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Author

Rao, ZM (Rao, Zhiming); Wang, XB (Wang, Xinbing); Lu, YZ (Lu, Yanzhao)

Title

Tunable terahertz generation from one CO(2) laser in a GaSe crystal

Source

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Abstract

Coherent terahertz pulses have been generated at a range of 236.3-1104.5 mu m (0.27-1.3 THz) by one CO(2) laser with dual-wavelength output based on collinearly phase-matched different frequency generation (DFG) in a GaSe crystal. This source has the advantages of compact and simplicity for tuning. The output power of the THz pulse and phase-matching conditions were investigated. The maximum single pulse energy of 11 nJ was generated at a frequency of 1.23 THz (243.6 mu m), corresponding to a peak output power 182 mW.