

Accuracy of Sino-European Fiber Bragg Grating Strain Gauges

To achieve accurate strain measurements using fibre Bragg gratings (FBGs), both the sensing and wavelength demodulation accuracy are worth considering. Due to the indispensability,...

Because FBG sensors can measure strain (and not displacement) they also provide the superior advantages of the strain measuring principle, as metal foil strain gages do.

In this paper, our objective is to review the various techniques to measure the temperature and strain using FBGs in different industrial sectors. An In-depth analysis of FBG is also incorporated ...

In this paper, three successful approaches implemented to improve the accuracy for the fiber Bragg grating (FBG) strain sensing system are described and followed by experimental results.

Using RTLS diagnostics, it was found that the lightweight plastic versions of the FBG strain gauges were significantly more reliable than the heavier metal-backed gauges. The reduced ...

In this paper, a general review of the FBG strain sensors, interrogation techniques, performance, and their application fields are presented. The investigation begins with the analysis of ...

This review highlights significant advancements in Fiber Bragg Grating (FBG) sensors, detailing their operational principles, recent technological developments, and diverse applications in SHM, thereby ...

In this study, FBG sensor system configuration, design principle, numerical simulation and loading tests for the FBG strain gauge are expatiated extensively. At the last, one-axial and ...

Strain gauges are widely used for localized measurements with high sensitivity to temperature effects, while FBGs provide distributed sensing capabilities over long distances and immunity to ...

We use our findings on the compromised accuracy of strain measurements in the grip region to expand the general understanding of the response and accuracy of embedded FBGs. The fiber-optic sensors ...

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