Refractive Index of Multimode Fibers

Abstract This paper presents a multimode optical fiber design that has high tolerance to bending. The fiber is designed by increasing refractive index difference between core and cladding ...

We propose and develop a comprehensive model for estimating the refractive index (RI) response over three potential sensing zones in a multimode fiber.

Comparative analysis of optical properties of a set of fiber modes is presented, and their advantages and disadvantages in fiber-optic data transmission systems are considered.

We directly specify the refractive index profile, initially choosing the "single step" variant, which is the simplest for a step-index design. For this, we need only a few parameters: the core diameter, the ...

Graded-index multimode fibers: These fibers have a core with a refractive index that decreases gradually from the center to the edge. This graded index helps to reduce modal ...

We provide illustrative design examples, including an optimization of a graded-index MMF with low group delay spread for long-haul mode-division-multiplexed transmission. Our algorithms ...

In this paper, we introduce the concept of spatial and spectral control of nonlinear parametric sidebands in multi-mode optical fibers by tailoring their linear refractive index profile.

This work presents an alternative method for design of refractive index profile for silica GeO2-doped graded-index multimode optical fibers 50/125 with low differential mode delay (DMD), providing ...

While common single-mode fibers have a step-index profile for the refractive index, there are two types of multi-mode fibers: step-index and graded-index (gradient-index) .

MMFs and MCFs have a rich design landscape because they have varied refractive index profile shapes, and can be made with different numerical apertures and core dimensions. The shape of the ...

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