293.
标题: PLANAR GRATING MULTIPLEXERS USING SILICON NANOWIRE TECHNOLOGY: NUMERICAL SIMULATIONS AND FABRICATIONS
作者: Song, J (Song, J.); Li, Y (Li, Y.); Zhou, X (Zhou, X.); Li, X (Li, X.)
来源出版物: PROGRESS IN ELECTROMAGNETICS RESEARCH-PIER 卷: 123 页: 509-526 DOI: 10.2528/PIER11110402 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: 32
摘要: Planar waveguide gratings have shown great potential for the application of the wavelength division multiplexing (WDM) functionality in optical communications due to their compactness and high spectral finesse. Planar gratings based on silicon nanowire technology have high light confinements and consequently very high integration density, which is 1-2 orders of magnitude smaller than conventional silica based devices. In the present paper, we will simulate the silicon nanowire based planar grating multiplexer with total-internal-reflection facets using a boundary integral method. The polarization dependent characteristics of the device are analyzed. In addition, the planar grating multiplexer with 1 nm spacing is fabricated and characterized. Compared with measured values, the numerical results show that the sidewall roughness in the grating facets can result in a large insertion loss for the device.
入藏号: WOS:000300643000029
语种: English
文献类型: Article
KeyWords Plus: THZ IMAGING-SYSTEM; SMALL LENS ARRAY; WAVE-GUIDES; PHOTONIC CRYSTAL; DEMULTIPLEXERS; METAMATERIAL; SCATTERING; SEMICONDUCTOR; POLARIZATION; FREQUENCIES
地址: [Song, J.; Li, Y.; Zhou, X.] Shenzhen Univ, Inst Optoelect, Minist Educ Guangdong Prov, Key Lab Optoelect Devices & Syst, Shenzhen 518060, Peoples R China
[Li, X.] Hangzhou Normal Univ, Sci Coll, Hangzhou 310036, Zhejiang, Peoples R China
通讯作者地址: Song, J (通讯作者),Shenzhen Univ, Inst Optoelect, Minist Educ Guangdong Prov, Key Lab Optoelect Devices & Syst, Shenzhen 518060, Peoples R China
电子邮件地址: songjun@szu.edu.cn
出版商: E M W PUBLISHING
出版商地址: PO BOX 425517, KENDALL SQUARE, CAMBRIDGE, MA 02142 USA
Web of Science 分类: Engineering, Electrical & Electronic; Physics, Applied; Telecommunications
学科类别: Engineering; Physics; Telecommunications
IDS 号: 897IM
ISSN: 1559-8985
29 字符的来源出版物名称缩写: PROG ELECTROMAGN RES
ISO 来源出版物缩写: Prog. Electromagn. Res.
来源出版物页码计数: 18