



中国科技核心期刊

ISSN 1672-9870

CN 22-1364/TH

长春理工大学学报

自然科学版

JOURNAL OF CHANGCHUN UNIVERSITY OF
SCIENCE AND TECHNOLOGY

(NATURAL SCIENCE EDITION)

第45卷 第3期

2022年 6月

Vol.45 No.3

Jun. 2022

ISSN 1672-9870



3
2022

目 次

菲涅尔衍射及有限时域差分在光栅仿真中的应用研究 宫鹏,徐桂成,张斯特,刘震宇(1)

飞秒激光制备可调控铝合金表面微沟槽结构研究 刘克,刘子源,陶海岩,林景全(6)

超构表面单元旋转对称性对极化转换的影响 李凤娇,汪剑波,张文琪,张东辉(14)

基于热效应的长脉冲激光对硅基PIN恢复时间影响的研究 李辛垒,魏智,高乐,金光勇(21)

基于NSST与引导滤波相结合的红外与可见光图像融合方法研究 曹宇彤,李向阳,陈笑,宦克为(28)

中红外波段超广角抗反射微纳结构的研究 张艺馨,张亢,林鹤,吴锦双,沈思彤,付跃刚(35)

红外双波段景象模拟器光学系统设计 顾航硕,王凌云,李光茜(41)

低成本单线激光雷达的曲面重建方法研究 牛佳钰,王智炜,陈苏,胡青龙,王世峰(48)

基于DMD微透镜阵列的投影仪光学镜头设计 李亚慧,王凌云,郑茹,李光茜(56)

高动态星图显示算法研究 郝冠男,王凌云,李光茜,穆思达(63)

激光跟踪仪在侧风环境下的测量精度分析 魏小哲,车英(70)

一种基于FPGA的多模式微纳遥感相机设计 张原野,刘增龙,吴建福,关晨辉,彭呈祥(75)

载人航天器网络化层级式信息系统设计 李光日,王静华,李智勇,张森,王昊(82)

超弹镍钛记忆合金线切割加工工艺及形状恢复能力研究 张颢,许金凯,于朋(89)

激光加工逆重力液滴单向传输功能表面 楚顺顺,弯艳玲(97)

基于荧光免疫层析技术的孕激素定量检测仪 张长亮,庞春颖,郝浙吉(105)

基于改进多导联残差网络的广泛前壁心肌梗死自动诊断 赵滢琳,庞春颖,李爽(111)

基于图像光电容积描记法的心率测量 李炳霖,葛辉琼,刘振瑶,张爽,嵇晓强(118)

高血压、糖尿病患者光电容积脉搏波特征分析 刘佳美,宋春莉,李思奇,庞春颖(125)

基于深度森林的高校贫困生认定模型研究 滕玲,施三支,张梦菲,刘先俊(131)

基于近红外光谱和机器学习的无创血糖浓度回归研究 李莹,周林华(138)

CONTENTS

Research of Fresnel Diffraction and Finite Difference Time Domain in Grating Simulation
..... GONG Peng, XU Guicheng, ZHANG Site, LIU Zhenyu(1)

Research on Femtosecond Laser Fabrication of Adjustable Micro-groove Structure
on Aluminum Alloy Surface LIU Ke, LIU Ziyuan, TAO Haiyan, LIN Jingquan(6)

Influence of the Rotational Symmetry of Metasurface Element on the Polarization Conversion
..... LI Fengjiao, WANG Jianbo, ZHANG Wenqi, ZHANG Donghui(14)

Research on Recovery Time Influence of Millisecond Pulse Laser to Silicon PIN
Based on Thermal Effect LI Xinlei, WEI Zhi, GAO Le, JIN Guangyong(21)

Research on Fusion Method of Infrared and Visible Image Based on NSST
and Guided Filtering CAO Yutong, LI Xiangyang, CHEN Xiao, HUAN Kewei(28)

Research on Mid-infrared Ultra-wide-angle Anti-reflection Micro-nano Structure
..... ZHANG Yixin, ZHANG Kang, LIN He, WU Jinshuang, SHEN Sitong, FU Yuegang(35)

Optical Design of MW/LW Infrared Dual-bands Scene Simulation System
..... GU Hangshuo, WANG Lingyun, LI Guangxi(41)

Research on Surface Reconstruction Method of Low-cost Single-layer Lidar
..... NIU Jiayu, WANG Zhiwei, CHEN Su, HU Qinglong, WANG Shifeng(48)

Design of Projector Optical Lens Based on DMD Microlens Array
..... LI Yahui, WANG Lingyun, ZHENG Ru, LI Guangxi(56)

Research on Display Algorithm of High Dynamic Star Map
..... HAO Guannan, WANG Lingyun, LI Guangxi, MU Sida(63)

Measuring Accuracy Analysis of Laser Tracker in Crosswind Environment WEI Xiaozhe, CHE Ying(70)

Design of a Multi-mode Micro-nano Remote Sensing Camera Based on FPGA

..... ZHANG Yuanye , LIU Zenglong , WU Jianfu , GUAN Chenhui , PENG Chengxiang(75)

Design of Networked and Hierarchical Information System for the Manned Spacecraft

..... LI Guangri , WANG Jinghua , LI Zhiyong , ZHANG Sen , WANG Hao(82)

Research on Wire-EDM Process and Shape Recovery Ability of Super-elastic Ni-Ti Memory Alloy

..... ZHANG Hao , XU Jinkai , YU Peng(89)

Transmission Function Surface of Laser Processing Anti-gravity Droplet Unidirectional

..... CHU Shunshun , WAN Yanling(97)

Design of Progesterone Monitor Based on Fluorescence Immune Technology

..... ZHANG Changliang , PANG Chunying , HAO Zheji(105)

Automatic Diagnosis of Extensive Anterior Wall Myocardial Infarction Based on

Improved Multi-lead Residual Network ZHAO Yinglin , PANG Chunying , LI Shuang(111)

Research on Video Non-contact Heart Rate Measurement Method

..... LI Binglin , GE Huiqiong , LIU Zhenyao , ZHANG Shuang , JI Xiaoqiang(118)

Analysis on Characteristics of Photoplethysmography in Hypertension

and Diabetes Patients LIU Jiamei , SONG Chunli , LI Siqi , PANG Chunying(125)

Research on the Identification Model of Poor College Students Based on Deep Forest

..... TENG Ling , SHI Sanzhi , ZHANG Mengfei , LIU Xianjun(131)

Research on Non-invasive Blood Glucose Concentration Regression Based on

Near-infrared Spectroscopy and Machine Learning LI Ying , ZHOU Linhua(138)