

Experimental Demonstration of Broadband Erbium-Doped Fiber Amplifier

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Abstract : In this paper, broadband design of erbium doped fiber amplifier (EDFA) is demonstrated and proved experimentally. High and broad gain is covered in C and L bands. The used technique combines, in one configuration, two double passes with split band structure for the amplification of two traveled signals one for the C band and the other for L band. This new topology is to investigate the trends of high gain and wide amplification at different status of pumping power, input wavelength, and input signal power. The presented paper is to explore the performance of EDFA gain using what it can be called double pass double branch wide band amplification configuration. The obtained results show high gain and wide broadening range of 44.24 dB and 80 nm amplification respectively.

Keywords : erbium doped fiber amplifier, erbium doped fiber laser, optical amplification, fiber laser

Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development

Conference Location : Chicago, United States

Conference Dates : December 12-13, 2020