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Configurable triple wavelength semiconductor optical amplifier fiber laser using multiple broadband mirrors (Article)

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Abstract

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A configurable, triple wavelength fiber laser based on broadband mirrors (BBMs) and an arrayed waveguide grating (AWG) is demonstrated. The laser uses a semiconductor optical amplifier (SOA) as the primary gain medium due to its inhomogeneous broadening property that allows for the generation high intensity lasing wavelengths. The combination of the AWG and BBMs allows for triple lasing wavelength outputs with channel spacing from 0.8 to 4.0 nm to be obtained. The generated output is adjustable between 1540.6 and 1548.6 nm. The proposed SOA-based system is stable and can be used as a reserve laser source for wavelength division multiplexing systems. © 2019 Wiley Periodicals, Inc.

SciVal Topic Prominence

Topic: Fiber lasers | Erbium | Wavelength spacing

Prominence percentile: 91.898

Author keywords

AWG | broadband mirror | multi-wavelength | SOA | WDM

Indexed keywords

Engineering controlled terms: Arrayed waveguide gratings | Broadband amplifiers | Fiber amplifiers | Fiber lasers | Multiplexing equipment | Optical switches | Semiconductor optical amplifiers | Waveguides | Wavelength division multiplexing

Engineering uncontrolled terms: Broadband mirrors | Channel spacings | Inhomogeneous broadening | Lasing wavelength | Multi-wavelengths | SOA-based systems | Triple wavelengths | Wavelength-division multiplexing system

Engineering main heading: Laser mirrors

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Funding text #1

Harith Ahmad harith@um.edu.my Nur F. Azmy Atiqah N. Azmi Mohd Z. Zulkifli Mohd F. Ismail Photonics Research Center University of Malaya Kuala Lumpur Malaysia Physics Department University of Malaya Kuala Lumpur Malaysia Physics Department Centre of Advanced Optoelectronics Research (CAPTOR), Kulliyyah of Science, International Islamic University Malaysia Kuantan Malaysia AWG broadband mirror multi-wavelength SOA WDM Ministry of Higher Education, Malaysia GA010-2014(ULUNG) Universiti Malaya HiCoE Phase II Funding RU 013-2018

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References (21)

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1 Zulkifli, M.Z., Hassan, N.A., Awang, N.A., Ghani, Z.A., Harun, S.W., Ahmad, H.

Multi-wavelength fiber laser in the S-band region using a Sagnac loop mirror as a comb generator in an SOA gain medium

(2010) *Laser Physics Letters*, 7 (9), pp. 673-676. Cited 44 times.
http://onlinelibrary.wiley.com.ezproxy.um.edu.my/doi/10.1002/lapl.201010046/pdf
doi: 10.1002/lapl.201010046

View at Publisher

2 Zulkifli, M.Z., Ahmad, H., Hassan, N.A., Jemangin, M.H., Harun, S.W.

An ultra-wideband tunable multi-wavelength Brillouin fibre laser based on a semiconductor optical amplifier and dispersion compensating fibre in a linear cavity configuration

(2011) *Quantum Electronics*, 41 (7), pp. 602-605.
http://iopscience.iop.org.ezproxy.um.edu.my/1063-7818/41/7/A05/pdf/1063-7818_41_7_A05.pdf
doi: 10.1070/QE2011v041n07ABEH014546

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