To sum up the advantages and counterbalance the drawbacks of various optical amplifier types, a hybrid amplifier can be made. Here a combination of two most popular and frequently used amplifiers i.e. EDFA-RFA i.e. Erbium Doped Fiber Amplifier altogether with Raman Fiber Amplifier; has been used to calculate the lowest gain variation in C band i.e. from 1530nm to 1552.18nm with -24dBm input power using NRZ modulation format. In this paper, optimization of the length of EDFA is done. Also the gain variation and noise figure for various values of pump wavelengths and pump power is analyzed. The obtained results showed better gain flattening with four pumps RFA with value of gain ratio reducing to 0.692 with tolerable NF.

References

“Multi-Pump Optimization for Raman plus EDFA Hybrid Amplifiers under Pump Residual Recycling” SBMO/IEEE MTT-S International Microwave and Optoelectronics Conference (IMOC 2009)


**Index Terms**

Computer Science  
Circuits and Systems

**Keywords**

EDFA, RFA, WDM, NF, DWDM, PON, NRZ.