عنوان مقاله:

Design of Ultra-Flattened Dispersion Photonic Crystal Fibers with Low Confinement Loss

محل انتشار:

چهاردهمین کنفرانس اپتیک و فوتونیک ایران (سال: 1386)

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خلاصه مقاله:

In this article, perfectly matched layer (PML) for the boundary treatment and an efficient compact two dimensional finite-difference time-domain (2-D FDTD) method were combined to model photonic crystal fibers (PCF). For photonic crystal fibers, if we assume that the propagation constant along the propagation direction is fixed, three-dimensional hybrid guided modes can be calculated by using only a two-dimensional mesh. Using this model, the fundamental characteristics of photonic crystal fibers such as confinement loss and chromatic dispersion are numerically investigated. The results revealed that low confinement loss and zero-flattened chromatic dispersion can be obtained by varying the inner holes diameter. In this work, an especial PCF with nearly zero- flattened dispersion (<1 ps/nm/km) in 1500 ~ 1600 nm wavelength range and low confinement loss (0.06 dB/km at 1.55µm) is designed.

کلمات کلیدی:

Bending Loss, Finite Difference Time Domain Method, Flattened Dispersion, Photonic Crystal Fiber

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