

Nanyang Technological University



Network Technology Research Centre

L-Band EDFA in WDM System

Introduction:

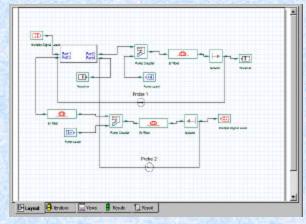
Increasing the gain bandwidth of fiber amplifiers is the most effective way to increase the number of WDM channels and the transmission capacity of 1.5um optical network systems, the combination of the silica based C-band and L-band EDFA is the most immediate viable solution for real system application due to the maturity of the supporting technologies such as the host material and pump sources.

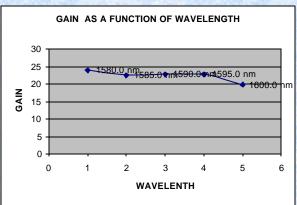
Key Problem.

L-band EDFA, the operating wavelengths are far from the peak emission band of erbium ions, it has low conversion efficiency. In order to improve its efficiency, we detrimental 1550nm ASE for the unpumped EDF section and the backward ASE from C-EDFA as the primary pump to L-band photon mediating sources simultaneously.

Application areas:

optical fibers communication and networking





Conclusion and future work:

A novel structure for L-Band amplifier with enhanced performance has been proposed to increase the capacity of Wavelength Division Multiplexing system.

Future study can be extended to gain clamping amplifier with broad band wavelength, higher gain and lower noise figure

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