

The following chapters outline the operation of Bragg gratings and, for instance, discuss how measurement information can be retrieved (interrogation techniques), calibration methods, and how ...

Fiber Bragg Gratings (FBGs) are a crucial technology in the field of optics, with a wide range of applications in telecommunications, sensing, and medical fields. In this article, we will ...

Fiber Bragg grating (FBG) sensors have emerged as advanced tools for monitoring a wide range of physical parameters in various fields, including structural health, aerospace, biochemical, and ...

For the first time, a reliable procedure to certify the predicted lifetime based on a "restricted" master curve built on real components (i.e., passivated FBG) is presented.

Reliability of fiber Bragg grating (FBG) strain sensors have to be guaranteed before employed in long-term structural health monitoring. Different affecting factors related to reliability issues of FBG strain ...

As expected, Type I gratings had a significantly higher fatigue life compared to Type II gratings. However, Type II gratings performed significantly better than conventional UV laser-inscribed FBGs ...

The major advantage of these all fiber systems, where the free space mirrors are replaced with a pair of fiber Bragg gratings (FBGs), is the elimination of realignment during the life of the system, since the ...

To analyze the long-term monitoring reliability and life expectancy of FBG-based steel strands, accelerated corrosion and tensile tests were carried out and a life-prediction model was...

We have carried out a numerical simulation study to show the spectral characteristics of an FBG and various types of phase-shifted FBGs. The in-fiber Bragg gratings are modeled by the transfer matrix ...

The distance between the reflection points of a fiber Bragg grating is always equal. The wavelength that matches exactly the distance between two reflection points is reflected by the grating. All other ...

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