In practical applications, the Uniform fiber Bragg grating (U-FBG) is a key component of integrated photonic circuits like optical filter, splitters, optical sensor and switches etc. This paper evaluates the performance of U-FBG fiber system by changing the size of Bragg cell based on Surface plasmon polaritons (SPP) using silver (Ag) profile material by Finite Difference Time domain (FDTD) method. It is observed that the maximum received optical power at the output port achieved is $8.48 \times 10^{-4}$ w/m$^2$ with 0.9 μm radius of bragg cell and Silver (Ag) profile material at 0.8 w/m$^2$ input transmission power whereas at 1.2 μm radius of bragg cell have low output power of $7.56 \times 10^{-4}$ w/m$^2$.

References

Performance Analysis of U-FBG Fiber System using different Sizes of Bragg Cell


Index Terms

Computer Science

Information Systems

Keywords

Uniform Fiber Bragg Grating (U-FBG), Wavelength-division-multiplexing (WDM), Chirped Fiber Bragg gratings (CFBGs), Vestigial sideband (VSB), Arrayed waveguide grating (AWG).