

عنوان مقاله:

Using Elliptic Air-Holes in a Photonic Crystal Fiber to Obtain Ultra-Flattened Dispersion and Ultra-Low Confinement loss

محل انتشار:

بیستمین کنفرانس مهندسی برق ایران (سال: 1391)

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خلاصه مقاله:

In this article, a novel photonic crystal fiber (PCF) structure with elliptic air-holes is proposed. The proposed PCF shows ultra-flattened dispersion and ultra-low confinement loss characteristics in C-band to U-band. The design strategy to achieve ultra-flattened dispersion is based on replacing two circular air-hole rings with elliptic air-hole rings. The elliptic air-hole characteristics (width and height) are optimized to obtain ultra-flattened dispersion. Furthermore, in this paper up-doped core is used to reduce confinement loss. The validity of the proposed design is carried out by employing a 2-D finite difference frequency domain method (FDFD) with perfectly matched layers (PML).

کلمات کلیدی:

Confinement loss, dispersion, elliptic airhole, finite difference frequency domain method, photonic crystal fiber

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