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摘要: We present a terahertz source based on difference frequency generation within a laser cavity. Combining the high intracavity intensities of a dual-color vertical external cavity surface emitting laser (VECSEL) with the high nonlinear coefficient of a periodically poled lithium niobate crystal enables the generation of milliwatts of continuous wave terahertz radiation. As the frequency spacing between the two simultaneously oscillating laser lines can be adjusted freely, the entire range of the terahertz gap can be covered. We discuss different approaches for the wavelength control of the dual-color laser sources as well as emission characteristics of the nonlinear crystal. Exemplarily, we chose the frequencies 1.9 THz to characterize the source in term of the beam shape, the linewidth and power scalability. To investigate the emitted THz spectrum, heterodyne detection is employed.
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