

- EI Compendex, CA, SA 收录期刊
- 原子能技术类中文核心期刊

ISSN 1001-4322
CN 51-1311/O4
CODEN QYLIEL

强激光与粒子束

HIGH POWER LASER AND PARTICLE BEAMS



中国工程物理研究院
中国核学会 主办
四川核学会

第25卷 第2期

2013

目 次

综 述

重复频率爆炸发射阴极现状及展望 马 勋, 邓建军, 姜 苹, 等 (269)

高功率激光与光学

- 基于光纤阵列的激光光斑测量方法 吴 勇, 杨鹏翎, 陈绍武, 等 (276)
- 高功率脉冲光隔离器非线性及热效应分析 赵 钦, 张海涛, 郑 超, 等 (281)
- 任意球面元件的超高反射率测量方法 易亨瑜, 彭 勇, 黄祖鑫, 等 (287)
- 湍流大气中激光传输对傅里叶望远镜成像质量的影响 李 杨, 相里斌, 张文喜 (292)
- 气流加热对气动光学效应的影响 张 黎, 陶彦辉, 王贵兵, 等 (297)
- 大口径精密光学调整架的优化设计 郭建增, 刘铁根, 池 伟, 等 (301)
- 同步双脉冲激光致声研究 王晓宇, 王江安, 宗思光, 等 (305)
- 体布拉格光栅外腔半导体激光器的光栅旋转角度容差 李志永, 谭荣清, 徐 程, 等 (310)
- 基于 GS 加权改进算法的相位恢复 彭金猛, 杜少军, 蒋鹏志 (315)
- 管板式大功率横流 CO₂ 激光横模测量及数值模拟 许周速, 程 成, 姚建华 (319)
- 能动磨盘变形检测中的各误差因素分析 赵洪深, 李晓今, 曾志革 (325)
- 抑制高阶谐波误差的随机相移条纹分析算法 孙莉莉, 徐建程, 李 勇 (330)
- 微方肋冷却系统的换热特性 刘 东, 蒋 斌, 陈 飞 (335)
- 复杂 CCD 航空相机光学系统快速消热差设计 钱义先, 程晓薇, 邵 杰, 等 (341)
- 球面参考光预放大数字全息成像系统分辨率 王华英, 刘飞飞, 成 惠, 等 (345)
- 水溶性 CdTe:Mn 量子点的双光子吸收 刘丽炜, 李 钰, 胡思怡, 等 (350)
- 分布反馈式光纤激光器的光热调谐方法 赵 强, 王永杰, 徐团伟, 等 (355)
- 固体板条 MOPA 激光光束质量主动控制 向汝建, 何忠武, 徐宏来, 等 (358)
- 激光 LCOS 光学引擎的设计(英) 那柏林, 刘 红, 王蔚生 (366)
- 激光相干合成光束质量评价 蒋茂华, 苏 毅 (367)

ICF 与激光等离子体

- KBA 型 X 射线显微系统 赵玲玲, 孙德林, 胡家升 (371)
- 辐射驱动冲击波速度被动式测量 王哲斌, 蒋小华, 李三伟, 等 (375)
- 利用 CR39 上的径迹鉴别激光加速离子产物 伍 波, 董克攻, 吴玉迟, 等 (381)
- 再发射技术测量 SG II 黑腔靶早期对称性 陈伯伦, 蒋 炜, 景龙飞, 等 (385)
- Z 箍缩动态黑腔负载装配用胶粘剂 杨 波, 周秀文, 何 伟, 等 (389)

高功率微波

- 9.4 GHz 过模光滑壁 TE₁₁-HE₁₁ 模式变换器设计 徐 刚, 余 川, 李正红, 等 (394)
- 介质面刻槽抑制二次电子倍增蒙特卡罗模拟 董 烨, 董志伟, 杨温渊, 等 (399)
- 速调管双间隙双耦合口输出结构 葛 萌, 王 勇 (407)
- 基于贝叶斯序贯方法的微波效应实验设计 韩 峰, 陆希成, 刘 钰, 等 (411)
- 紧凑型宽带 TE₀₁-TE₀₂ 模式转换器 王 强, 周海京, 杨 春, 等 (415)
- 介质窗口材料对高功率微波传输特性的影响 黄惠军, 侯 青, 朱晓欣, 等 (419)
- 行波管栅控电子枪热形变研究 阮久福, 杨 军, 邓光晟, 等 (423)
- 170 GHz 缓变截面开放式谐振腔传播特性模拟 覃觅觅, 罗 勇, 杨仕超, 等 (427)
- 横向电感膜片微波矩形波导的传输特性 董玉和, 樊琼星, 刘田达, 等 (431)
- 密集阵高功率微波空间功率合成 邓朝平, 侯德亭, 周东方, 等 (436)
- 全局稳定性一致的共形卷积完全匹配层 王 玥, 王建国, 张殿辉, 等 (441)
- 回旋行波管电子枪阴极热分析 牛婧杨, 王 丽, 罗 勇, 等 (446)

太赫兹技术

- 0.14 THz 过模表面波振荡器初步实验研究 李小泽, 王光强, 王建国, 等 (451)
波导内置硅块对高功率太赫兹脉冲的响应 王雪峰, 王建国, 王光强, 等 (455)

加速器技术

- 基于束流位置探测器的束团长度测量 王建新, 黎明, 王汉斌, 等 (461)
CSNS/RCS 中的阻抗和束流不稳定性(英) 刘瑜冬, 黄良生, 王生, 等 (470)
CYCIAE-100 轴向注入线设计及中心区束流匹配 姚红娟, 张天爵, 郑侠, 等 (471)
磁控管的电荷分布 裘家琪, 陈怀璧, 唐传祥, 等 (477)
DG 型电子加速器自校正扫描系统的研制 李中平, 曹树春, 张子民, 等 (481)

粒子束技术

- 大规模集成电路抗辐射性能无损筛选方法 周东, 郭旗, 任迪远, 等 (485)
二极管负载电缆 X 射线辐照瞬态响应数值模拟 赵墨, 程引会, 吴伟, 等 (490)
用非简并泵浦探测方法研究 C_{70} /甲苯溶液的激发态吸收动力学 张磊, 李中国, 聂仲泉, 等 (495)
混合溶液折射率对局域表面等离子体共振的影响 张杨, 彭杨, 侯静, 等 (500)
2.0 μm 波段 Sb 基多量子阱材料的制备 李占国, 尤明慧, 邓昀, 等 (505)
负折射介质中超短脉冲的反常分裂现象 张景贵, 章礼富, 赵晋琴, 等 (508)
颗粒膜厚度对表面传导电子发射的影响 盛蕾, 梁海锋, 蔡长龙 (513)
超短电子脉冲的时空转换测量方法理论研究(英) 吴建军, 袁锡明, 赵宝升, 等 (521)

脉冲功率技术

- 基于时频图像分析的核爆与雷电电磁脉冲识别 祁树锋, 李夕海, 韩绍卿, 等 (522)
光纤探针诊断 100 kA-LTD 模块开关的同步性 张元军, 陈林, 王杰, 等 (527)
线束干扰响应的精简计算模型 石立华, 张琦, 周颖慧, 等 (531)

期刊基本参数:CN 51—1311/O4 * 1989 * m * A4 * 268 * zh+en * P * ¥40.00 * 1000 * 56 * 2013-02

CONTENTS

• Overview •

Status and prospect of repetitive explosive emission cathodes
 *Ma Xun, Deng Jianjun, Jiang Ping, et al.* (275)

• High Power Laser and Optics •

Laser intensity distribution measuring method based on fiber array
 *Wu Yong, Yang Pengling, Chen Shaowu, et al.* (280)

Investigation of nonlinear and thermal effects of high power pulsed laser isolators
 *Zhao Qin, Zhang Haitao, Zheng Chao, et al.* (286)

Super-high reflectivity measurement of arbitrary spheric optical element
 *Yi Hengyu, Peng Yong, Huang Zuxin, et al.* (291)

Effects of laser propagation through atmospheric turbulence on imaging quality in Fourier telescope
 *Li Yang, Xiang Libin, Zhang Wenzi* (296)

Influence of airflow heating on aero-optic effects
 *Zhang Li, Tao Yanhui, Wang Guibing, et al.* (300)

Optimization and test of optical precision mount with large aperture
 *Guo Jianzeng, Liu Tiegen, Chi Wei, et al.* (304)

Acoustic signals induced by synchronous double-pulse lasers
 *Wang Xiaoyu, Wang Jiang'an, Zong Siguang, et al.* (309)

Gratings' rotation angle tolerance for diode lasers with external cavity formed by volume Bragg grating
 *Li Zhiyong, Tan Rongqing, Xu Cheng, et al.* (314)

Phase retrieval based on improved GS algorithm
 *Peng Jinmeng, Du Shaojun, Jiang Pengzhi* (318)

Measurement and numerical simulation of transverse modes in high power transverse-flow CO₂ laser with tube-plate electrodes
 *Xu Zhou, Cheng Cheng, Yao Jianhua* (324)

Error analysis of deformation measurement of active lap
 *Zhao Hongshen, Li Xiaojin, Zeng Zhige* (329)

Analysis algorithm of randomly phase-shifting fringes for reducing high order harmonic error
 *Sun Lili, Xu Jiancheng, Li Yong* (334)

Heat transfer characteristics of micro-fin cooling system
 *Liu Dong, Jiang Bin, Chen Fei* (340)

Design on fast athermalization for complex airborne CCD camera optical system
 *Qian Yixian, Cheng Xiaowei, Shao Jie, et al.* (344)

Resolution analysis of pre-magnification digital holographic imaging system with spherical reference wave
 *Wang Huaying, Liu Feifei, Cheng Hui, et al.* (349)

Two-photon absorption of CdTe:Mn quantum dots in aqueous solution
 *Liu Liwei, Li Yu, Hu Siyi, et al.* (354)

Distributed feedback fiber laser tuning method based on photo-thermal effect
 *Zhao Qiang, Wang Yongjie, Xu Tuanwei, et al.* (357)

Closed-loop beam quality control for MOPA solid slab laser
 *Xiang Rujian, He Zhongwu, Xu Honglai, et al.* (362)

Design of optical engine for laser-LCOS projector
 *Na Bailin, Liu Hong, Wang Weisheng* (363)

Beam quality evaluation of coherently combined laser beams
 *Jiang Maohua, Su Yi* (370)

• ICF and Laser Plasma •

KBA X-ray microscopy system
 *Zhao Lingling, Sun Delin, Hu Jiasheng* (374)

Passive measurement of radiation driven shock velocity
 *Wang Zhebin, Jiang Xiaohua, Li Sanwei, et al.* (380)

Identification of ion products produced from laser acceleration experiments using tracks on CR39
 *Wu Bo, Dong Kegong, Wu Yuchi, et al.* (384)

Re-emission technique for early time, hohlraum radiation symmetry measurements on SG II facility
 *Chen Bolun, Jiang Wei, Jing Longfei, et al.* (388)

Adhesives for assemblage of Z-pinch dynamic hohlraum load
 *Yang Bo, Zhou Xiuwen, He Wei, et al.* (393)

• High Power Microwave •

Design of a 9.4 GHz overmoded smoothwall TE₁₁-HE₁₁ converter
 *Xu Gang, Yu Chuan, Li Zhenghong, et al.* (398)

Monte Carlo simulation of multipactor discharge suppressing on grooved dielectric surface	Dong Ye, Dong Zhiwei, Yang Wenyuan, et al. (406)
Klystron double-gap output structure with double coupling apertures	Ge Meng, Wang Yong (410)
Designing microwave effect experiment based on Bayesian sequential test method	Han Feng, Lu Xicheng, Liu Yu, et al. (414)
Compact TE ₀₁ -TE ₀₂ mode converters with broadband	Wang Qiang, Zhou Haijing, Yang Chun, et al. (418)
Effect of dielectric window material on propagation characteristics of high-power microwave	Huang Huijun, Hou Qing, Zhu Xiaoxin, et al. (422)
Thermal deformation of gridded electron gun in traveling wave tubes	Ruan Jiufu, Yang Jun, Deng Guangsheng, et al. (426)
Simulation research on propagation characteristics of 170 GHz open cavity with weakly tapered cross-section	Qin Mimi, Luo Yong, Yang Shichao, et al. (430)
Transmission characteristics of microwave rectangular waveguide with transverse inductive diaphragms	Dong Yuhe, Fan Qiongxing, Liu Tianda, et al. (435)
Spatial power combining of close-packed antenna arrays of high power microwave	Deng Chaoping, Hou Deting, Zhou Dongfang, et al. (440)
Conformal convolutional perfectly matched layer with uniform stability	Wang Yue, Wang Jianguo, Zhang Dianhui, et al. (445)
Thermal analysis of electron gun cathode for gyrotron travelling wave tube	Niu Jingyang, Wang Li, Luo Yong, et al. (450)
• Terahertz Technology •	
Preliminary experimental research on overmoded surface wave oscillator with 0.14 THz	Li Xiaoze, Wang Guangqiang, Wang Jianguo, et al. (454)
Responses of silicon bar fixed in waveguide to high power terahertz pulse	Wang Xuefeng, Wang Jianguo, Wang Guangqiang, et al. (460)
• Accelerator Technology •	
Bunch length measurement based on beam position monitor	Wang Jianxin, Li Ming, Wang Hanbin, et al. (464)
Impedances and beam instability in RCS/CSNS	Liu Yudong, Huang Liangsheng, Wang Sheng, et al. (465)
Axial injection line design and central region beam matching study for CYCIAE-100	Yao Hongjuan, Zhang Tianjue, Zheng Xia, et al. (476)
Space charge distribution in magnetrons	Qiu Jiaqi, Chen Huaibi, Tang Chuanxiang, et al. (480)
Development of self-correcting scanning system for DG-type electron accelerators	Li Zhongping, Cao Shuchun, Zhang Zimin, et al. (484)
• Particle Beams Technology •	
Non-destructive screening method for radiation hardened performance of large scale integration	Zhou Dong, Guo Qi, Ren Diyuan, et al. (489)
Numerical simulation for calculating transient response of coaxial line with diode to pulsed X-ray	Zhao Mo, Cheng Yinhui, Wu Wei, et al. (494)
Study of excited-state absorption of C ₇₀ /toluene solution using time-resolved non-degenerate pump-probe system	Zhang Lei, Li Zhongguo, Nie Zhongquan, et al. (499)
Effects of refractive index of mixed solution on localized surface plasmon resonance	Zhang Yang, Peng Yang, Hou Jing, et al. (504)
Fabrication of 2.0 μm Sb-based multi-quantum-well materials	Li Zhanguo, You Minghui, Deng Yun, et al. (507)
Anomalous splitting of ultrashort pulse in metamaterials	Zhang Jinggui, Zhang Lifu, Zhao Jinqin, et al. (512)
Influence of granular film thickness on surface-conduction electron emission	Sheng Lei, Liang Haifeng, Cai Changlong (516)
Theoretical research on time-space conversion method for measuring ultra-short electron pulse width	Wu Jianjun, Yuan Ximing, Zhao Baosheng, et al. (517)
• Pulsed Power Technology •	
Discrimination of nuclear explosion and lightning electromagnetic pulse using time-frequency image analysis	Qi Shufeng, Li Xihai, Han Shaoqing, et al. (526)
Discharge synchronization of 10 switches in 100 kA-LTD module diagnosed by optic fiber array	Zhang Yuanjun, Chen Lin, Wang Jie, et al. (530)
Reduced model for disturbance analysis of cable bundles	Shi Lihua, Zhang Qi, Zhou Yinghui, et al. (536)