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Title:Generation of high-frequency terahertz waves in periodically poled $LiNbO_3$ based on backward parametric interaction
Authors:Ruolin Chen (1); Guan Sun (1); Guibao Xu (1); Ding, Y.J. (1); Zotova, I.B. (2)
Author affiliation:(1) Dept. of Electr. & Comput. Eng., Lehigh Univ., Bethlehem, PA, United States; (2) ArkLight, Center Valley, PA, United States
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Abstract:Backward terahertz pulses at high frequencies are generated in multi-period periodically poled $LiNbO_3$ using ultrafast pulses of a regenerative amplifier. The highest frequencies generated by us are centered at 4.8 THz at the poling period of 7.1 μm, corresponding to the output wavelength of 62.5 μm. Enhancement factors as large as 61 in the output powers are achieved and analyzed due to resonance-enhanced nonlinear optical coefficients.
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Inspec controlled terms:lithium compounds - optical constants - terahertz wave spectra
Uncontrolled terms:resonance-enhanced nonlinear optical coefficient - regenerative amplifier - ultrafast pulse - backward parametric interaction - high-frequency terahertz wave - frequency 4.8 THz - wavelength 62.5 mum - $LiNbO_3$
Inspec classification codes:A7870G Microwave and radiofrequency interactions with condensed matter - A7820D Optical constants and parameters (condensed matter)
Numerical data indexing:frequency 4.8E+12 Hz;wavelength 6.25E-05 m
Chemical indexing:LiNbO3 NbO3 O3 Li Nb O
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