Abstract

Fiber Raman amplifiers are important component of wavelength division multiplexed fiber-optic communication systems. The number of pumps, determination of powers, wavelengths and pumping schemes are main design criteria to operate these amplifiers. This paper investigates the effect of counter propagating pumping in fiber Raman amplifier. Pumping options like single, two and seven counter propagating pumps are investigated and their effect on bandwidth and gain ripple and signal power conditions are explored. It is shown that optical bandwidth increases from 5.9 THz (45.3 nm) in the range 1535-1584 nm to 12.0 THz (97.6 nm) in the range 1511-1607 nm and gain ripple decreases to 0.47 from 0.82 by increasing the number from one to seven counter propagating pumps in the fiber Raman amplifier.

References

Investigations on Multi Pumped Fiber Raman Amplifiers over WDM in Optical Communication System

2004.

Index Terms

Computer Science
Communication Systems

Keywords
Multi- pumping fiber Raman amplifier optimization of gain flatness