

# **DESIGN OF PHOTONIC CRYSTAL FIBER FOR MINIMUM CONFINEMENT LOSS BY VARYING THE SIZE OF HOLES**

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## **ABSTRACT**

Photonic-crystal fiber (PCF) is a new class of optical fiber based on the properties of photonic crystals. Because of its ability to confine light in hollow cores or with confinement characteristics not possible in conventional optical fiber, PCF is now finding applications in fiber-optic communications, fiber lasers, nonlinear devices, high-power transmission, highly sensitive gas sensors, and other areas. In this paper confinement Loss had been calculated and we know that confinement loss can be calculated on basis of the diameter, pitch and shape of holes. Confinement loss is the loss which should be minimized so that the information to be transmitted is confined in the centre and it should not be dispersed. A 4-layer PCF is designed with different values of diameter of various layers.

**KEYWORDS:** Confinement, Gas Sensors, Confinement Loss, Dispersion