

ISSN 1006-4125

CN 31-1690/TN

中文核心期刊
中国科技核心期刊

LOP | Laser& Optoelectronics Progress

第55卷 VOL. 55 第1期 NO. 1 [总第624期]

激光与光电子学进展

2018.1

特别专题

激光增材制造技术



ISSN 1006-4125

01>



9 771006 412180
后方数据



中国激光杂志社
CHINESE LASER PRESS

中国科学院上海光学精密机械研究所 主办

目 次

· “激光增材制造技术”专题 ·

专题前言	邱建荣, 王华明 011400
金属零件激光选区熔化技术的现状及进展	杨永强, 陈杰, 宋长辉, 等 011401
高强铝合金的激光选区熔化成形研究现状	朱海红, 廖海龙 011402
钛及钛合金激光选区熔化技术的研究进展	李俊峰, 魏正英, 卢秉恒 011403
激光选区熔化成形模具钢的发展现状及前景	文世峰, 季宪泰, 周燕, 等 011404
铝合金增材制造技术研究进展	苗秋玉, 刘妙然, 赵凯, 等 011405
激光增材制造技术在眼科中的应用	段沐森, 吴凡, 刘瑞雪 011406
激光增材制造钢粉体材料研究现状	董世运, 闫世兴, 冯祥奕, 等 011407
陶瓷材料激光增材制造的研究现状及展望	倪荣萍, 钱滨, 刘畅, 等 011408
激光 3D 打印玻璃研究进展	杨玥, 钱滨, 刘畅, 等 011409
3D 飞秒激光纳米打印(封面文章)	刘墨南, 李木天, 孙洪波 011410
激光微纳三维打印	杨栋, 刘力谱, 杨宏, 等 011411
骨科数字化 3D 打印技术及应用	陈继民, 张成宇, 曾勇, 等 011412
激光冲击强化对电弧增材 2319 铝合金微观组织及残余应力的影响	孙汝剑, 朱颖, 李刘合, 等 011413
四波长激光准六自由度激光增材制造异形永磁件	王涛, 朱惠芳, 张翠亭, 等 011414
基于三维打印技术的太赫兹波段的柱透镜	张涵祎, 王可嘉, 张玉立, 等 011415
封接玻璃预组件的激光选择性烧结制备技术	徐博, 殷先印, 祖成奎, 等 011416
内嵌类蜂窝石墨骨架导电复合材料的制备与性能	吴海华, 肖林楠, 王俊, 等 011417

· 衍射与光栅 ·

适用于薄膜硅太阳电池背反射面的一维衍射光栅结构	石鑫, 孙诚, 王晓秋 010501
-------------------------------	--------------------

· 光纤光学与光通信 ·

光纤光栅位移传感器实时监测解调系统	尹建璟, 许雪梅, 丁一鹏 010601
离轴式共口径激光通信光学系统设计	王蕴琦, 刘伟奇, 付瀚毅, 等 010602

· 全息 ·

基于三角形面光源频谱解析解的计算全息图快速生成算法	刘超, 桂进斌, 李俊昌, 等 010901
---------------------------------	------------------------

· 图像处理 ·

基于快速有限剪切波变换与引导滤波的多聚焦图像融合算法	朱达荣, 许露, 汪方斌, 等 011001
融合局部特征与深度置信网络的人脸表情识别	王琳琳, 刘敬浩, 付晓梅 011002
基于模糊边缘补足的自适应非局部均值图像去噪算法	曹硕, 黄利萍, 侯倍倍, 等 011003
基于自适应模糊 C 均值与后处理的图像分割算法	朱占龙, 王军芬 011004
基于 SURB 结合随机抽样一致算法在鞋面匹配中的应用	景军锋, 谢佳, 李鹏飞 011005
基于时空深度神经网络的视频指纹算法	汪冬冬, 李岳楠 011006
基于 Shearlet 变换的扫描文档图像倾斜检测	张新红, 张一凡, 张帆 011007
基于方法库的点云去噪与精简算法	李仁忠, 杨曼, 冉媛, 等 011008
基于混合色彩空间的分块颜色特征提取算法	王民, 王静, 张立材, 等 011009
基于判别协作表征分类器的人体行为识别	昝宝锋, 孔军, 蒋敏 011010
基于熵率分割和多尺度分解的图像融合方法	殷向, 马骏 011011
基于分数阶微分和多尺度 Retinex 联合的雾霭图像增强算法	余萍, 郝成成 011012

一种基于色彩迁移技术的 DeBruijn 彩色结构光解码算法	白宏运, 许宏丽, 黄华	011013
· 成像系统 ·		
基于光学相干层析技术的电工胶带检验方法	刘康康, 孟利, 张宁, 等	011101
分布式孔径综合成像系统旋转和放大率误差的校正	陈波, 孙天齐, 刘爱新, 等	011102
基于编码激励的内镜超声相控阵成像算法	卞光宇, 汪毅, 白宝平, 等	011103
· 仪器, 测量与计量 ·		
平面靶标测头中心的两步法标定	郑兴纯, 赵敏, 冯少华	011201
基于激光标靶和捷联惯导系统组合位姿测量方法	郭庆亮, 林嘉睿, 任永杰, 等	011202
数字水准仪快速自适应相关匹配条码的定位方法	刘璐璐, 黄秋红, 刘济铭, 等	011203
· 集成光学 ·		
波导型可调控检偏器设计与模拟	王亚新, 毛强, 唐雄贵	011301
· 机器视觉 ·		
基于机器视觉的冲压件表面缺陷在线检测研究	陈广锋, 管观洋, 魏鑫	011501
基于机器视觉的茶小绿叶蝉识别方法研究	陈晶, 朱启兵, 黄敏, 等	011502
· 材料 ·		
棋盘复式晶格介质环型光子晶体的完全带隙	刘祥, 唐吉玉, 刘紫雁	011601
· 非线性光学 ·		
(2+1)维色散长波方程的新孤子解及其演化	杨娟, 冯庆江	011901
· 光学器件 ·		
高清硅基微显示数模融合扫描策略	满丽萍, 季渊, 褚勇男, 等	012301
· 表面光学 ·		
基于石墨烯的表面等离激元带阻滤波器	赵静, 王加贤, 邱伟彬, 等	012401
· 量子光学 ·		
算符组合激发双模压缩真空态的量子特性	叶希梅, 卢道明	012701
· 遥感与传感器 ·		
基于贝叶斯学生 t 分布混合的稳健点集匹配	杨丽娟, 田铮, 温金环, 等	012801
基于 MODIS 遥感影像的直布罗陀海峡内波传播特性研究	史璐, 王晶, 梅源	012802
基于建筑物激光点云边缘线自动提取提高 DSM 精度	苗松, 王建军, 李云龙, 等	012803
· 光谱学 ·		
基于高光谱多尺度分解的土壤含水量反演	蔡亮红, 丁建丽	013001
一种基于统计流形的光谱信息散度颜料识别方法	王伟超, 王慧琴, 王可, 等	013002
基于高光谱散射技术的粉体堆密度无损检测	杨宇, 邢永春, 朱启兵	013003
基于 PARAFAC 和 ART 算法的油类污染物荧光检测	陈至坤, 弼阳, 沈小伟, 等	013004
基于 LSSVM 和 CARS 变量优选的食用植物油中铬含量 DP-LIBS 检测	吴宜青, 孙通, 刘津, 等	013005
改进的修剪随机森林算法在烟叶近红外光谱产地识别中的应用研究	孔清清, 丁香乾, 宫会丽	013006
使用吸收光谱法研究食用靛蓝的光降解率	张笑河, 陈国庆, 马超群	013007
水晶中针状蓝线石的谱学特征研究	吴晓, 吴晓玉, 韩孝朕, 等	013008
· 视觉, 颜色与视觉光学 ·		
基于移动平台热成像的行人检测随机森林分类器	诸葛琳娜, 张磊	013301
· 资讯 ·		
《基于激光诱导及散斑图像处理的航空发动机尾气粒子流场监测关键技术研究》项目简介	013601	

CONTENTS

• Laser Additive Manufacturing Technology •

Introduction for Feature Issue	Qiu Jianrong , Wang Huaming 011400
Current Status and Progress on Technology of Selective Laser Melting of Metal Parts	Yang Yongqiang , Chen Jie , Song Changhui , et al. 011401
Research Status of Selective Laser Melting of High Strength Aluminum Alloy	Zhu Haihong , Liao Hailong 011402
Research Progress on Technology of Selective Laser Melting of Titanium and Titanium Alloys	Li Junfeng , Wei Zhengying , Lu Bingheng 011403
Development Status and Prospect of Selective Laser Melting of Mould Steels	Wen Shifeng , Ji Xiantai , Zhou Yan 011404
Research Progress on Technologies of Additive Manufacturing of Aluminum Alloys	Miao Qiuyu , Liu Miaoran , Zhao Kai , et al. 011405
Application of Laser Additive Manufacturing Technology in Ophthalmology	Duan Musen , Wu Fan , Liu Ruixue 011406
Research Status of Steel Powder Material for Laser Additive Manufacturing	Dong Shiyun , Yan Shixing , Feng Xiangyi , et al. 011407
Status and Prospect of Laser Additive Manufacturing of Ceramic Materials	Ni Rongping , Qian Bin , Liu Chang , et al. 011408
Progress in 3D Laser Printing of Glass	Yang Yue , Qian Bin , Liu Chang , et al. 011409
3D Femtosecond Laser Nanoprinting (Cover Paper)	Liu Monan , Li Mutian , Sun Hongbo 011410
Laser Micro-Nano Three-Dimensional Printing	Yang Dong , Liu Lipu , Yang Hong , et al. 011411
3D Printing Technology in Orthopedics and Its Application	Chen Jimin , Zhang Chengyu , Zeng Yong , et al. 011412
Effect of Laser Shock Peening on Microstructure and Residual Stress of Wire-Arc Additive Manufactured 2319 Aluminum Alloy	Sun Rujian , Zhu Ying , Li Liuhe , et al. 011413
Heterogeneous Permanent Magnetic Parts by Laser Additive Manufacturing with Four-Wavelength-Laser and Quasi-Six-Degree-of-Freedom	Wang Tao , Zhu Huifang , Zhang Cueting , et al. 011414
Terahertz Cylindrical Lenses Based on Three-Dimensional Printing Technique	Zhang Hanyi , Wang Kejia , Zhang Yuli , et al. 011415
Preparation of Sealing Glass Preforms by Selective Laser Sintering	Xu Bo , Yin Xianyin , Zu Chengkui , et al. 011416
Preparation and Performance of Conductive Composites Embedded in Honeycomb-Like Graphite Skeletons	Wu Haihua , Xiao Linnan , Wang Jun , et al. 011417

• Diffraction and Gratings •

One-Dimensional Diffraction Grating Structure for Rear Reflection Surface of Thin Film Silicon Solar Cells	Shi Xin , Sun Cheng , Wang Xiaoqiu 010501
--	---

• Fiber Optics and Optical Communications •

Real-Time Monitoring and Demodulation System of Fiber Bragg Grating Displacement Sensor	Yin Jianjing , Xu Xuemei , Ding Yipeng 010601
Design of Laser Communication Optical System with Off-Axis Common Aperture	Wang Yunqi , Liu Weiqi , Fu Hanyi , et al. 010602

• Holography •

Fast Generation Algorithm of Computer-Generated Hologram Based on Triangular Surface Light Source Frequency Spectrum Analytic Solutions	Liu Chao , Gui Jinbin , Li Junchang , et al. 010901
---	---

• Image Processing •

Multi-Focus Image Fusion Algorithm Based on Fast Finite Shearlet Transform and Guided Filter	Zhu Darong , Xu Lu , Wang Fangbin , et al. 011001
Facial Expression Recognition Based on Fusion of Local Features and Deep Belief Network	Wang Linlin , Liu Jinghao , Fu Xiaomei 011002
Self-Adaptive Non-Local Means Image Denoising Algorithm Based on Fuzzy Edge Complement	Cao Shuo , Huang Liping , Hou Beibei , et al. 011003
Image Segmentation Based on Adaptive Fuzzy C-Means and Post Processing Correction	Zhu Zhanlong , Wang Junfen 011004
Application of SURB Combined with Random Sample Consensus Algorithm in Shoe Uppers Matching	Jing Junfeng , Xie Jia , Li Pengfei 011005
Video Fingerprint Algorithm Based on Spatio-Temporal Deep Neural Network	Wang Dongdong , Li Yuenan 011006
Skew Detection of Scanned Document Image Based on Shearlet Transform	Zhang Xinhong , Zhang Yifan , Zhang Fan 011007
Point Cloud Denoising and Simplification Algorithm Based on Method Library	Li Renzhong , Yang Man , Ran Yuan , et al. 011008
Block Color Feature Extraction Algorithm Based on Mixed Color Space	Wang Min , Wang Jing , Zhang Licai , et al. 011009
Human Action Recognition Based on Discriminative Collaborative Representation Classifier	Zan Baofeng , Kong Jun , Jiang Min 011010
Image Fusion Method Based on Entropy Rate Segmentation and Multi-Scale Decomposition	Yin Xiang , Ma Jun 011011

Foggy Image Enhancement by Combined Fractional Differential and Multi-Scale Retinex	<i>Yu Ping, Hao Chengcheng</i>	011012
A DeBruijn Color Structured Light Decoding Algorithm Based on Color Transfer Technique	<i>Bai Hongyun, Xu Hongli, Huang Hua</i>	011013
• Imaging Systems •		
Characterization of Electrical Tapes by Optical Coherence Tomography	<i>Liu Kangkang, Meng Li, Zhang Ning, et al.</i>	011101
Correction of Rotation and Magnification Errors in Distributed Aperture Synthesis Imaging System	<i>Chen Bo, Sun Tianqi, Liu Aixin, et al.</i>	011102
Phased Array Imaging Algorithm for Endoscopic Ultrasound Based on Coded Excitation	<i>Bian Guangyu, Wang Yi, Bai Baoping, et al.</i>	011103
• Instrumentation, Measurement and Metrology •		
Two-Step Calibration of Probe Tip Center of Planar Target	<i>Zheng Xingchun, Zhao Min, Feng Shaohua</i>	011201
Combined Pose Measurement Method Based on Laser Target and Strapdown Inertial Navigation System	<i>Guo Qingyao, Lin Jiarui, Ren Yongjie, et al.</i>	011202
Fast Adaptive Correlation Matching Barcode Location Method for Digital Level	<i>Liu Luyao, Huang QiuHong, Liu Jiming, et al.</i>	011203
• Integrated Optics •		
Design and Simulation of Controllable Polarization Analyzer Based on Waveguide Structures	<i>Wang Yixin, Mao Qiang, Tang Xionggui</i>	011301
• Machine Vision •		
Online Stamping Parts Surface Defects Detection Based on Machine Vision	<i>Chen Guangfeng, Guan Guanyang, Wei Xin</i>	011501
Recognition of <i>Emposaca Flavescens</i> Based on Machine Vision	<i>Chen Jing, Zhu Qibing, Huang Min, et al.</i>	011502
• Materials •		
Complete Bandgap of Dielectric Ring-Shaped Photonic Crystal Based on Checkerboard Complex Lattice	<i>Liu Xiang, Tang Jiyu, Liu Ziyuan</i>	011601
• Nonlinear Optics •		
New Soliton Solutions and Soliton Evolutions for (2+1)-Dimensional Dispersive Long Wave Equation	<i>Yang Juan, Feng Qingjiang</i>	011901
• Optical Devices •		
Digital and Analog Hybrid Scan Strategy for High Definition Microdisplay on Silicon	<i>Man Liping, Ji Yuan, Chu Yongnan, et al.</i>	012301
• Optics at Surfaces •		
Surface Plasmonic Polariton Band-Stop Filters Based on Graphene	<i>Zhao Jing, Wang Jiaxian, Qiu Weibin, et al.</i>	012401
• Quantum Optics •		
Quantum Properties of Two-Mode Squeezed Vacuum States Excited by Combination Operators	<i>Ye Ximei, Lu Daoming</i>	012701
• Remote Sensing and Sensors •		
Robust Point Set Registration Based on Bayesian Student's t Mixture Model	<i>Yang Lijuan, Tian Zheng, Wen Jinhuan, et al.</i>	012801
Propagation Characteristics of Internal Waves in the Strait of Gibraltar Based on MODIS Remote Sensing Images	<i>Shi Lu, Wang Jing, Mei Yuan</i>	012802
Digital Surface Model Accuracy Improvement Based on Edge Line Automatic Extraction of Building Laser Point Cloud	<i>Miao Song, Wang Jianjun, Li Yunlong, et al.</i>	012803
• Spectroscopy •		
Inversion of Soil Moisture Content Based on Hyperspectral Multi-Scale Decomposition	<i>Cai Lianghong, Ding Jianli</i>	013001
An Identification Method of Spectral Information Divergence Pigment Based on Statistical Manifold	<i>Wang Weichao, Wang Huiqin, Wang Ke, et al.</i>	013002
Non-Destructive Detection of Bulk Density of Powder Using Hyperspectral Scattering Technique	<i>Yang Yu, Xing Yongchun, Zhu Qibing</i>	013003
Fluorescence Detection of Oil Pollutants Based on PARAFAC and ART Algorithms	<i>Chen Zhikun, Mi Yang, Shen Xiaowei, et al.</i>	013004
Detection of Chromium Content in Edible Vegetable Oil with DP-LIBS Combined with LSSVM and CARS Methods	<i>Wu Yiqing, Sun Tong, Liu Jin, et al.</i>	013005
Application of Improved Random Forest Pruning Algorithm in Tobacco Origin Identification of Near Infrared Spectrum	<i>Kong Qingqing, Ding Xiangqian, Gong Huili</i>	013006
Degradation Ratio of Indigo Carmine Based on Absorption Spectroscopy	<i>Zhang Xiaohe, Chen Guoqing, Ma Chaoqun</i>	013007
Spectral Characteristics of Needle-Like Dumortierite in Crystal	<i>Wu Xiao, Wu Xiaoyu, Han Xiaozhen, et al.</i>	013008
• Vision, Color, and Visual Optics •		
Random Ferns Classifier for Pedestrian Detection Based on Thermal Imaging of Mobile Platform	<i>Zhuge Linna, Zhang Lei</i>	013301

LOP

Laser&
Optoelectronics
Progress

激光与光电子学进展

1个工作日初审，平均录用周期 1个月

0.807

2017年影响因子
(CJCR)

Scopus
中文核心期刊
中国科技核心期刊
CSCD

本刊以及时报道国内外激光与光电子学领域科技的最新研究成果，促进激光与光电子事业的发展为宗旨，长期向国内外广大科研人员诚征高质量综述类学术论文。



编者语

《激光与光电子学进展》作为大篇幅发表激光与光电子学领域综述文章的品牌学术期刊，非常适合研究人员调研国际热点、寻找新课题，也是研究生了解研究课题、开拓视野的最佳选择。



优秀综述精选



综述征稿启事

- 论文选题应反映激光与光电子学领域的最新发展动态和研究热点；
- 论文内容应对该研究方向的现有研究成果进行全面、系统的总结和分析，必须要有一定的深度和时效性，能反映出这一专题的历史背景、研究现状和发展趋势；
- 论文应包含作者所在课题组的研究经验或体会，阐明作者本人的学术观点；
- 论文应具有独创性和严谨性，严禁抄袭、涉密和一稿多投。



| 欢迎踊跃投稿！