

Optimization of Brillouin pump wavelength location on tunable multiwavelength BEFL

ABSTRACT

Optimization of Brillouin pump (BP) wavelength location on tunable multiwavelength Brillouin-erbium fiber laser (BEFL) with BP pre-amplified technique is experimentally investigated. The tunable multiwavelength BEFL is achieved by utilization a tunable band-pass filter in a laser cavity. The optimum BP power and BP wavelength location within the filter bandwidth is determined in order to obtain the maximum stable output channels. Optimum distance of launching the BP wavelength is found at 0.80 nm shorter from the center wavelength of the filter bandwidth. 15 stable output channels are achieved from the tunable fiber laser system within the optimum range of BP power which is found to be between 5.2 to 5.7 dBm.

Keyword: Brillouin pump; Brillouin-erbium fiber lasers; Center wavelength; Filter bandwidth; Laser cavity; Multiwavelength; Output channels; Tunable fiber lasers