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| **Title:** | Performance Analysis of Co- and Counter-Propagation Pump Scheme Based on Optimized EDFA Parameters | | | |
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| **Published Journal Name:** | AIUB Journal of Science and Engineering (AJSE) | | | |
| **Type of Publication:** | Journal | | | |
| **Volume:** | 13 | | Issue | 1 |
| **Publisher:** | AIUB Office of Research and Publication | | | |
| **Publication Date:** | August 2014 | | | |
| **ISSN:** | | 1608-3679 (Print) | | |
| **DOI:** |  | | | |
| **URL:** | https://orp.aiub.edu/ajse-13-01 | | | |
| **Other Related Info.:** |  | | | |
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| **Abstract:** |  |
| Fiber loss is a major drawback when passing signal in long haul fiber optic communication links and optical networks. To boost the signal in long distance Erbium Doped Fiber Amplifier (EDFA) is most frequently used. The performance of EDFA depends on various parameters like, numerical aperture, Er3+ ion density, active fiber length, pump power, pumping wavelength etc. In this work, the gain, output power and noise figure have been investigated in terms of varying different parameters of EDFA (length of EDFA, numerical aperture, Er3+ ion density and pump power) for co- (forward pumping) and counter- (backward pumping) propagation pump scheme. Here, a gain-flattening characteristic of EDFA has been obtained in Conventional band (C-band) (1525-1565nm) by employing the 980nm pump laser. For simulation purpose, OptiSystem 7.0 software has been used. After analyzing, the maximum gain has been obtained as 20.531729dB for co-propagation pump scheme whereas for counter-propagation pump scheme 21.053208dB has been obtained as the maximum gain. | |