

Abstract

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Apodized Chirped Fiber Bragg Gratings for Wavelength Shift Compensation Under Sea Level

Bragg wavelength shift is numerically studied for different apodization profiles of chirped fiber Bragg grating (FBG). Linear and nonlinear cases are modeled and investigated. The values of the electric field and refractive index have been calculated using the numerical integration of the nonlinear coupled mode equation through Runge-Kutta method. Effects of temperature, pressure and strain under the sea level are studied together with the effect of nonlinearity. Finally, a zero shift has been obtained for each profile for enhancing the performance of FBGs.