Customization Process for Low-Temperature Resistant Fiber Bragg Gratings for Emergency Communication

In this paper, we present a design framework for micro-engineering the temperature coefficients of FBGs over specified temperature ranges, while maintaining low loss and good spectral ...

In this paper, a simulation model of surface-adhesive Fiber Bragg grating with the substrate is established for low-temperature strain precise measurement. The strain distribution on ...

An optofluidic sensor based on a Bragg grating in hollow-core fiber (HCF) is experimentally demonstrated. The grating is inscribed into the HCF by femtosecond laser illumination ...

We have reviewed all the research papers available to date on the cryogenic sensitivity enhancement of FBG sensors by coating them with metals, polymers, or composites. A ...

This section details the process by which three specific fiber Bragg gratings (very important milestones for this efort) were fabricated and characterized. The process featured a back-and-forth relationship ...

Fiber Bragg Grating (FBG) sensors facilitate compact, multiplexed, and electromagnetic interference-immune monitoring in embedded and harsh environments. The removal of the polymer ...

In this study, we present an AI- powered FLI system that enables automated, stable, and efficient FBG fabrication. By integrating a Multi-Layer Perceptron (MLP) model for real-time fabrication position ...

This technology makes it possible to write Fiber Bragg Gratings in almost any type of optically transparent material and through a variety of fiber coatings such as acrylate, polyimide or carbon.

In this review, we present the historical developments and recent advances in the fabrication technologies and sensing applications of femtosecond-laser-inscribed FBGs. Firstly, the mechanism ...

This cost-effective and straightforward packaging method enables the mass production of temperature compensated FBGs for sensing and communication applications with a simple and low ...

An optofluidic sensor based on a Bragg grating in hollow-core fiber (HCF) is experimentally demonstrated. The grating is inscribed into the HCF by ...

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