

## 目 次

### 综述与评论

- 基于 SBS 超短脉冲激光器的介质研究 ..... 刘泓鑫 李永亮 顾小琨等(387)  
切片式及超分辨率激光三维成像现状 ..... 李媛森 孙华燕 郭惠超(395)

### 激光应用技术

- 高温下表面波测量亚表面缺陷宽度的数值模拟 ..... 陶 程 殷安民 王煜帆等(403)  
飞秒激光刻蚀 FR-4 覆铜板成形微细线路研究 ..... 倪 超 王明娣 施克明等(410)  
高精度事件计时器及其在卫星激光测距应用 ..... 秦 思 吴志波 张海峰等(419)  
基于  $2 \times 2$  放大转发中继的混合 RF/FSO 系统性能分析 ..... 张 韵 王 翔 赵尚弘(424)  
飞秒脉冲激光烧蚀金属的机理分析 ..... 许 媛 宁仁霞 鲍 婕等(432)

### 激光器技术

- 高功率光纤激光器用 20/400 双包层掺镱光纤 ..... 冯高峰 杨军勇 王建明等(438)

### 红外技术及应用

- 红外热成像系统传递函数的测试研究 ..... 张春仙 李忠升 张界润(442)  
复杂环境下弱信号红外探测系统灵敏度需求及实现方法研究 ..... 吴立民 刘雨晨 杨 坤等(447)  
基于孔径/视场分割的红外复眼接收系统设计 ..... 陈 阳 刘 钧 岳宝毅(454)  
堆栈降噪自编码结合随机森林的黄龙病检测 ..... 路皓翔 魏曼曼 杨辉华等(460)

### 红外材料与器件

- 长波碲镉汞探测器 RV 特性分析 ..... 张智超 付 伟 党 静(467)

### 光电技术与系统

- 机载光电探测系统二级稳定控制分析 ..... 王 诚 闻家亮 李江勇等(473)

### 光纤及光通讯技术

- 对称结构光子晶体光纤温度传感特性的研究 ..... 刘旭安 程和平 焦 锋等(477)  
色散渐减光纤环形腔镜非等比耦合传输特性研究 ..... 于丙涛 罗爱平(482)

### 光电对抗

- 温度对恒虚警补偿下 APD 倍增因子的影响 ..... 刘贺雄 周 冰 贺 宣等(487)  
基于激光选区熔化的低畸变 F-theta 场镜设计 ..... 王旭琴 孙 靖 李 鹏等(493)  
10.6  $\mu\text{m}$  激光对红外成像系统干扰特性研究 ..... 荆卫国 田 超 王红培等(497)

### 图像与信号处理

- 基于 Zernike 矩特征的电力设备红外图像目标识别 ..... 郭文诚 崔昊杨 马宏伟等(503)  
基于三维旋转模型的红外全景图像拼接方法 ..... 谢安宁 张宏伟 赵志刚等(507)

## CONTENTS

### Overview & Comment

- (387) Research on medium for ultrashort pulse laser by SBS ..... *LIU Hong-xin et al*  
(395) Current situation of time-slicing and super-resolution laser imaging in three-dimensional ..... *LI Yuan-miao et al*

### Laser Application Technology

- (403) Numerical simulation on width gauging of subsurface defects using surface waves at high temperature ..... *TAO Cheng et al*  
(410) Forming micro lines by etching of FR-4 copper clad laminate with femtosecond laser ..... *NI Chao et al*  
(419) High precise event timer and its application to satellite laser ranging ..... *QIN Si et al*  
(424) Performance of  $2 \times 2$  AF relay-assisted RF/FSO communication system ..... *ZHANG Yun et al*  
(432) Mechanism analysis of ablation of metal by femtosecond pulsed laser ..... *XU Yuan et al*

### Laser Technology

- (438) 20/400 double-clad Yb-doped fibers for high power fiber lasers ..... *FENG Gao-feng et al*

### Infrared Technology & Application

- (442) Study on measurement of MTF in IR systems ..... *ZHANG Chun-xian et al*  
(447) Research on sensitivity requirement and implement method of weak signal infrared detecting system during complicated environment ..... *WU Li-min et al*  
(454) Design of infrared compound eye receiving system based on aperture/field segmentation ..... *CHEN Yang et al*  
(460) Detecting Huanglongbing by stacked denoising auto-encoders combined random forest ..... *LU Hao-xiang et al*

### Infrared Material & Device

- (467) Analysis of resistance voltage characteristic for long wavelength HgCdTe detector ..... *ZHANG Zhi-chao et al*

### O – E Technology & System

- (473) Analysis of two-stage stabilization control based on airborne electro-optical detection system ..... *WANG Cheng et al*

### Optical Fiber & Optical Communication

- (477) Research on temperature sensing characteristics of photonic crystal fiber with symmetrical structure ..... *LIU Xu-an et al*  
(482) The research on non-equal-ratio coupling transmission characteristics of the dispersion decreasing fiber loop mirror ..... *YU Bing-tao et al*

### O – E Countermeasure

- (487) Influence of temperature on APD multiplication factor under constant false alarm compensation ..... *LIU He-xiong et al*  
(493) Low distortion F-theta lens design based on selective laser melting ..... *WANG Xu-qin et al*  
(497) Study on interference characteristics of 10.6  $\mu\text{m}$  laser on infrared imaging system ..... *JING Wei-guo et al*

### Image & Signal Processing

- (503) Infrared image target recognition of power equipment based on Zernike moment ..... *GUO Wen-cheng et al*  
(507) Panoramic stitching of infrared image based on three-dimensional rotation model ..... *XIE An-ning et al*