

Fiber Bragg gratings (FBGs) can be understood as fibers which are equipped with additional means for mode coupling -- for example, for reflecting light (with short ...

In this paper the analytic models (AMs) of the spectral responses of fiber-grating-based interferometers are derived from the Fourier mode coupling (FMC) theory proposed recently.

Coupling between two dissimilar order modes occurs when symmetry is broken by slanting the grating in the direction of propagation; for coupling between the eigen-polarization states of the same order, ...

This paper presents analysis of spectral characteristics of Optical Fiber Bragg Gratings (FBG) for sensor applications. The FBG has been modeled by using the equations of couple mode ...

The underlying physics is governed by coupled-mode theory, where forward- and backward-propagating modes interact due to the refractive index perturbation. Mathematical Derivation of the Bragg ...

In this study, the behavior of FBGs under varying temperatures is modeled using Coupled Mode Theory (CMT), which provides an analytical framework for the coupling of forward and backward propagating ...

Bragg gratings in optical fibers in multimode propagation are investigated theoretically by using the coupled-mode theory and considering two modes coupling. Bragg gratings in multimode fibers ...

Due to the total internal reflection (TIR) phenomenon that occurs in the core- cladding interface of the fiber, the light propagating in the fiber has two components: an oscillatory field in the core and an ...

This chapter introduces wave propagation in optical fiber, followed by the theory of mode coupling. The problem of finding solutions to the wave-propagation equations is simplified by assuming weak ...

Here the modeling and simulation of an optical fiber Bragg grating for reflectivity based on coupled mode theory is discussed in details. Grating length represent as one of the important parameters in ...

In this work, we introduce a general simulation and design framework for WBGs, which combines coupled mode theory with three-dimensional finite-element method eigenfrequency computations. ...

Abstract-- The spectral characteristics of superstructure fiber Bragg gratings are analyzed numerically based on the coupled mode theory, simultaneously taking into account the counterdirec-tional guided ...

Fiber Bragg gratings (FBGs) can be understood as fibers which are equipped with additional means for mode

coupling -- for example, for reflecting light (with short period gratings) or for coupling to modes ...

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