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Wavelength Tunable Distributed Amplification DFB Laser Array

- Triple features of high-speed, wideband and stable operation -

NTT

Motivation

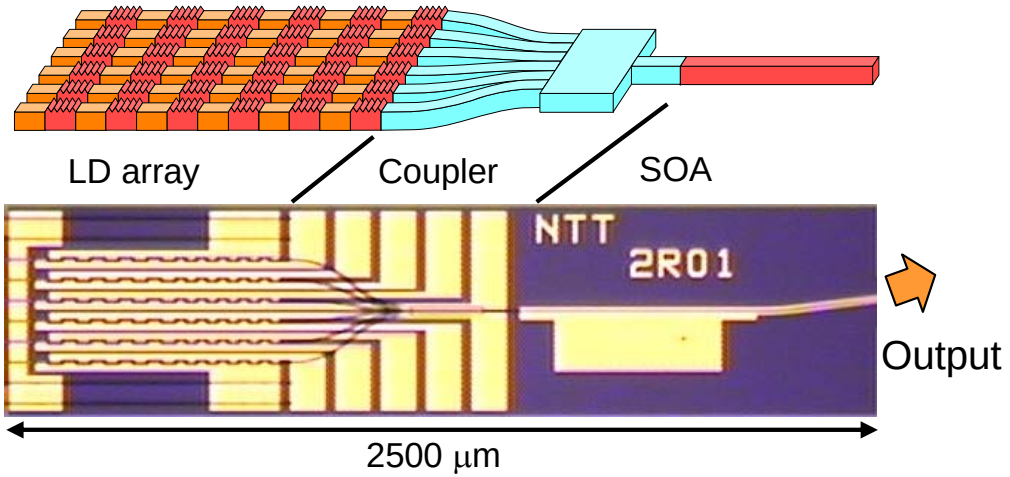
Signal light sources that can provide multiple channels, known as wavelength tunable lasers, are necessary for Wavelength Division Multiplexing (WDM) systems. Wavelength tunable lasers that provide high-speed, wideband and stable operation are urgently needed for optical fiber communication systems.

Originality

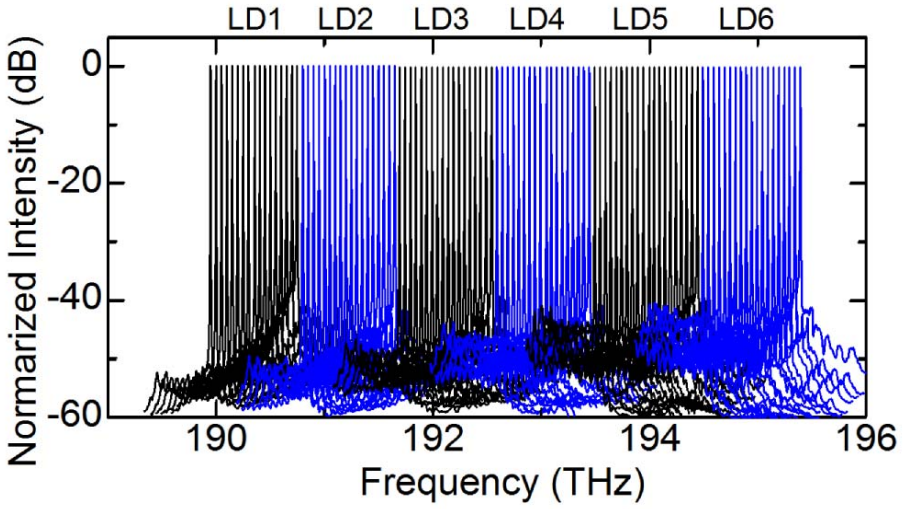
A total tuning range of 44 nm was successfully achieved by using an array of 6 TDA-DFB lasers with a 7-8 nm tuning range. The lasing wavelength of TDA-DFB lasers can be tuned quickly and continuously with a single tuning electrode. Therefore, high-speed, wideband and stable operation can be obtained with a TDA-DFB laser array.

Impact

Compact systems with a low power consumption can be achieved, because only one device in the TDA-DFB laser array can provide 110 channels with a 50 GHz grid. In addition, it can be used for future optical fiber communication network applications, such as wavelength label switching, owing to its high-speed tuning.



TDA-DFB-LD array (Overhead view & top picture)



Spectrum (50GHz grid 110ch)

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