760
标题: Volume Bragg Gratings as Ultra-Narrow and Multiband Optical Filters
作者: Glebov, AL (Glebov, Alexei L.); Mokhun, O (Mokhun, Oleksiy); Rapaport, A (Rapaport, Alexandra); Vergnole, S (Vergnole, Sebastien); Smirnov, V (Smirnov, Vadim); Glebov, LB (Glebov, Leonid B.)
编者: Thienpont H; Mohr J; Zappe H; Nakajima H
来源出版物: MICRO-OPTICS 2012?? 丛书: Proceedings of SPIE?? 卷: 8428?? 文献号: 84280C??DOI: 10.1117/12.923575??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: 19
摘要: High efficiency volume Bragg gratings (VBGs) in photo-thermo-refractive (PTR) glass provide unmatched optical filtering capabilities with optical densities as high as 50 dB and linewidths as narrow as 1 cm(-1). In this work we review recent advances in VBG technologies that enabled key improvements of high efficiency grating properties and led to development of unique VBG based optical filters for Raman spectroscopy and other applications. Such narrow band notch and bandpass filters make ultra-low frequency Raman measurements possible with single stage spectrometers, therefore, largely improving optical throughput of high end Raman instruments while reducing complexity of the measurements. In this work we also present novel volume multiplexed ultra-narrow band VBG filters with high reflection at multiple wavelengths. Such multiband holographic optical elements are formed by overlapping of several high efficiency VBGs in a single glass plate. Raman spectra obtained with multiband VBG filters and single stage spectrometers, show unmatched capability of the filters to provide simultaneous access to Stokes and anti-Stokes Raman modes with frequencies as low as 5 cm(-1) at different wavelengths.
入藏号: WOS:000304392600004
语种: English
文献类型: Proceedings Paper
会议名称: Conference on Micro-Optics
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: volume Bragg gratings; narrow band optical filters; multiband notch filters; holographic optical elements; Raman spectroscopy; THz frequency vibration measurements; low wavenumber spectroscopy
KeyWords Plus: FIBER LASER; GLASS; MODE
地址: [Glebov, Alexei L.; Mokhun, Oleksiy; Smirnov, Vadim; Glebov, Leonid B.] OptiGrate Corp, Orlando, FL 32826 USA
通讯作者地址: Glebov, AL (通讯作者),OptiGrate Corp, 3267 Progress Dr, Orlando, FL 32826 USA
电子邮件地址: aglebov@optigrate.com
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: BAK16
ISSN: 0277-786X
ISBN: 978-0-8194-9120-6
29 字符的来源出版物名称缩写: PROC SPIE
来源出版物页码计数: 11