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标题: Dual-wavelength laser for THz generation by photo-mixing
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来源出版物: PHOTONIC CRYSTAL MATERIALS AND DEVICES X??丛书: Proceedings of SPIE??卷: 8425??文献号: 84250H??DOI: 10.1117/12.922505??出版年: 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: 21
摘要: We present the design and the fabrication of a dual-wavelength micro-photonic resonator combining a photonic crystal membrane (PCM) and a vertical Fabry Perot (FP) cavity where the former is embedded in the latter. A strong optical coupling between a PCM Gamma-point Bloch mode and a FP mode at the same frequency can be used to provide a dual-wavelength device with a frequency difference which is analysed in terms of modes overlapping. We propose and demonstrate a process flow that can be used to provide such a device. Optical reflectivity characterisation is presented for a monolithic device and photoluminescence dual-wavelength spontaneous emission is demonstrated in an extended vertical cavity. Finally the dual-mode laser emission stability is examined with numerical Monte Carlo simulation.
入藏号: WOS:000304392700010
语种: English
文献类型: Proceedings Paper
会议名称: Conference on Photonic Crystal Materials and Devices X
会议日期: APR 16-19, 2012
会议地点: Brussels, BELGIUM
会议赞助商: SPIE, Brussels Photon Team (B-PHOT), Brussels-Capital Reg, Fonds Wetenschappelijk Onderzoek (FWO), Int Commiss Opt (ICO), Ville Bruxelles
作者关键词: nanophotonics and photonic crystal; micro-cavity; dual-wavelength laser; wavelength conversion devices; THz generation
KeyWords Plus: TEMPERATURE-GROWN GAAS; SEMICONDUCTOR-LASERS; TERAHERTZ RADIATION; CRYSTAL; SPECTROSCOPY
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出版商: SPIE-INT SOC OPTICAL ENGINEERING
出版商地址: 1000 20TH ST, PO BOX 10, BELLINGHAM, WA 98227-0010 USA
Web of Science 分类: Optics
学科类别: Optics
IDS 号: BAK17
ISSN: 0277-786X

ISBN: 978-0-8194-9117-6
29 字符的来源出版物名称缩写: PROC SPIE
来源出版物页码计数: 8