

红外与激光工程

HONGWAI YU JIGUANG GONGCHENG

月刊 1972 年创刊
2011年第40卷第4期
(总第198期)

主管单位 中国航天科工集团公司
主办单位 中国航天科工集团公司第三研究院第八三五八研究所
编辑出版 《红外与激光工程》编辑部
印刷单位 天津中铁物资印业有限公司
国内发行 天津市邮政局
订购处 全国各地邮局
邮发代号 6-133
国外发行 中国国际图书贸易总公司
(北京399信箱)
国外代号 BM 1766
主编 崔玉平
执行主编 卢进
副主编 张天序 陈德应 史泽林
陈钱 宋瑛林
常务副主编 赵雪燕
执行编辑 王红琨
责任编辑 付宁 黄霏
排版 徐佳
通信地址 天津市南开区225信箱
32分箱
邮政编码 300192
联系电话 022-23666400
022-58625208
传真 022-23666400
电子邮箱 irla@vip.sina.com
网址 <http://www.irla.cn>
刊号 ISSN 1007-2276
CN 12-1261/TN
广告经营许可证号 1201044000019
国内定价 25元
刊名题词 张爱萍 将军
出版日期 2011年4月25日

目 次

◆红外技术及应用◆

- 固体微粒遮蔽的红外突防措施分析 韩玉阁,靳友林,谭洪,宣益民(581)
舰载光电跟踪系统红外自动捕获技术 乔永明,郝伟,田广元,韩俊锋(585)
大气层外弹道式目标群红外成像建模与仿真
..... 刘涛,杨德贵,姜卫东,黎湘(589)
卫星姿控推进器尾焰红外辐射的数值模拟 金伟,吕相银(595)
利用光化学模型的氧红外大气波段体发射率模拟 汪自军,陈圣波(600)
长波红外高光谱非均匀性校正及光谱特征提取
..... 林颖,徐卫明,袁立银,王建宇(605)
中波2048元长线列碲镉汞焦平面探测组件
..... 王小坤,曾智江,朱三根,李言谨,胡晓宁,何力,丁瑞军(611)
新型硫系玻璃在低成本热成像系统设计中的应用
..... 史广维,张新,王灵杰,何锋贤,张建萍(615)

◆激光与光电子技术应用◆

- 机载激光成像技术新进展 羊毅,丁全心,张春风(620)
激光威胁源方向识别技术
..... 黄成功,吴军辉,姚梅,郭豪,赵琳峰,张碧会,贺克兰,张雷(626)
利用亚像素位移估计提高激光散斑图像无失真压缩效率(英文) 李东晖(631)
室内实测数据的逆合成孔径激光雷达成像
..... 郭亮,邢孟道,曾晓东,唐禹(637)
多普勒雷达系统中声光调制器的频移误差
..... 钱黎明,赵卫疆,任德明,曲彦臣,张合勇(643)
基于光子晶体的远红外与激光兼容伪装材料
..... 高永芳,时家明,赵大鹏(647)
高精度激光陀螺测角仪中的指零仪 金润,黄水花(651)
激光强化NiAl/纳米Al₂O₃复合镀层的显微组织与显微硬度
..... 丁庆明,姚建华,孔凡志(655)
铝合金激光点焊工艺特性研究 陶汪,陈彦宾,李俐群,吴林(659)

◆先进光学◆

- 超音速飞行器光学窗口气动压力载荷分析
..... 罗传伟,常伟军,强华,焦明印(664)
五通道红外全景光学系统设计 刘钩,李璟,高明(668)
相位拼接闭合条纹干涉图处理技术 李博,陈磊,边疆,王军(674)
减小光强不均对CCD非均匀性校正的影响
..... 苏成志,陈栋,曹国华,徐洪吉(680)
喷射距离对射流抛光去除函数的影响 施春燕,袁家虎,伍凡,万勇建(685)

期刊基本参数:CN12-1261/TN*1972*b*A4*196*zh+en*P* ¥25.00*1150*40*2011-04

《红外与激光工程》系中国宇航学会光电技术专业委员会会刊,由中国航天科工集团公司主管,创刊于1972年,是国家科委和国家新闻出版署批准的国内外公开发行的国家级学术刊物。中文核心期刊。

《红外与激光工程》是中国航天界光电子技术领域内学术性与工程应用性集于一体的综合性刊物,主要刊登国内红外与激光技术方面的学术论文和工程研究报告,集中反映了中国光电技术的工程应用水平。

期刊的编委会由100余人组成,其中包括王大珩、母国光、金国藩、张履谦、周立伟、姚建铨等院士,及其他国内光电领域著名的专家、学者,他们来自航天、航空、兵器、电子、机械系统及中国科学院,国内著名大学,有他们审稿把关,期刊质量得到提高。

《红外与激光工程》常设专栏包括红外技术及应用,激光与光电子技术应用,光电对抗,先进光学,信息处理等。

◆光电器件与材料◆

- 紫外日盲焦平面探测器成像处理系统研制……朱杰,麻芃,白云,刘健(690)
阱宽和垒厚对InGaN/GaN多量子阱结构光电特性的影响……路慧敏,陈根祥(696)
超材料金属板透视装置设计……杨成福,黄铭,杨晶晶,赵征鹏,彭金辉(701)
ZnS:Eu/ZnS核/壳结构量子点自发辐射性能研究……………
……………张晓松,李美成,李岚,黄青松(705)
Hg₃In₂Te₆晶体欧姆接触及电学特性……张小雷,孙维国,张亮,张向锋,丁嘉欣(709)

◆光电测量◆

- 天空光辐射亮度测量系统定标及数据分析……………
……………刘伟峰,赵国民,谢永杰,李志朝,赵乐至(713)
采用光学相关的高精度亚像元像移测量新方法……………
……………易红伟,李英才,汶德胜,李旭阳,马臻(718)
采用相关辨识的光纤陀螺动态特性测试方法……………
……………李敏,宋凝芳,张春熹,金靖,潘雄(723)
光纤阵列中纤芯间距的检测系统……陈立国,朱吉锋,王明月(728)

◆光通信与光传感◆

- 星地激光通信下行链路的最大天顶角分析……………
……………李永亮,傅忠谦,徐睿,林日钊,王建宇(733)
结构简单的双信道偏振位移键控光通信系统……………
……………张超,王陆唐,方捻,丁福新(739)
激光陀螺光学抖动加噪原理及实验……黄林林,谢元平(743)
基于灰色时序模型的激光陀螺漂移数据滤波……………
……………魏国,汤建勋,王宇,龙兴武(747)

◆信息处理◆

- 三角形内切圆的星图识别算法……陆敬辉,王宏力,孙渊,崔祥祥(752)
移动背景下的运动目标跟踪……梅跃松,于剑桥,陈曦(757)
基于DLBP特征的FLIR图像匹配方法……………
……………刘婧,孙继银,陈珊,朱俊林,杨威(762)
采用改进Snake模型的虹膜定位方法……张志佳,张海峰,周纯冰,桑海峰(767)
采用聚焦度量的散焦模糊图像参数鉴别及复原……吴振宇,杜少军,姚洪利(772)

INFRARED AND LASER ENGINEERING

Monthly Started in 1972

Vol. 40 No. 4 2011 (Series No. 198)

Competent Authorities China Aerospace
Science and Industry Corporation
(CASIC)

Sponsor 8358th Institute of 3rd Academy,
China Aerospace Science and
Industry Corporation

Edited and Published by Editorial Board
of Journal of Infrared and Laser Engin-
eering

Printed by Tianjin Zhongtie Materials
Print CO., LTD.

Domestic Distributor Tianjin Post Office
Order Office All Local Post Offices in
China (6-133)

Overseas Distributor China International
Book Trading Corporation (BM 1766)

Editor in Chief Cui Yuping

Executive Editor in Chief Lu Jin

Deputy Editor in Chief

Zhang Tianxu Chen Deying
Shi Zelin Chen Qian
Song Yinglin

Executive Deputy Editor in Chief

Zhao Xueyan

Executive Editor Wang Hongkun

Editor Fu Ning Huang Fei

Typesetter Xu Jia

Address P. O. Box 225-32 Tianjin,
China (300192)

Tel 86-22-23666400 86-22-58625208

Fax 86-22-23666400

Email irla@vip. sina. com

Net Address <http://www.irla.cn>

Price ¥25

Published Data 25 Apr. 2011

Contents

◆ Infrared technology and application ◆

- Analysis of infrared penetration method based on the shield with solid particles Han Yuge, Jin Youlin, Tan Hong, Xuan Yimin(581)
Infrared automatic capture technology on shipborne photoelectric tracking system Qiao Yongming, Hao Wei, Tian Guangyuan, Han Junfeng(585)
IR imaging modeling and simulation of ballistic target group outside atmosphere Liu Tao, Yang Degui, Jiang Weidong, Li Xiang(589)
Numerical simulation of the infrared radiation of satellite attitude thruster plume Jin Wei, Lv Xiangyin(595)
Simulation on volume emission rate at OIRA band based on photochemical model Wang Zijun, Chen Shengbo(600)
Nonuniformity correction for LW infrared hyperspectral and its spectral feature abstraction Lin Ying, Xu Weiming, Yuan Liyin, Wang Jianyu(605)
Dewar for medium wave 2048 pixel long linear HgCdTe IRFPA Wang Xiaokun, Zeng Zhijiang, Zhu Sangen, Li Yanjin, Hu Xiaoning, He Li, Ding Ruijun(611)
Application of the new chalcogenide glass in design of low cost thermal imaging systems Shi Guangwei, Zhang Xin, Wang Lingjie, He Fengyun, Zhang Jianping(615)

◆ Laser and optoelectronic technology application ◆

- New advances in airborne laser imaging techniques Yang Yi, Ding Quanxin, Zhang Chunfeng(620)
Laser threat orientation identification technology Huang Chenggong, Wu Junhui, Yao Mei, Guo Hao, Zhao Linfeng, Zhang Bihui, He Kelan, Zhang Lei(626)
Improved compression efficiency of lossless compression of laser speckle images by subpixel-accuracy displacement estimation Li Donghui (631)
Inverse synthetic aperture lidar imaging of indoor real data Guo Liang, Xing Mengdao, Zeng Xiaodong, Tang Yu(637)
Frequency shift error of AOM in Doppler lidar system Qian Liming, Zhao Weijiang, Ren Deming, Qu Yanchen, Zhang Heyong(643)
Far infrared and laser band compatible camouflage material based on photonic crystals Gao Yongfang, Shi Jiaming, Zhao Dapeng(647)
Null-indicator in high precision angular measurements with a RLG Jin Xun, Huang Shuihua(651)
Microstructure and microhardness of NiAl/nano Al₂O₃ electroless composite plated coating by laser hardening Ding Qingming, Yao Jianhua, Kong Fanzhi(655)
Process characteristic of laser spot welding for aluminum alloy Tao Wang, Chen Yanbin, Li Liqun, Wu Lin(659)

◆ Advanced optics ◆

- Analysis of aerodynamic pressure loading for supersonic aircraft optical window Luo Chuanwei, Chang Weijun, Qiang Hua, Jiao Mingyin(664)

Design of five-channel infrared panoramic optical system	Liu Jun, Li Jing, Gao Ming(668)
Processing technology for closed fringe interferogram using phase stitching	Li Bo, Chen Lei, Bian Jiang, Wang Jun(674)
Reducing the influence of non-uniformity of luminous intensity on the inhomogeneity correction for CCD	Su Chengzhi, Chen Dong, Cao Guohua, Xu Hongji(680)
Influence of standoff distance on material removal function in fluid jet polishing	Shi Chunyan, Yuan Jiahua, Wu Fan, Wan Yongjian(685)

◆ Photoelectrical device and materials ◆

Design of image processing system for UV solar blind focal plane detector	Zhu Jie, Ma Peng, Bai Yun, Liu Jian(690)
Influence of well width and barrier thickness on optoelectronic properties of InGaN/GaN multiple quantum well	Lu Huimin, Chen Genxiang(696)
Design of perspective device of metallic plate based on metamaterials	Yang Chengfu, Huang Ming, Yang Jingjing, Zhao Zhengpeng, Peng Jinhui(701)
Performance of spontaneous emission of ZnS:Eu/ZnS core/shell quantum dots	Zhang Xiaosong, Li Meicheng, Li Lan, Huang Qingsong(705)
Ohmic contact and electrical property in Hg _x In ₂ Te ₆ crystals	Zhang Xiaolei, Sun Weiguo, Zhang Liang, Zhang Xiangfeng, Ding Jiaxin(709)

◆ Photoelectrical measurement ◆

Calibration and data analysis of sky-light radiation luminance measurement system	Liu Weifeng, Zhao Guomin, Xie Yongjie, Li Zhichao, Zhao Lezhi(713)
New measurement method of the sub-pixel image motion based on optical correlator	Yi Hongwei, Li Yingcai, Wen Desheng, Li Xuyang, Ma Zhen(718)
Dynamic characteristics test of fiber optic gyroscope based on cross-correlation identification	Li Min, Song Ningfang, Zhang Chunxi, Jin Jing, Pan Xiong(723)
Detection system for distances between the fiber centers in fiber array	Chen Liguo, Zhu Jifeng, Wang Mingyue(728)

◆ Optical communication and optical sensing ◆

Analysis of the maximal zenith angle of satellite-to-ground laser communication downlinks	Li Yongliang, Fu Zhongqian, Xu Rui, Lin Rizhao, Wang Jianyu(733)
Simple structure dual-channel PolSK optical communication system	Zhang Chao, Wang Lutang, Fang Nian, Ding Fuxin(739)
Principle and experiment of injecting optical dithered noise in ring laser gyro	Huang Linlin, Xie Yuanping(743)
Filtering of RLG's drift data based on grey-time series model	Wei Guo, Tang Jianxun, Wang Yu, Long Xingwu(747)

◆ Information processing ◆

Star pattern identification algorithm by triangle incircle	Lu Jinghui, Wang Hongli, Sun Yuan, Cui Xiangxiang(752)
Moving object tracking in the moving background	Mei Yuesong, Yu Jianqiao, Chen Xi(757)
FLIR image matching method based on DLBP feature	Liu Jing, Sun Jiayin, Chen Shan, Zhu Junlin, Yang Wei(762)
Iris location method based on improved Snake	Zhang Zhijia, Zhang Haifeng, Zhou Chunbing, Sang Haifeng(767)
Restoration and identification of defocus blurred image based on in-focus degree	Wu Zhenyu, Du Shaojun, Yao Hongli(772)