

Pump distribution effect in dual-wavelength Raman-erbium random distributed feedback fiber laser

ABSTRACT

This work demonstrates a simple dual-wavelength random distributed feedback fiber laser via excitation of the Raman-erbium hybrid gain by a single pump source. Lasing wavelengths at 1568 nm and 1595 nm with 48.48 dBm maximum OSNR were generated without the need for physical reflectors. Enhancements were performed using pump power distribution and a seeded feedback to reduce the peak disparity to only 0.16 dB. The long cavity hybrid random laser with its balanced and broadly spaced dual-wavelength output offers immense potential for long distance dual laser applications.