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17-channels S band multiwavelength Brillouin / Erbium Fiber Laser co-pump with Raman source (Article)

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Abstract

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In this paper, we propose and demonstrate a stable Brillouin - Erbium Fibre Laser (BEFL) capable of generating up to 17 lasing wavelengths in the Short-Wave length (S-band) region. The proposed setup uses a 7.7 km Dispersion Compensating Fibre (DCF) to act as a non-linear gain medium and a 30 m long Depressed-Cladding Erbium Doped Fibre (DC-EDF) as an optical amplifier for amplification in the S-band region. The proposed BEFL has an optimum tuning range of 1499 to 1502 nm and is capable of generating 17 lasing wavelengths with peak powers of between -20 to -15 dBm when injected with a Brillouin Pump (BP) of 5 dBm at 1499 nm and a Raman Pump (RP) of 300 mW at 1420 nm. © 2009 Pleiades Publishing, Ltd.

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Engineering uncontrolled terms: Band region, Brillouin, Brillouin pump, Brillouin / erbium fiber lasers, Erbium doped, Fibre lasers, Lasing wavelength, Multiwavelength, Nonlinear gains, Optical amplifier, Optimum tuning, Peak power, Raman pump, Raman source, Short waves

Engineering controlled terms: Amplification, Dispersion compensation, Erbium, Fiber lasers, Fibers, Light amplifiers, Optoelectronic devices, Pumps

Engineering main heading: Pumping (laser)

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