

Abstract

Mahmoud Mostafa M Ragab

Four-Wave-Mixing Based Wavelength Conversion Using Different Types of Fibers

We demonstrate four-wave-mixing (FWM) based wavelength conversion at 1.55 μm using four different types of optical fibers. For a pump peak power of $\sim 6\text{ W}$, a numerical simulation is used to predict the performance of each type of fibers for different experimental conditions and to address the potential of each fiber type in wavelength conversion applications utilizing four-wave-mixing. It is shown that wavelength conversion, covering the entire C-band, can be achieved with different performance for each type of optical fiber at reasonable optical pump power and for different fiber lengths.