

Design of an Adjustable Fiber Bragg Grating Demodulator

Preview

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, combining wavelength division multiplexing and space division multiplexing technologies. In this paper, a novel demodulation algorithm based on the variable-step-size method and cross-correlation algorithm is proposed to demodulate the wavelength of an FBG. This content is available for download via your institution's subscription. The characteristic feature of these sensors is that the position of the spectrum changes due to the action of a particular physical quantity.

A super high-speed fiber grating demodulator capable of simultaneously demodulating four grating channels is designed. The demodulator uses Fourier domain mode locked laser which consists of a

A novel high-speed fiber Bragg grating demodulation method is proposed and demonstrated in this paper. Large dispersion will be generated when light going through the long

The vibration measurement of spacecraft structures in space applications has raised higher requirements for the demodulation frequency of the fiber Bragg grating (FBG) demodulator. In this

Here, we present a simple, compact, and robust technique featuring high linearity over a wide bandwidth and low background noise.

A multiple fiber Bragg grating structure is proposed for optimal demodulation of differential phase shifting keys (DPSK) optical signals. Specific grating design and synthesis are presented for

Simulation and experimental findings demonstrate that FMD can effectively eliminate the information of environmental noise and temperature, and greatly retain vibration information. In the

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

To address these limitations, this study presents a flexible fiber Bragg grating (FBG) sensor array with adjustable sensitivity and configurable measurement positions, specifically

Optical Phase/Frequency Demodulation using Polarization-Maintaining Fiber Bragg Gratings Dipen Barot, Member, Optica, Rui Zhou, Student Member, Optica, and Lingze Duan, Senior Member, IEEE,

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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

A novel approach to fibre Bragg grating spectra processing is proposed. The method is based on the use of nonlinear filtration and raising the spectrum value to the second power.

Dual-grating demodulation has been both effective and simple in most fiber Bragg grating (FBG) sensors because it involves self-demodulation, and in theory, temperature effects are

Fiber Bragg grating is used for monitoring various parameters. In this paper, a set of demodulation system is built based on the principle of edge filter. The system can realize static and

A FBG demodulation system based on FFP tunable filter is proposed and demonstrated that continuously scans all the grating on the fiber, so as to demodulate the wavelength signal.

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