Fiber Bragg Grating Mode Coupling Theory

In this study, a new simulation method is proposed and verified for fiber Bragg grating patterned on polarization maintaining fiber (PM-FBG) using the transfer matrix approach.

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 ...

In section III, we study the concept of coupled mode theory as coupled-mode theory is a vital tool for understanding the design of Bragg gratings. This is also required to understand the concept for ...

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 ...

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 ...

In this study, we investigate whether the addition of a spatial mode multiplexer, used to selectively excite specific fibre modes, can simplify the interpretation and utility of few-mode FBGs ...

Coupled-mode theory provides a rigorous mathematical framework for analyzing the interaction between forward and backward propagating modes in an optical fiber Bragg grating (FBG).

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 ...

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, ...

Abstract: We remove some ambiguities associated with the coupled mode description of light propagation in fiber Bragg gratings (FBC"s). We show, in particular, that different methods employed ...

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