

Optimization of tunable dual wavelength erbium-doped-fiber laser

ABSTRACT

This paper reports the design optimization of a novel tunable dual wavelength erbium doped fiber ring laser. The effects of pump wavelength, active fiber length, and coupling ratio on threshold pump power, output power, and side mode suppression ratio (SMSR) of the lasers are investigated. Pumping at wavelength of 1480 nm provides high output and lower threshold power of 2.8 mW. The optimum erbium-doped fiber (EDF) length requires for a given pump power varies as a function of pump wavelengths. The pump wavelength and EDF length have no effect on the laser stability.

Keyword: Fiber laser; Erbium doped fiber; Tunable laser; Dual wavelength laser.