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Dual wavelength fibre laser with tunable channel spacing using an SOA and dual AWGs (Article)

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Abstract

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In this paper, we propose and demonstrate a dual wavelength fibre laser (DWFL) based on the use of an inhomogeneously-broadened semiconductor optical amplifier (SOA) gain medium as well as two arrayed waveguide gratings (AWGs) together with two optical channel selectors (OCSs) and a broadband fibre Bragg grating (FBG) to generate dual wavelength output at variable channel spacings. The widest spacing obtained from the DWFL is 12.21 nm, while the narrowest spacing is 1.16 nm. The DWFL has good stability with only minor power fluctuations of less than 2 dB and a side mode suppression ratio (SMSR) of approximately 38.5 dB with fluctuations of less than 0.5 dB.

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Author keywords

AWG DWDM Fibre laser SOA

Indexed keywords

Engineering uncontrolled terms

Channel spacings Dual wavelength Fibre Bragg grating Fibre lasers
Gain medium Good stability Optical channel selectors Power fluctuations
Side mode suppression ratios

Engineering controlled terms:

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(2013) *Microwave and Optical Technology Letters*

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Ahmad, H. , Latif, A.A. , Taib, J.M.
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