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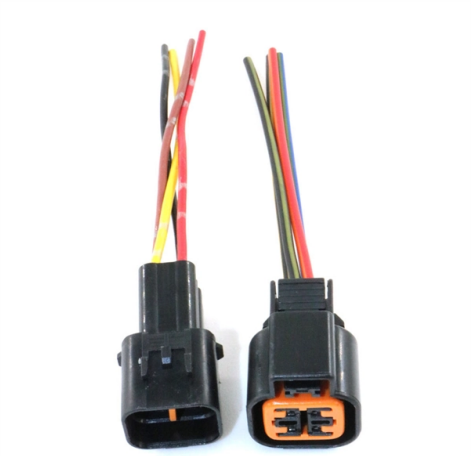
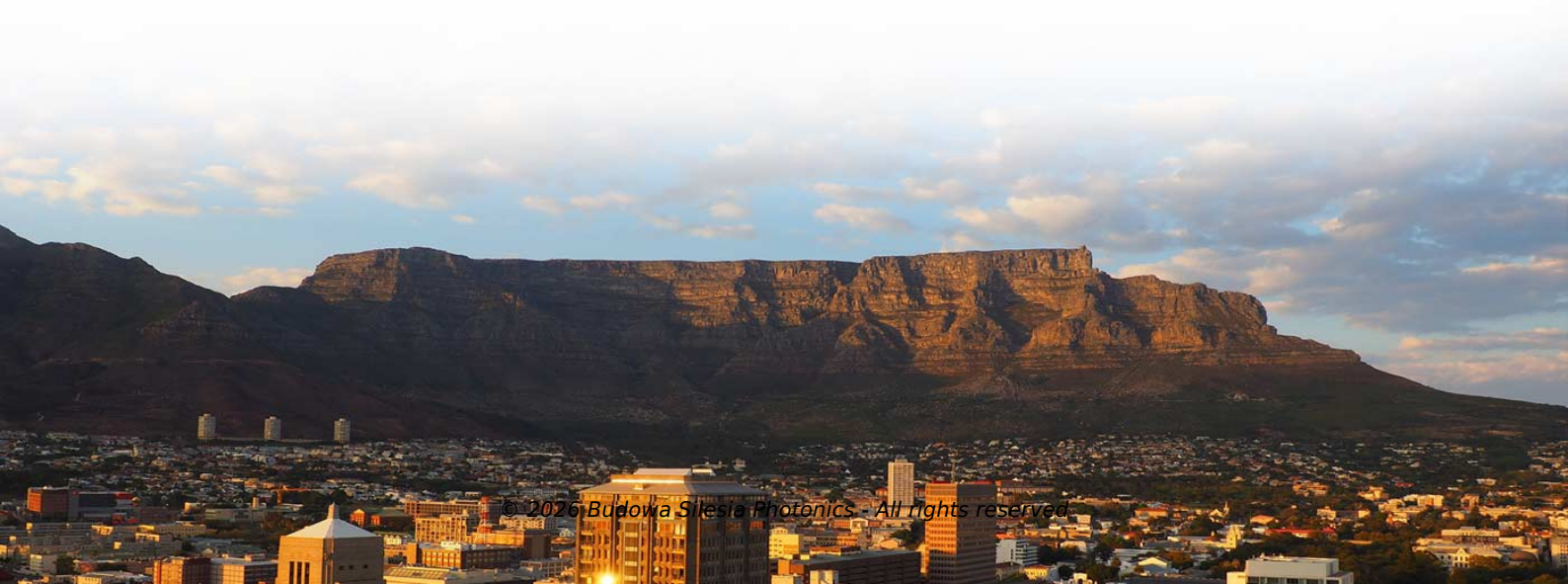
Fiber optic sensor detects HCG



Overview

In this study, a novel technique for the quantification of the human chorionic gonadotropin (hCG) hormone using localized surface plasmons and a tapered optical fiber decorated with gold nanoparticles (Au-NPs) is reported. The tapered optical fiber fabrication process involves stretching a. A biosensor based on one of the interferometer techniques, Mach-Zhender interferometer (MZI) technique, and the using of the laser beam is developed for pregnancy detection or pregnancy hormone, Human chorionic gonadotropin (HCG), increasing. 5. Highly sensitive and rapid sensors are needed to improve the detection of performance enhancing drugs in sports as athletes take diuretics to dilute the concentration of drugs in their urine and microdose under the detectable limits of current sensors. Here we demonstrate, using frequency locked.



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Article Content

Laser Biosensor as for Pregnancy Test by Using Photonic Crystal ...

This study aims to design and construct a laser biosensor based Mach-Zehnder interferometer technique (Micro-Holes Collapsing) using a solid core-photonic crystal fiber (LMA-10) with different ...

Quantification of hCG Hormone Using Tapered Optical Fiber ...

In this study, a novel technique for the quantification of the human chorionic gonadotropin (hCG) hormone using localized surface plasmons and a tapered optical fiber decorated with gold ...

Novel Microfiber Sensor and Its Biosensing Application for Detection ...

We combine fiber Bragg grating (FBG) technology with a wet chemical etch-erosion procedure and demonstrate two types of refractive index sensors using single-mode optical fibers.

Label Free hCG Concentration Biosensor Based on Suspension Core ...

In this paper, a microfluidic sensor based on suspended core fiber (SCF) for detecting the concentration of human chorionic gonadotropin (hCG) has been presented and experimentally ...

Biosensor for human chorionic gonadotropin detection using gold ...

Recently, a type-D optical fiber sensor, with diameters ranging between 6 and 10 μ m and functionalized with bioreceptors, was reported for the detection of the hCG hormone.

Ultra-sensitive detection of human chorionic gonadotropin using ...

Here, we report for the first time the use of a label-free optical biosensing scheme known as FLOWER (frequency locked optical whispering evanescent resonator) 32 to detect hCG in urine at a ...

(PDF) Quantification of hCG Hormone Using Tapered ...

Quantification tests for hormone concentrations were carried out by measuring the optical power response of the tapered optical fiber with Au-NPs ...

Dual-mode optical fiber sensor with polydopamine-functionalized ...

In this work, we developed a miniaturized, dual-mode optical fiber biosensor that integrates Fabry–Perot interferometry and surface plasmon resonance into a single fiber-based ...

Tapered Side-Polished Microfibre Sensor for High Sensitivity hCG ...

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By functionalizing the primary antibody of hCG onto the TSP fiber surface, the sensor was used for detecting hCG concentration. Experimental results show that when the hCG concentration is ...

(PDF) Quantification of hCG Hormone Using Tapered Optical Fiber ...

Quantification tests for hormone concentrations were carried out by measuring the optical power response of the tapered optical fiber with Au-NPs under the influence of hCG hormone...

Biosensor for human chorionic gonadotropin detection using gold ...

Abstract This work presents a biosensor based on a tapered optical fiber decorated with gold nanoparticles for the detection of human chorionic gonadotropin hormone in water and urine.

Contact Us

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