

Abstract

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Temperature Effect on Erbium Doped Fiber Amplifier in Multichannel System for Different Glass Hosts

Temperature effect on the gain of multichannel (ten channels) erbium-doped fiber amplifiers (EDFAs) is analyzed based on a linear extrapolation. In order to use the model for gain shaped calculations, some simplifications are demonstrated. Forward pumping is considered taking both amplified spontaneous emissions (ASE) and scattering loss into account. The amplifier gain at the optimum length is given for each channel and hence, the temperature effect is calculated for a wide range of temperature. This procedure is repeated for six different glass hosts, namely alumino-germanosilicate, bismuth, fluoride phosphate, oxyfluoride silicate, tellurium and aluminum oxide.