

Abstract

Moustafa Hussein Aly

Tunable Third Order Dispersion Compensator Using Nonlinearly Chirped Polymer Fiber Bragg Grating

We propose a design method for tunable third-order dispersion compensation using nonlinearly chirped polymer fiber Bragg grating (FBG) made in fiber tapers. Simulation provides a very large dispersion tuning range from -185.5 ps/nm² (at strain 0.1% and effective grating length, L_{eff} , of 3 cm) to -0.62 ps/nm² (at strain 1%, $L_{\text{eff}} = 1$ cm).