

Multiwavelength Brillouin-Raman ring-cavity fiber laser with 22-GHz spacing.

ABSTRACT

We experimentally demonstrate a multi-wave length Brillouin-Raman fiber laser configured in a ring-cavity resonator. Interactions between stimulated Brillouin scattering and Raman amplification in a dispersion compensating fiber, attributed to the generation of 16 output channels at injected Raman pump unit power of 650 mW and Brillouin pump power of 2.0 mW. The first output channel has a peak power of 14.8 mW. By discriminating the even-order Brillouin Stokes signals from circulating in the resonator, the generated output channels were found to have wavelength spacing of ~ 22 GHz. The output channels were also found to have average optical signal-to-noise ratio value of 11.7 dB.

Keyword: Laser Technology; Photonics