

目 次

❖ 专家报告 ❖

640×512 规模碲化汞量子点中波红外焦平面阵列 (特邀) 谭伊玫, 张 硕, 罗宇宁, 等 20230377

❖ 特约专栏—自由曲面光学系统设计技术 ❖

基于方域正交多项式自由曲面的成像系统设计方法 (特邀) 周丽军, 杨 通, 程德文, 等 20230317

大型自由曲面离轴三反光学系统降敏设计 (特邀) 任成明, 孟庆宇, 秦子长 20230287

矢量像差理论在成像系统像差补偿中的应用 (特邀) 解博夫, 张 帅, 李浩然, 等 20230343

制冷型大面阵自由曲面离轴三反光学系统设计 (特邀) 钱 壮, 莫 言, 樊润东, 等 20230339

自由曲面离轴四反全铝光机红外探测系统 (特邀) 高 荣, 毛祥龙, 李锦鹏, 等 20230338

应用自由曲面的紧凑型长焦手机镜头设计 (特邀) 许宁晏, 高志山, 陈 露, 等 20230322

面向光束整形的自由曲面衍射光学设计方法 (特邀) 廖清明, 冯泽心 20230430

基于正交双向迭代的自由曲面激光光束整形设计 (特邀) 叶井飞, 朱 钰, 顾悠扬, 等 20230299

非垂轴观测平面上自由曲面光束强度与波前调控 (特邀) 沈凡琪, 陈煜钦, 杨 琳, 等 20230323

激光光源汽车前照灯自由曲面反射器设计 蒋露松, 陈 宇, 海小华, 等 20230321

增强现实显示光学引擎中光波导耦出超表面设计 (特邀) 陈恩果, 陈慷慷, 范祯桂, 等 20230342

❖ 综述 ❖

我国高功率光纤激光技术学科方向的历程、现状、挑战与建议 周 朴 20230071

❖ 红外技术及应用 ❖

类 B-2 型飞行器红外辐射特性数值模拟 吕 蓉, 牛青林, 董士奎 20220810

用于冷光学长波红外杜瓦组件杂散光分析与抑制 朱海勇, 陈俊林, 曾智江, 等 20220823

海洋环境下低特征水面飞行器中长波探测研究 宋敏敏, 吕 弢, 桑学仪, 等 20220807

❖ 激光器与激光光学 ❖

LD 泵浦 $\text{Er}^{3+}/\text{Yb}^{3+}:\text{Lu}_2\text{Si}_2\text{O}_7$ 晶体 kHz 微型激光器 韩 雪, 吕 游, 彭嘉宁, 等 20220811

抑制频率互调效应的阵列式光镊技术研究 王世珍, 陈嘉怡, 李东豪, 等 20230128

空间三轴激光陀螺放电区微晶玻璃 Li^+ 迁移规律研究 田爽辰, 李玉娇, 钟钧宇, 等 20220819

基于双法布里-珀罗干涉仪多纵模米散射多普勒激光雷达技术 沈法华, 徐菁苑, 范安冬, 等 20220762

激光光斑尺寸对激光焊接熔池、匙孔行为的影响 彭 进, 许红巧, 王永彪, 等 20220130

❖ 光电测量 ❖

- 星载黑体高精度集成化温控系统设计 黑花阁, 李潇雁, 李璐芳, 等 20220852
- 2.16 m 望远镜偏振光度计 邱 鹏, 王国聪, 张晓明, 等 20220830
- 彩色高反光物体表面三维形貌测量技术 朱 坡, 张宗华, 高 楠, 等 20220761
- 基于光学偏振控制的散粒噪声极限微振动光学测量方法 伍凯凯, 谢博娅, 陈 琳, 等 20220872

❖ 光学设计 ❖

- 大视场空间相机像旋补偿机构及其优化设计 刘树迪, 田海英, 邵建兵 20220878
- 太阳望远镜低时空频率波前像差校正技术 赵思旻, 顾乃庭, 黄林海, 等 20220887

❖ 光学制造 ❖

- 大口径离轴非球面离心力误差修正的车削方法 宋 鹏, 白 杨, 杨 超, 等 20220888
- 碳化钨合金磨削仿真与工艺优化方法 殷 博, 薛常喜, 李 闯 20220898

❖ 材料与薄膜 ❖

- 液相外延碲镉汞薄膜缺陷综述 起文斌, 丛树仁, 宋林伟, 等 20220804

❖ 全息 ❖

- 基于轨道角动量全息和频移的大容量光学信息加密技术 郑 伟, 张 迪, 原 昊, 等 20230313

❖ 图像处理 ❖

- 基于 GCI-CycleGAN 风格迁移的跨模态地理定位方法 李清格, 杨小冈, 卢瑞涛, 等 20220875



编 辑: 付 宁 吴 迪
 翟远征 王红琨
 刘燕荣 许文颖
 刘兴旺

宣 传 部: 刘兴旺 022-58168885
 广 告 部: 刘燕荣 022-58168884
 发 行 部: 吴 迪 022-58168520

Contents

❖ Invited paper ❖

640×512 HgTe colloidal quantum-dot mid-wave infrared focal plane array (*invited*)
..... Tan Yimei, Zhang Shuo, Luo Yuning, et al. 20230377

❖ Special issue—The technology of freeform optical system design ❖

Design method of imaging systems using square-domain orthogonal polynomials freeform surface (*invited*)
..... Zhou Lijun, Yang Tong, Cheng Dewen, et al. 20230317

Desensitization design of large freeform off-axis three-mirror optical system (*invited*)
..... Ren Chengming, Meng Qingyu, Qin Zichang 20230287

Application of nodal aberration theory in aberration compensation of the imaging system (*invited*)
..... Xie Bofu, Zhang Shuai, Li Haoran, et al. 20230343

Design of cooled freeform off-axis three-mirror system with large rectangular field (*invited*)
..... Qian Zhuang, Mo Yan, Fan Rundong, et al. 20230339

Freeform off-axis four-mirror all-aluminum infrared detection system (*invited*)
..... Gao Rong, Mao Xianglong, Li Jinpeng, et al. 20230338

Design of compact telephoto mobile phone lens based on freeform surface (*invited*)
..... Xu Ningyan, Gao Zhishan, Chen Lu, et al. 20230322

Design methods of freeform surface diffractive optics for beam shaping (*invited*) Liao Qingming, Feng Zexin 20230430

Freeform surface design of laser beam shaping by iteration in two orthogonal directions (*invited*)
..... Ye Jingfei, Zhu Yu, Gu Youyang, et al. 20230299

Simultaneous modulation of beam intensity and wavefront with freeform surfaces on the off-axis target plane (*invited*)
..... Shen Fanqi, Chen Yuqin, Yang Lin, et al. 20230323

Design of freeform reflector for laser light source automotive headlight Jiang Lusong, Chen Yu, Hai Xiaohua, et al. 20230321

Design of waveguide decoupled metasurface for augmented reality display optical engine (*invited*)
..... Chen Enguo, Chen Kangkang, Fan Zhengui, et al. 20230342

❖ Review ❖

Review on the discipline of high power fiber laser in China Zhou Pu 20230071

❖ Infrared technology and application ❖

Numerical simulation of infrared radiation characteristics of the B-2-like aircraft
..... Lv Rong, Niu Qinglin, Dong Shikui 20220810

Stray light analysis and suppression of long-wave infrared Dewar component for cold optics
..... Zhu Haiyong, Chen Junlin, Zeng Zhijiang, et al. 20220823

Research on long wave detection of low feature surface aircraft in sea environment
..... Song Minmin, Lv Tao, Sang Xueyi, et al. 20220807

❖ **Lasers & Laser optics** ❖

- Er³⁺/Yb³⁺: Lu₂Si₂O₇ crystal microchip laser pumped by LD at kHz Han Xue, Lv You, Peng Jianing, et al. 20220811
- Optical tweezer array with suppressed frequency intermodulation Wang Shizhen, Chen Jiayi, Li Donghao, et al. 20230128
- Study on Li ion migration of glass-ceramic in discharge area of space triaxial laser gyroscope
..... Tian Shuangchen, Li Yujiao, Zhong Junyu, et al. 20220819
- Multi-longitudinal-mode Mie scattering Doppler lidar technology based on dual Fabry-Perot interferometer
..... Shen Fahua, Xu Jingyuan, Fan Andong, et al. 20220762
- Effect of laser spot size on the behavior of molten pool and keyhole in laser welding
..... Peng Jin, Xu Hongqiao, Wang Yongbiao, et al. 20220130

❖ **Photoelectric measurement** ❖

- Design of high-precision integrated temperature control system of spaceborne blackbody
..... Hei Huage, Li Xiaoyan, Li Lufang, et al. 20220852
- The 2.16-m telescope polarimeter Qiu Peng, Wang Guocong, Zhang Xiaoming, et al. 20220830
- Three-dimensional surface topography measurement technology of color highly reflective objects
..... Zhu Po, Zhang Zonghua, Gao Nan, et al. 20220761
- Optical measurement method of shot noise limit micro-vibration based on optical polarization control
..... Wu Kaikai, Xie Boya, Chen Lin, et al. 20220872

❖ **Optical design** ❖

- Image rotation compensation mechanism of large field of view space camera and its optimization design
..... Liu Shudi, Tian Haiying, Shao Jianbing 20220878
- Low spatio-temporal frequency wavefront aberration correction technology of solar telescope
..... Zhao Simin, Gu Naiting, Huang Linhai, et al. 20220887

❖ **Optical fabrication** ❖

- Turning method for correcting centrifugal force error of large-diameter off-axis aspheric surface
..... Song Peng, Bai Yang, Yang Chao, et al. 20220888
- Grinding simulation and process optimization method of tungsten carbide alloy Yin Bo, Xue Changxi, Li Chuang 20220898

❖ **Materials & Thin films** ❖

- Review of defects of HgCdTe films grown by LPE Qi Wenbin, Cong Shuren, Song Linwei, et al. 20220804

❖ **Holography** ❖

- High capacity optical information encryption technology based on OAM holography and frequency shift
..... Zheng Wei, Zhang Di, Yuan Hao, et al. 20230313

❖ **Image processing** ❖

- Cross-modal geo-localization method based on GCI-CycleGAN style translation
..... Li Qingge, Yang Xiaogang, Lu Ruitao, et al. 20220875