Fiber Bragg grating sensor for heart rate measurement

Preview

A low-cost dual-FBG (fiber Bragg grating) architecture is employed to capture the pulse waveform of the artery at the subject's wrist by measuring changes in optical power. The edge filter is the Mach-Zehnder interferometer (MZI) fabricated by two fiber couplers with a linear slope of 52. Temperature and heart rate were considered for measurement. The proposed TFBG-based optical. This paper deals on the alternative fiber optic sensor based on fiber Bragg grating (FBG) for use in biomedical applications. FBG measurement probe mounted on the human chest provides respiratory and heart activity monitoring.

A low-cost dual-FBG (fiber Bragg grating) architecture is employed to capture the pulse waveform of the artery at the subject''s wrist by measuring changes in optical power.

A borehole deformation sensor for long-term stress monitoring in coal mine rock based on optical fiber Bragg gratings (FBGs) is presented. The sensor converts borehole deformation into optical fiber

Abstract and Figures Fiber Bragg grating (FBG) is also widely used to detect the heart because it can be received in the form of pressure that results in changes in strain.

Fiber Bragg Grating sensors have a wide range of applications, ranging from their use for health monitoring, in medical applications and also as biomedical sensors, among others.

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In this paper, we propose simultaneous temperature and heart rate measurement using tilted fiber Bragg grating (TFBG) which enables concurrent measurement of measurands due to its intrinsic optical

The design and development of Fiber Bragg Grating based Pulse Monitoring Device (FBGPM) is demonstrated which is capable of acquiring the radial arterial pulse pressure waveform effectively in

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A fiber Bragg grating (FBG) pulse and systolic blood pressure (SBP) measurement system based on the edge-filtering method is proposed. The edge filter is the Mach-Zehnder

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This paper reports a novel optical ballistocardiography technique, which is non-invasive, for the simultaneous measurement of cardiac and

Due to attractive application in the medical field, fiber Bragg grating sensor has become increasing attractive from past few decades for various strain sensing applications. FBG sensor has

This paper reports a novel optical ballistocardiography technique, which is non-invasive, for the simultaneous measurement of cardiac and respiratory activities using a Fiber Bragg Grating

Increasing the precision of the respiration and heart rate can be achieved by implementing a cascade connection of several Bragg gratings with a

In the last decades, the growing interest in the use of wearables has fostered the exploitation of innovative technologies in the development of highly performant sensing solutions for monitoring

Build a fiber Bragg grating-based sensing device to monitor breathing and heartbeat signals. The respiratory and heart rate signals were decomposed using a variational modal

Heart sound, pulse wave and respiration are simultaneously measured with single fiber Bragg grating (FBG) sensor. The FBG sensor is inscribed in optical fiber so that it is quite thinner

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