

Abstract

Moustafa Hussein Aly

Temperature Dependence of Zero Dispersion Wavelength in Single-Mode Optical Fibers for Different Materials

The zero dispersion wavelength, λ_0 , for single mode fibers is modelled and investigated for silica, aluminosilicate and vycor glasses. Both step index and graded index fibers are considered. The used model depends mainly on the temperature dependent Sellmeier coefficients of the core refractive index. Temperature effects on λ_0 are investigated for a wide range (-100 °C to +100 °C) as well as the fiber parameters including the core radius and the relative refractive index difference.