

目 次

❖ 特约专栏-微纳光学结构高温传感技术 ❖

- 蓝宝石光纤光栅高温传感器研究进展与发展趋势 (特邀) 何俊, 徐锡镇, 贺佳, 等 20220700
发动机进气总温总压光纤复合探针设计 (特邀) 刘杨杨, 贾平岗, 袁世辉, 等 20220685
基于 BOTDA 的分布式光纤高温传感研究 (特邀) 徐鹏柏, 王晓龙, 温坤华, 等 20220549
基于多 CCD 同步耦合的动态燃烧场三维辐射测温 (特邀) 段鹏程, 程博, 管今哥, 等 20220352
玻璃波导有效折射率的原位测量 (特邀) 李小艳, 李义春, 李中天, 等 20220491
基于聚合物微球腔的高灵敏温度传感器 (特邀) 柏森鑫, 金俪阳, 李嘉丽, 等 20220535

❖ 红外技术及应用 ❖

- 高超声速飞行器热喷高温燃气红外辐射特性数值模拟 傅杨奥骁, 江涛, 刘庆宗, 等 20220023
采用 CFD 方法对液氮冷却结构进行流体和热分析 孙权, 莫德锋, 刘大福, 等 20220085
地面对标红外建模缺失参数反演与模型验证方法 隋钧铖, 任登凤, 韩玉阁 20220033

❖ 激光器与激光光学 ❖

- 星载单光子激光雷达浅水测深技术研究进展和展望 李雨佳, 周晓青, 李国元, 等 20220003
缓冲气体对循环流动铯蒸汽激光器气体温度分布和输出特性的影响 万浩华, 何洋, 季艳慧, 等 20211105
基于 MgO: PPLN 的高重频、高峰值功率中红外光参量振荡器 高宝光, 孟冬冬, 乔占朵, 等 20220069
应用于 EAST TS 诊断的高能高频 Nd:YAG 激光器设计 刘玮, 臧庆, 任梦芳, 等 20220002
基于时间相关单光子计数技术的测速研究 杨杰, 王才喜, 乔凯, 等 20220565
采用 GaN HEMT 的可调窄脉冲激光器驱动电路 杨仕轩, 赵柏秦, 王立晶, 等 20220036
空间非合作目标半物理仿真地面验证系统 李荣华, 张建禹, 郑宇锋, 等 20211115
激光辐照条件下光学相机像质评价方法研究 梁晓琳, 周松青, 周玲, 等 20211120

❖ 光电测量 ❖

- 脉冲/连续高功率激光光斑分布阵列探测器 王振宝, 冯刚, 吴勇, 等 20220064

- 高精度 X 射线柱面弯晶检测方法 韦敏习, 尚万里, 侯立飞, 等 20211121
基于加权加速正交迭代算法的相机位姿估计 熊 芝, 许 航, 张刘港, 等 20220030
基于 LCTF 成像仪的光谱反射率测量研究 宋 宏, 张杨帆, 杨 萍, 等 20220019

❖ 光通信与光传感 ❖

- 光子晶体双波长电光调制和模分复用集成器件 林佳森, 项 彤, 陈鹤鸣, 等 20211107
利用变形镜抑制光纤模态噪声 王嘉琦, 许 良, 常 亮 20210763
基于边缘云计算的光纤无线网络优化设计 施凌鹏, 冯天波, 卢士达, 等 20210938
基于光纤传感的工业生产线智能装配系统 王春霞, 刘云朋 20210695
面向敏感环境的反射式光纤传感防盗系统设计 范珍珍 20220068

❖ 光学设计 ❖

- 小型高分辨率空间相机光学系统低误差敏感度设计 秦子长, 任成明, 戚允升, 等 20220365
离轴反射式头戴显示光学系统的自由曲面设计方法 芮丛珊, 曾春梅, 冯志强, 等 20211119
立式三反离轴相机光机结构设计 李庆林, 蔡媛媛, 张志飞, 等 20220303
航空光电遥感器高精密紧凑型调焦机构的设计 张洪伟, 陈卫宁, 曲 锐, 等 20211122

❖ 光学器件 ❖

- PbS 量子点同质 P-N 结光电探测器 许云飞, 刘子宁, 王 鹏 20220053

❖ 光学制造 ❖

- 快刀伺服加工多通道滤光片阵列的间隔层模具 李世杰, 杨 陈, 黄岳田, 等 20220048

❖ 光学成像技术 ❖

- 航天 TDI 推扫式光学遥感器机动成像质量 汪巧萍, 齐文雯, 谭 伟 20220094
基于 MPPC 阵列的三维单光子成像技术研究 何巧莹, 黄林海, 顾乃庭 20210989
光学相干层析成像技术在器官疾病诊断上的应用(英文) 苏 李, 宋凯文, 吕沛桐, 等 20210803

◆ 图像处理 ◆

- 融合检测技术的孪生网络跟踪算法综述 张津浦, 王岳环 20220042

复杂场景下基于自适应特征融合的目标跟踪算法 李 博, 张心宇 20220013

InGaAs 近红外人脸图像检测超轻量算法研究 苏晏园, 范广宇, 龚海梅, 等 20220078

结合多尺度特征融合和多输入多输出编-解码器的去模糊算法 赵 倩, 周冬明, 杨 浩, 等 20220018

基于二维随机投影特征典型相关分析融合的 SAR ATR 方法 李正伟, 黄孝斌, 胡 尧 20220029

◆ 简讯 ◆

- 后向泵浦长锥形掺镱光纤实现 6 kW 激光输出 叶云, 奚小明, 杨保来, 等 20220596

编 辑：付 宁 吴 迪 宣 传 部：刘兴旺 022-58168885
翟远征 王红琨 广 告 部：刘燕荣 022-58168884
刘燕荣 许文颖 发 行 部：吴 迪 022-58168520
刘兴旺

Contents

❖ Special issue-High-temperature sensing technology based on micro/nano optical structure ❖

Research progress and development tendency of sapphire fiber Bragg grating-based high-temperature sensors (<i>invited</i>) .....	..... He Jun, Xu Xizhen, He Jia, et al. 20220700
Design of a fiber-optic composite probe for engine intake total temperature and pressure (<i>invited</i>) .....	..... Liu Yangyang, Jia Pinggang, Yuan Shihui, et al. 20220685
Distributed fiber high-temperature sensing based on BOTDA (<i>invited</i>) .....	..... Xu Pengbai, Wang Xiaolong, Wen Kunhua, et al. 20220549
Three-dimensional radiation thermometry for dynamic combustion field based on multi-CCD synchronous coupling (<i>invited</i>) .....	..... Duan Pengcheng, Cheng Bo, Guan Jinge, et al. 20220352
In-situ measurement of effective refractive index of glass waveguides (<i>invited</i>) .....	..... Li Xiaoyan, Li Yichun, Li Zhongtian, et al. 20220491
Highly sensitive temperature sensor based on polymer spherical microcavity (<i>invited</i>) .....	..... Bai Miaoxin, Jin Liyang, Li Jiali, et al. 20220535

❖ Infrared technology and application ❖

Numerical simulation on radiation effect of hypersonic vehicle's hot gas jet .....	..... Fu Yang'aoxiao, Jiang Tao, Liu Qingzong, et al. 20220023
Flow and heat analysis of liquid nitrogen cooling structure by CFD method .....	..... Sun Quan, Mo Defeng, Liu Dafu, et al. 20220085
Inversion and model validation method of missing parameters in infrared modeling of ground targets .....	..... Sui Juncheng, Ren Dengfeng, Han Yuge 20220033

❖ Lasers & Laser optics ❖

Progress and prospect of space-borne photon-counting lidar shallow water bathymetry technology .....	..... Li Yujia, Zhou Xiaoqing, Li Guoyuan, et al. 20220003
Effect of buffer gas on gas temperature distribution and output characteristics of flowing-gas circulation cesium vapor laser .....	..... Wan Haohua, He Yang, Ji Yanhui, et al. 20211105
High repetition rate, high peak power mid-infrared optical parametric oscillator based on MgO: PPLN .....	..... Gao Baoguang, Meng Dongdong, Qiao Zhanduo, et al. 20220069
Design of high-energy and high-frequency Nd: YAG laser used in EAST TS diagnostic .....	..... Liu Wei, Zang Qing, Ren Mengfang, et al. 20220002
Research on velocity measurement based on time-correlated single photon counting .....	..... Yang Jie, Wang Caixi, Qiao Kai, et al. 20220565

Adjustable narrow pulse laser drive circuit using GaN HEMT	Yang Shixuan, Zhao Baiqin, Wang Lijing, et al.	20220036
Semi-physical simulation ground verification system for space non-cooperative targets	Li Ronghua, Zhang Jianyu, Zheng Yufeng, et al.	20211115
Research on optical camera imaging quality evaluation method under the condition of laser irradiation	Liang Xiaolin, Zhou Songqing, Zhou Ling, et al.	20211120

❖ Photoelectric measurement ❖

Detector array for measuring spot distribution of high power continuous and pulsed laser	Wang Zhenbao, Feng Gang, Wu Yong, et al.	20220064
High accuracy inspection of cylindrical curved crystal with X-ray source	Wei Minxi, Shang Wanli, Hou Lifei, et al.	20211121
Pose estimation of camera based on weighted accelerated orthogonal iterative algorithm	Xiong Zhi, Xu Hang, Zhang Liugang, et al.	20220030
Research on spectral reflectance measurement based on LCTF imager	Song Hong, Zhang Yangfan, Yang Ping, et al.	20220019

❖ Optical communication and sensing ❖

Integrated device of dual-wavelength electro-optic modulating and mode-division multiplexing based on photonic crystal	Lin Jiamiao, Xiang Tong, Chen Heming, et al.	20211107
Suppression of fiber modal noise by using deformable mirror	Wang Jiaqi, Xu Liang, Chang Liang	20210763
Optimal design of optical fiber wireless network based on edge cloud computing	Shi Lingpeng, Feng Tianbo, Lu Shida, et al.	20210938
Intelligent assembly system of industrial production line based on optical fiber sensing	Wang Chunxia, Liu Yunpeng	20210695
Design of reflective optical fiber sensing anti-theft system for sensitive environment	Fan Zhenzhen	20220068

❖ Optical design ❖

Low error-sensitive design of small-sized high-resolution space camera optical system	Qin Zichang, Ren Chengming, Qi Yunsheng, et al.	20220365
Design method of freeform surface for off-axis reflective head-mounted display optical system	Rui Congshan, Zeng Chunmei, Feng Zhiqiang, et al.	20211119
Opto-mechanical structure design of vertical off-axis TMA system camera	Li Qinglin, Cai Yuanyuan, Zhang Zhifei, et al.	20220303
Design of high precision and compact focusing mechanism for aerial photoelectric remote sensor	Zhang Hongwei, Chen Weining, Qu Rui, et al.	20211122

❖ Optical devices ❖

PbS quantum dot P-N homojunction photodetector	Xu Yunfei, Liu Zining, Wang Peng	20220053
--	----------------------------------	----------

❖ Optical fabrication ❖

Manufacturing the spacer-layer mold of multi-channel filter arrays using Fast Tool Servo
..... Li Shijie, Yang Chen, Huang Yuetian, et al. 20220048

❖ Optical imaging ❖

Maneuvering imaging quality of space TDI push scan optical remote sensor Wang Qiaoping, Qi Wenwen, Tan Wei 20220094
3D single photon imaging technology research based on MPPC array He Qiaoying, Huang Linhai, Gu Naiting 20210989
Optical coherence tomography technology for diagnosis of diseases in organs ... Su Li, Song Kaiwen, Lv Peitong, et al. 20210803

❖ Image processing ❖

A survey of siamese networks tracking algorithm integrating detection technology Zhang Jinpu, Wang Yuehuan 20220042
Target tracking algorithm based on adaptive feature fusion in complex scenes Li Bo, Zhang Xinyu 20220013
Research of ultra-light InGaAs NIR face detection algorithm Su Yanyuan, Fan Guangyu, Gong Haimei, et al. 20220078
Image deblurring via multi-scale feature fusion and multi-input multi-output encoder-decoder
..... Zhao Qian, Zhou Dongming, Yang Hao, et al. 20220018
SAR ATR method based on canonical correlations analysis of features extracted by 2D random projection
..... Li Zhengwei, Huang Xiaobin, Hu Yao 20220029