197
标题: GaP based terahertz time-domain spectrometer optimized for the 5-8 THz range
作者: Vugmeyster, ID (Vugmeyster, I. D.); Whitaker, JF (Whitaker, J. F.); Merlin, R (Merlin, R.)
来源出版物: APPLIED PHYSICS LETTERS 卷: 101 期: 18 文献号: 181101 DOI: 10.1063/1.4764545 出版年: OCT 29 2012
在 Web of Science 中的被引频次: 0
被引频次合计: 0
引用的参考文献数: 29
摘要: We use GaP to generate terahertz pulses via optical rectification in a collinear phase-matched configuration relying on the dispersion of the refractive index. The GaP-based time-domain system operates up to 8 THz and is especially well suited at high frequencies, where it has high signal-to-noise ratio and power conversion efficiency similar to 30 times greater than those of commercial photoconductive emitters. These characteristics are demonstrated in measurements of ZnTe in the reflection geometry. We also discuss the power output and describe theoretically the observed THz field generation by nonlinear mixing, the field's free space propagation, and its detection. (C) 2012 American Institute of Physics. [http://dx.doi.org/10.1063/1.4764545]
入藏号: WOS:000311064500001
语种: English
文献类型: Article
KeyWords Plus: OPTICAL RECTIFICATION; ELECTROOPTIC DETECTION; GENERATION; RADIATION; SPECTROSCOPY; PULSES; THRESHOLD; LIFETIMES; EMITTERS; GAAS
地址: [Vugmeyster, I. D.; Merlin, R.] Univ Michigan, Dept Phys, Ann Arbor, MI 48109 USA
[Whitaker, J. F.] Univ Michigan, Ctr Ultrafast Opt Sci, Ann Arbor, MI 48109 USA
通讯作者地址: Vugmeyster, ID (通讯作者),Univ Michigan, Dept Phys, Ann Arbor, MI 48109 USA.
电子邮件地址: ilyav@umich.edu
出版商: AMER INST PHYSICS
出版商地址: CIRCULATION & FULFILLMENT DIV, 2 HUNTINGTON QUADRANGLE, STE 1 N O 1, MELVILLE, NY 11747-4501 USA
Web of Science 类别: Physics, Applied
研究方向: Physics
IDS 号: 036XB
ISSN: 0003-6951
29 字符的来源出版物名称缩写: APPL PHYS LETT
ISO 来源出版物缩写: Appl. Phys. Lett.
来源出版物页码计数: 4