Fiber Bragg Grating Apodization Principle

Apodization profile plays a critical role in order to achieve optimum optical characteristics for the FBG. FBG with a novel apodization profile and optimized optical characteristics with respect ...

An apodized fiber Bragg grating (FBG) is introduced with a proposed apodization function for the effective quasi-distributed sensing estimation of the temperature and the strain.

The apodization scheme is independent of the length of the grating, the only requirement being that the fiber be stretched by half-a-period in each direction, so that for a chirped grating, one end of the fiber ...

The paper presents the principle of operation, the structure, applications and methods of producing uniform, chirped and blazed fiber Bragg ...

OverviewTheoryHistoryTypes of gratingsGrating structureManufactureApplicationsSee alsoThe fundamental principle behind the operation of an FBG is Fresnel reflection, where light traveling between media of different refractive indices may both reflect and refract at the interface. The refractive index will typically alternate over a defined length. The reflected wavelength (), called the Bragg wavelength, is defined by the relationship, where is the effective refractive index of the fiber core and is the grating period. The effective refractive ...

According to the characteristics of the grating pitch on the FBG, it can be divided into: Uniform Fiber Bragg Gratings with regular spacing, Long-period Fiber Bragg Gratings, Phase-shifted Fiber Bragg ...

The paper presents the principle of operation, the structure, applications and methods of producing uniform, chirped and blazed fiber Bragg gratings as well as long period gratings.

We demonstrate apodized fiber Bragg gratings inscribed with a point-by-point technique. We tailor the grating phase and coupling amplitude through precise control over the longitudinal and transverse ...

An apodized Chirped Fiber Bragg Grating is presented with different chirp rates to illustrate sensing response for various uniform and non-uniform profiles of temperature and strain.

In this paper, a new apodized fiber Bragg grating (FBG) structure, the Chebyshev apodization, is proposed. The Chebyshev polynomial distribution has been widely used for the optimal design of ...

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The apodization function has a significant impact on the state of the art of group delay, dispersion compensation, and acceptable decrease in side lobes in the spectrum of Fiber Bragg ...

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