Abstract

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Design of Dispersion Compensating Fibers Operated at Higher Order Modes

Higher order modes in optical fibers exhibit large, negative chromatic dispersion when operated near cutoff. Mode LP02 represents a large negative dispersion than other modes. Hence, the LP02 mode is used as a dispersion compensator to give a short length dispersion compensating fiber (DCF). The DCF length is calculated in the wavelength band 1530 - 1570 nm. It is found to be 25.168 m per 1 km long of the conventional single-mode fiber (SMF) at 1550 nm. Furthermore the dispersion slope and relative dispersion slope is obtained for (DCF) and (SMF).