

Tunable multiwavelength Brillouin-Erbium fiber laser with intra-cavity pre-amplified Brillouin pump

ABSTRACT

We have demonstrated a new configuration of Brillouin-Erbium fiber laser, in which the Brillouin pump is preamplified within the laser cavity before entering the single-mode fiber. By using this simple scheme, a lower external Brillouin pump power is required to create the Brillouin gain and suppresses the laser cavity modes. The proposed laser structure exhibits a wide tuning range of 13 nm from 1597 nm to 1610 nm with 1480 nm pump power of 100 mW. The number of channels obtained within this wavelength range is 14 channels with 0.089 nm spacing.

Keyword: multiwavelength fiber laser, optical fiber devices, nonlinear-Brillouin scattering