

## Abstract

We demonstrate a simple tunable L-band multiwavelength Brillouin-Erbium fiber laser that utilizes a short passive erbium doped fiber (PEDF) as an absorber section. The impact of including the PEDF absorber section on the laser tunability is investigated. The proposed laser structure exhibits a wide tuning range of 24.4 nm (from 1583.5 nm to 1607.9 nm) at 1480 nm pump and Brillouin pump powers of 100 and 4 mW, respectively. This tuning range represents a 31% increase compared with a laser without a PEDF absorber section. The average number of stable output channels produced within this wavelength range is 16 channels with a spacing of 0.089 nm.