

ABSTRACT

Attenuation in optical fiber is minimum when using wavelength about 1,55 μm , while dispersion in optical fiber has its minimum value at wavelength about 1,31 μm . This condition disable optical fiber to have optimum performance.

One way to reduce dispersion in optical fiber can be done by using Dispersion Shift Fiber (DSF), which is an optical fiber which the wavelength of minimum dispersion is shifted to the wavelenght region about 1,55 μm , which resulted optical fiber with minimum dispersion and distortion.

The design is conducted by trying triple layered clad (*triple clad*) by configuring refraction indices and radii of core and claddings layer. From those design, we look for fiber which has minimum dispersion at $\lambda = 1,55\mu\text{m}$ by using dispersion equation.

The result of the design yield dispersion -0,05819 ps/nm.km at $\lambda = 1,55 \mu\text{m}$ wavelength. The proposed design for the DSF optimization yields zero second-order and third-order dispersion at $\lambda = 1,55 \mu\text{m}$. Transmission properties analyzed covering dispersion characteristics, cutoff wavelength, and radial field distribution.