Performance of Slovakian Distributed Fiber Optic Strain Sensor

Optical strain sensors (or strain gauges) are sensors for compressive and/or tensile mechanical strain (deformation) which are based on optical technology -- in most cases, on fiber optics.

Abstract: Fiber-optic sensing of temperature and strain over many advantages over electronic sensors. Fiber-Bragg-Gratings (FBGs) are used for spot sensing, whereas Rayleigh, Brillouin and Raman ...

This article thus presents a bench adjusted for tests with single-mode fiber optic cables, as well as results of tensile tests for defining the function of strain variations in two different optical fiber ...

Strain transfer phenomenon in distributed fiber optic sensors (DFOS) has shown significant effects on sensor survival and measurement of strain distributions as well as detection and ...

Abstract Distributed fibre optic sensors (DFOS) are popular for structural health monitoring applications in large engineering infrastructure because of their ability to provide spatial ...

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In the demonstrational experiment, distributed vibration measurement with 0.9 m spatial resolution, 224 pvarepsilon /surd Hz strain resolution, 5 kHz response bandwidth and 25.7 dB ...

Thus, sensors with polyimide coating have the best performance in measurements where high precision is necessary, where local strain peaks should be detected but the expected strain ...

In this article, we are particularly interested in distributed fiber sensors, mainly based on light scattering processes, for measuring strain variations.

We investigated the application of distributed fiber-optic sensors (DFOS) based on Rayleigh scattering for high-resolution strain measurements in heterogeneous materials under four ...

A theoretical strain transfer model for a DOFS was designed and the theoretical strain transfer coefficient was calculated using numerical simulations. Furthermore, an evaluation of the ...

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