

## 目 次

<b>·综述·</b>	
“2013 中国光学重要成果”入选成果介绍 .....	120000
蓬勃发展的高重复频率固体锁模激光器 .....	刘京徽 田金荣 胡梦婷等 120001
星地激光通信中克服大气湍流效应研究进展 .....	马小平 孙建锋 侯培培等 120002
硫系基质光波导的非线性应用研究进展 .....	张振营 陈 芬 聂秋华等 120003
国内尾流光学检测研究进展 .....	王 贇 刘继芳 鲁振中等 120004
全光纤电流传感器温度补偿研究进展 .....	王 志 初凤红 吴建平 120005
光学相干弹性成像研究现状与展望 .....	沈熠辉 李志芳 李 晖 120006
T 矩阵法在光镊中的应用及进展 .....	王 娟 任洪亮 周业鹏 120007
靶后鞘层机制加速离子的研究进展 .....	王凤超 120008
<b>·大气光学与海洋光学·</b>	
基于雾滴谱分布的雾场散射特征分析 .....	魏海亮 邵利民 李天伟 120101
<b>·光纤光学与光通信·</b>	
光纤陀螺保偏光纤环几何轴向磁敏感性理论研究 .....	王夏霄 秦 祎 于 佳等 120601
星地链路激光通信地面站址选择及大气影响研究 .....	娄 岩 赵义武 陈纯毅 120602
<b>·成像系统·</b>	
可见光光学系统杂散光抑制 .....	舒星星 刘卫林 121101
星载光电成像系统空间目标的检测与识别技术研究 .....	杨 露 牛燕雄 张 颖等 121102
星载成像光谱仪运动补偿数学模型的建立与计算实现 .....	汪逸群 颜昌翔 121103
<b>·仪器,测量与计量·</b>	
采用二元编码的正弦光栅提高 PMP 测量速度和精度的方法 .....	田紫霞 陈文静 苏显渝 121201
基于遮光效应的海水折射率测量实验研究 .....	李 楠 陈琦峰 李玉松等 121202
一种新型的激光烟雾浓度检测系统研究 .....	刘 峰 刘光远 龙正吉等 121203
绿光液晶光阀的伽马校正及空间干涉显微成像研究 .....	陈大强 郑明杰 李志芳等 121204
<b>·激光器与激光光学·</b>	
基于 PDH 技术的光学传递腔的锁定 .....	郑公爵 戴大鹏 方银飞等 121401
基于液晶相控阵阵列的激光相干合成方法 .....	杨镇铭 孔令讲 肖 锋等 121402
7050 铝合金表面 Al/Ti 激光熔覆工艺实验及温度场模拟分析 .....	李建忠 黎向锋 左敦稳等 121403
轴快流 CO <sub>2</sub> 激光器预电离设计 .....	王红宣 121405
灰色关联分析选区激光烧结成型研究 .....	许 勤 121406
<b>·材料·</b>	
一种改善胆固醇液晶排列的简易方法 .....	罗吉祥 黄玉华 晋 敏 121601
高温导致三结太阳能电池电致发光谱变化 .....	任 攀 吴凌远 王伟平等 121602
<b>·光学设计与制造·</b>	
多组元全动型变焦物镜设计 .....	钟刘军 安志勇 高铎瑞等 122202
大视场像方远心离轴三反射镜光学系统设计 .....	刘 军 黄 玮 许伟才等 122203
<b>·光学器件·</b>	
太阳模拟器用新型集束式光学积分器研究 .....	李志强 苏 拾 王国名等 122301
Si 基 Ge 薄膜共振腔增强型光电探测器的设计与模拟 .....	周志文 沈晓霞 李世国 122302
GaN 基光子晶体发光二极管的优化设计 .....	刘 丹 童爱红 肖 明等 122303
<b>·表面光学·</b>	
基于填充液晶的金属狭缝阵列结构对光束的调控 .....	王继成 梁修业 夏秀山等 122401
利用一种光反射差法同时监测两种蛋白的结合反应 .....	王 旭 孔 艳 朱焯炜 122402
<b>·视觉,颜色与视觉光学·</b>	
基于 BP 神经网络和主元分析法的数码相机光谱重构算法 .....	王 勇 陈 梅 123301

# CONTENTS

## •General•

Introduction of 2013 Chinese Optics Outstanding Achievements .....	120000
Burgeoning Developments in High Repetition Rate Mode Locked Solid-State Laser .....	..... <i>Liu Jinghui Tian Jinrong Hu Mengting et al.</i> 120001
Research Progress on Overcoming the Atmospheric Turbulence Effect in Satellite-to-Ground Laser Communication .....	..... <i>Ma Xiaoping Sun Jianfeng Hou Peipei et al.</i> 120002
Research Progress on Nonlinear Application of Chalcogenide Optical Waveguide .....	..... <i>Zhang Zhenying Chen Fen Nie Qihua et al.</i> 120003
Domestic Research Progress in Optical Detection of Wake .....	..... <i>Wang Yun Liu Jifang Lu Zhenzhong et al.</i> 120004
Progress in All-Fiber Current Sensor Temperature Compensation .....	..... <i>Wang Zhi Chu Fenghong Wu Jianping</i> 120005
Research Status and Prospect of Optical Coherence Elastography .....	..... <i>Shen Yihui Li Zhifang Li Hui</i> 120006
Applications of T-Matrix Method in Optical Tweezers and Its Progress .....	..... <i>Wang Juan Ren Hongliang Zhou Yepeng</i> 120007
Research Progress of Scheme of Target-Normal Sheath Acceleration Ion .....	..... <i>Wang Fengchao</i> 120008

## •Atmospheric Optics and Oceanic Optics•

Fog Field Scattering Analysis with Drop Size Distribution .....	..... <i>Wei Hailiang Shao Limin Li Tianwei</i> 120101
-----------------------------------------------------------------	--------------------------------------------------------

## •Fiber Optics and Optical Communications•

Study on Geometrical Axial Magnetic Field Sensitivity in PM Optical Fiber Coil of Fiber Optic Gyroscope .....	..... <i>Wang Xiaoxiao Qin Yi Yu Jia et al.</i> 120601
Atmosphere Impact and Ground Station Selection for Satellite-to-Ground Laser Communication .....	..... <i>Lou Yan Zhao Yiwu Chen Chunyi</i> 120602

## •Imaging Systems•

Suppression of Stray Light in Visible Light Optical System .....	..... <i>Shu Xingxing Liu Weilin</i> 121101
Research on Detection and Recognition of Space Targets Based on Satellite Photoelectric Imaging System .....	..... <i>Yang Lu Niu Yanxiong Zhang Ying et al.</i> 121102
Foundation and Computation Realization of Space-Borne Hyperspectral Imager's Motion Compensation Math Model .....	..... <i>Wang Yiqun Yan Changxiang</i> 121103

## •Instrumentation, Measurement and Metrology•

Method for Improving Accuracy and Measurement Speed of PMP Using Error Diffusion Binary Encoded Sinusoidal Grating .....	..... <i>Tian Zixia Chen Wenjing Su Xianyu</i> 121201
Experimental Investigation of Seawater Refractive Index Based on Shading Effect .....	..... <i>Li Nan Chen Qifeng Li Yusong et al.</i> 121202
A Novel Smoke Detection System Using Laser .....	..... <i>Liu Feng Liu Guangyuan Long Zhengji et al.</i> 121203
Gamma Correction for Green Light Liquid Crystal Spatial Light Modulator and Spatial Light Interference Microscopy Imaging Study .....	..... <i>Chen Daqiang Zheng Mingjie Li Zhifang et al.</i> 121204

## •Lasers and Laser Optics•

Locking of Optical Transfer Cavity Based on PDH Technique .....	..... <i>Zheng Gongjue Dai Dapeng Fang Yinfei et al.</i> 121401
Coherent Beam Combination Based on Array of Liquid Crystal Optical Phased Arrays .....	..... <i>Yang Zhenming Kong Lingjiang Xiao Feng et al.</i> 121402
Process Test and Temperature Field Simulation of the Al/Ti Laser Cladding Coating Above 7050 Aluminum Alloy .....	..... <i>Li Jianzhong Li Xiangfeng Zuo Dunwen et al.</i> 121403
Design of Preionization in Fast Axial Flow CO <sub>2</sub> Lasers .....	..... <i>Wang Hongxuan</i> 121405
Study on Process Parameters Optimization of Selective Laser Sintering with Gray Relational Analysis .....	..... <i>Xu Qin</i> 121406

## •Materials•

One Method for Improving the Alignment of Cholesteric Liquid Crystal .....	..... <i>Luo Jixiang Huang Yuhua Jin Min</i> 121601
Change of Electroluminescence Spectra of Solar Cells Caused by Heating .....	..... <i>Ren Pan Wu Lingquan Wang Weiping et al.</i> 121602

**•Optical Design and Fabrication•**

All Lens Elements Movable Zoom Lens Design ..... *Zhong Liu jun An Zhiyong Gao Duorui et al.* 122202  
Optical Design of the Off-Axis Three-Mirror Reflective Telecentric System with Wide Field of View .....  
..... *Liu Jun Huang Wei Xu Weicai et al.* 122203

**•Optical Devices•**

Research on a New Cluster-Type Optical Integrator for Solar Simulator .....  
..... *Li Zhiqiang Su Shi Wang Guoming et al.* 122301  
Design and Simulation of Resonant Cavity Enhanced Ge Film Photodiode on Si Substrate .....  
..... *Zhou Zhiwen Shen Xiaoxia Li Shiguo* 122302  
Optimizing Design for GaN-Based Light Emitting Diodes with Photonic Crystal Slab .....  
..... *Liu Dan Tong Aihong Xiao Ming et al.* 122303

**•Optics at Surfaces•**

Controlling Light Based on Metal Slit Array Structure Filling in Liquid Crystal .....  
..... *Wang Jicheng Liang Xiuye Xia Xiushan et al.* 122401  
Real-Time Binding Reactions Detected by Optical Reflectivity Difference from Blended Protein Samples .....  
..... *Wang Xu Kong Yan Zhu Zhuowei* 122402

**•Vision, Color, and Visual Optics•**

Spectral Reconstruction Algorithm of Digital Camera Based on BP Neural Network and Principal Component Analysis  
..... *Wang Yong Chen Mei* 122301