How to adjust the sensitivity of a long-period fiber optic grating

To provide the sensor with selective response to specific analytes, the cladding of the region of the optical fibre containing the LPG can be coated with a material that exhibits a change in ...

In this study, a new temperature sensor with high sensitivity was achieved by four-layer Ge and B co-doped long-period fiber grating (LPFG) ...

In this paper, a long-period fiber grating torsion sensor based on rotating single-mode fiber is proposed to achieve further improvement of the torsional sensitivity of the sensor.

In this study, a new temperature sensor with high sensitivity was achieved by four-layer Ge and B co-doped long-period fiber grating (LPFG) based on the mode coupling principle.

Conventional sensitivity enhancement strategies (dispersion turning point, mode transition, fiber diameter reduction) are described. Works exploring non-conventional sensitivity enhancement ...

an interferometric exposure method to form a fine analytical grating with a period as long as the wavelength of light. LPFGs, on the other hand, create relatively long-period diffraction gratings with ...

A long-period fiber grating sensor was fabricated by periodically changing the structure of single-mode fiber with an electric arc discharge technique. After the fabrication, the refractive index ...

Two different methodologies: the use of dual overlay layer and tailoring of the intermodal separation between two cladding modes, have been used to enhance the add-layer sensitivity.

Two phenomena for enhancing the sensitivity of long-period fiber gratings are combined toward an increase of the sensitivity to strain of this type of devices: the dispersion turning point (DTP) and the ...

Abstract: In this letter, a novel shrinking long period fiber grating (S-LPFG) is designed. This strain sensor is fabricated through mechanical polishing and arc-discharging, allowing for certain control ...

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