Fiber Bragg Grating Modulation and Demodulation

This article presents a new demodulation method from the reflection specklegrams of fiber Bragg grating (FBG)-based sensors by employing convolutional neural ne

A three-points tracking-based high-speed fiber Bragg grating (FBG) demodulation method based on wavelength-tunable laser is proposed. The wavelength-tunable laser scans just three ...

In order to improve the demodulation speed of the fiber Bragg grating demodulation system, this article puts forward the principle of ultra-high-speed parallel acquisition and demodulation of fiber Bragg ...

Spectral interrogation of fiber Bragg gratings (FBGs) in the ~850 nm band remains relatively uncommon, largely due to the limited availability of commercial instruments and the restricted applicability of ...

Here, by applying the coupled-mode theory, influences of FBG design parameters such as grating length, refractive index modulation depth, and apodization type on the dual-grating ...

To achieve synchronous demodulation of a large-capacity Fiber Bragg Grating (FBG) sensor network, a FBG demodulation system based on modulated grating Y-branch (MG-Y) tunable laser is designed, ...

A wavelength demodulation method for ultra-short fiber Bragg grating (US-FBG) sensors based on an arrayed waveguide grating (AWG) and a convex optimization algorithm is proposed and ...

Fibre Bragg gratings are one of the most popular sensors with a huge number of applications. Their most important advantage is signal modulation consisting in shifting the spectrum ...

A demodulation algorithm is vital for a fiber Bragg grating (FBG) sensing system. In this paper, a novel demodulation algorithm based on the variable-step-size method and cross-correlation algorithm is ...

In this paper, a photoelectric conditioning circuit for fiber Bragg grating demodulation is designed. The experimental results show that this method can accurately demodulate fiber Bragg ...

Fiber Bragg gratings (FBGs) are widely used as sensors for temperature, strain, and vibration measurement. However, current FBG demodulation methods face issues with stability, size, ...

The proposed method offers the potential to enhance the capacity of FBG sensors within a network, paving the way for notable advancements in signal demodulation within intricate sensor ...

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