biomedical area. Compared to other sensors, they are smaller, easy to handle, mostly non-invasive, thus leading to a lower risk of infection, high precision, well correlated and inexpensive. The objective of this review article is to compare different types of fiber optic sensors made with different experimental techniques applied to biomedicine, especially for glucose sensing. Observations are made on the way of elaboration, as well as the advantages and disadvantages that each one could have in real applications.

Keywords: biosensor; fiber optic sensor; glucose monitoring; glucose sensor.

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