Abstract

The two channels of plasmonic filter structure are selective based, on a nanocavity, that proposed, and numerically simulated, by using the finite, element method by using COMSOL4.4 software package. The required, filtered wavelength can, be investigated, by selecting, an appropriate length of, the nanocavity and refractive index of dielectric that filled nanocavity.

Two, output channels, structure based, on two perpendicular, nanocavities that, proposed to, design a subwavelength, plasmonic splitter, and demultiplexer operating, around 770 nm and 900 nm with the maximum transmittance of the two bands is 79% for channel1 and 84% for channel2. Three materials used to build structure, metal used as a silver and two types of dielectric quartz with refractive index 1.5 and erbium with refractive index 1.45.

References

Design a 90 Degree Splitter WDM using Plasmonic Technique


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Index Terms

Computer Science  
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Keywords

Plasmonics, Surface plasmon polration, Localized surface plasmon, resonance wavelength,