

## Temperature affects the phase of polarization-maintaining fiber



### Overview

The propagating phase changing of a polarization-maintaining photonic crystal fiber (PM-PCF) caused by temperature variation is theoretically studied, as well as compared with conventional PANDA fiber. As to verifying numerical analysis, a platform based on a Michelson interferometer for phase. ption of polarization properties the coherent Jones and Muller matrices were used. This content is available for download via your institution's subscription.



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The cross coupling of the polarization modes of polarization-maintaining fibers is measured in a temperature control chamber. The temperature dependence of the extinction ratio is analyzed in ...



The gradient sensitization of various measurement parameters such as temperature, stress, and micro bending is realized. The temperature sensitivity is  $1.49 \text{ nm}/^\circ\text{C}$ , the micro bending ...



In this paper, we investigate the birefringence of polarization maintaining photonic crystal fibers (PM-PCFs) under thermal effect. Modeling and simulation of PM-PCFs under thermal effect ...



This paper deals with the phase shift development in the polarization-maintaining fiber owing to different temperatures of an applied defined body, where both polarization axes are excited.



PANDA PMF and bow-tie for equal excitation of both polarization axes were studied. Expressive fluctuation led to the construction of a fiber sensor realized and evaluated for  $\lambda = 633 \text{ nm}$ , utilizing good ...



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At the same time, the relationship between extinction ratio and temperature of spun high-birefringence fibers used as sensing fiber ring in FOCT is also tested, which provides experimental support for ...



As the temperature increases, the polarization-maintaining performance decreases. Performance is improved by reducing the temperature. The blue and red traces were calculated ...



Polarization changes due to stress in a fiber vary randomly as the stresses change, and also vary with the temperature of the fiber and the wavelength of light.

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