100
标题: Terahertz waveguide emitters in photonic crystal fiber form
作者: Li, YF (Li, Yanfeng); Hu, XK (Hu, Xiaokun); Liu, F (Liu, Feng); Li, J (Li, Jiang); Xing, QR (Xing, Qirong); Hu, ML (Hu, Minglie); Lu, C (Lu, Chai); Wang, CY (Wang, Chingyue)
来源出版物: JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B-OPTICAL PHYSICS
卷: 29 期: 11 页: 3114-3118 出版年: NOV 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: 34
摘要: The phase-matching condition for broadband terahertz (THz) wave generation based on optical rectification requires that the group velocity of the optical pump beam be equal to the phase velocity of the THz wave. The design of GaP THz waveguide emitters in the form of photonic crystal fibers (PCFs) for a pump source of wavelength 1040 nm is reported. By analogy with a circular waveguide emitter, we show how the phase-matched THz wave frequency can be tuned widely by the air hole pitch and finely tuned by the air hole size. In addition, a single THz wave mode can be guided in the endlessly single-mode regime of the fiber waveguide. The layers of air holes in the PCF design not only allow tunability of the generated THz radiation but also make small emitters easy to handle. (C) 2012 Optical Society of America
入藏号: WOS:000310708700020
语种: English
文献类型: Article
KeyWords Plus: MICROSTRUCTURED-OPTICAL-FIBERS; TIME-DOMAIN SPECTROSCOPY; CONVERSION EFFICIENCY; GALLIUM-PHOSPHIDE; THZ GENERATION; POWER; GAP; TECHNOLOGY; PULSES; ENHANCEMENT
地址: [Li, Yanfeng; Hu, Xiaokun; Liu, Feng; Li, Jiang; Xing, Qirong; Hu, Minglie; Lu, Chai; Wang, Chingyue] Tianjin Univ, Ultrafast Laser Lab, Coll Precis Instrument & Optoelect Engn, Key Lab Optoelect Informat Technol,Minst Educ, Tianjin 300072, Peoples R China
通讯作者地址: Li, YF (通讯作者),Tianjin Univ, Ultrafast Laser Lab, Coll Precis Instrument & Optoelect Engn, Key Lab Optoelect Informat Technol,Minst Educ, Tianjin 300072, Peoples R China.
电子邮件地址: yanfengli@tju.edu.cn
出版商: OPTICAL SOC AMER
出版商地址: 2010 MASSACHUSETTS AVE NW, WASHINGTON, DC 20036 USA
Web of Science 类别: Optics
研究方向: Optics
IDS 号: 032IG
ISSN: 0740-3224
29 字符的来源出版物名称缩写: J OPT SOC AM B
ISO 来源出版物缩写: J. Opt. Soc. Am. B-Opt. Phys.
来源出版物页码计数: 5