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标题: Terahertz Generation from Quasi-Phase Matched Gallium Arsenide using a Type-II Ring Cavity Optical Parametric Oscillator

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摘要: Resonant cavity enhancement results in substantial improvement in the efficiency of photonic THz-wave generation via difference frequency generation (DFG). A nearly degenerate optical parametric oscillator (OPO) was pumped by 6 ps pulses at 1064 nm, producing signal and idler pulses with average total power in excess of 80 W. By placing a sample of quasi-phasesmatched gallium arsenide (QPM-GaAs) at a focus of a ring cavity OPO, multicycle, narrowband THz radiation was produced, with average powers in excess of 100 μ W and peak powers exceeding 150 mW. The dependence of the THz power on pump power shows no signs of saturation, so with higher power pump lasers, mW levels of average THz should be obtainable.

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