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Title

Rapidly frequency-swept optical beat source for continuous wave terahertz generation

Source

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Abstract

We propose a rapidly frequency-swept optical beat source for continuous wave (CW) THz generation using a wavelength swept laser and a fixed distributed feedback (DFB) laser. The range of the sweeping bandwidth is about 17.3 nm (2.16 THz), 1541.42-1558.72 nm. The achieved side mode suppression ratio for both wavelengths within the full sweeping range is more than 45 dB. We observe CW THz signals for tunable optical beat sources using a fiber coupled CW THz measurement system to confirm the feasibility of using our frequency swept optical beat source as a CW THz radiation source. The THz output signal falls to the thermal noise level of the low-temperature grown (LTG) InGaAs photomixer beyond 1.0 THz. The rapidly frequency-swept optical beat source will be useful for generating high-speed tunable CW THz radiation. (20 References).