

High-Temperature Stability and Demodulation Techniques Analysis of Sapphire Fiber Bragg Grating Sensor
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The fiber Bragg grating temperature modulation and demodulation system operates by using the optical path to perceive changes in the grating's central wavelength.

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 ...

Leveraging the functional relationship between the center wavelength of the FBG and the detected signals, this system enables high-speed, wide-range interrogation of the center wavelength, ...

In response, we propose a deep learning model based on a CNN-LSTM architecture, specifically crafted to tackle the challenges of high-precision ...

A system of fiber Bragg grating (FBG) temperature sensing demodulation based on light power detection is proposed in this paper. Compared with the traditional demodulation method based ...

Fiber Bragg grating (FBG) sensors are widely used in aerospace monitoring and intelligent manufacturing due to their high sensitivity, yet their deployment relies on manual assembly, limiting ...

In this study, we propose a dense UWFBG temperature detection method based on minimal gating unit (MGU) demodulation.

We leverage machine learning to compensate for the under-sampling of the measured FBG spectra and achieve a temperature accuracy of $0.23\text{ }^{\circ}\text{C}$ at a high data acquisition rate of 5 kHz ...

An optical fiber sensing scheme for decoupled strain and temperature measurement is investigated based on a cascaded microfiber interferometer-fiber Bragg grating (MFI-FBG) ...

We leverage machine learning to compensate for the under-sampling of the measured FBG spectra and achieve a temperature accuracy of $0.23\text{ }^{\circ}\text{C}$ at a ...

In response, we propose a deep learning model based on a CNN-LSTM architecture, specifically crafted to tackle the challenges of high-precision temperature and pressure demodulation ...

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