

LOP | Laser&  
Optoelectronics  
Progress

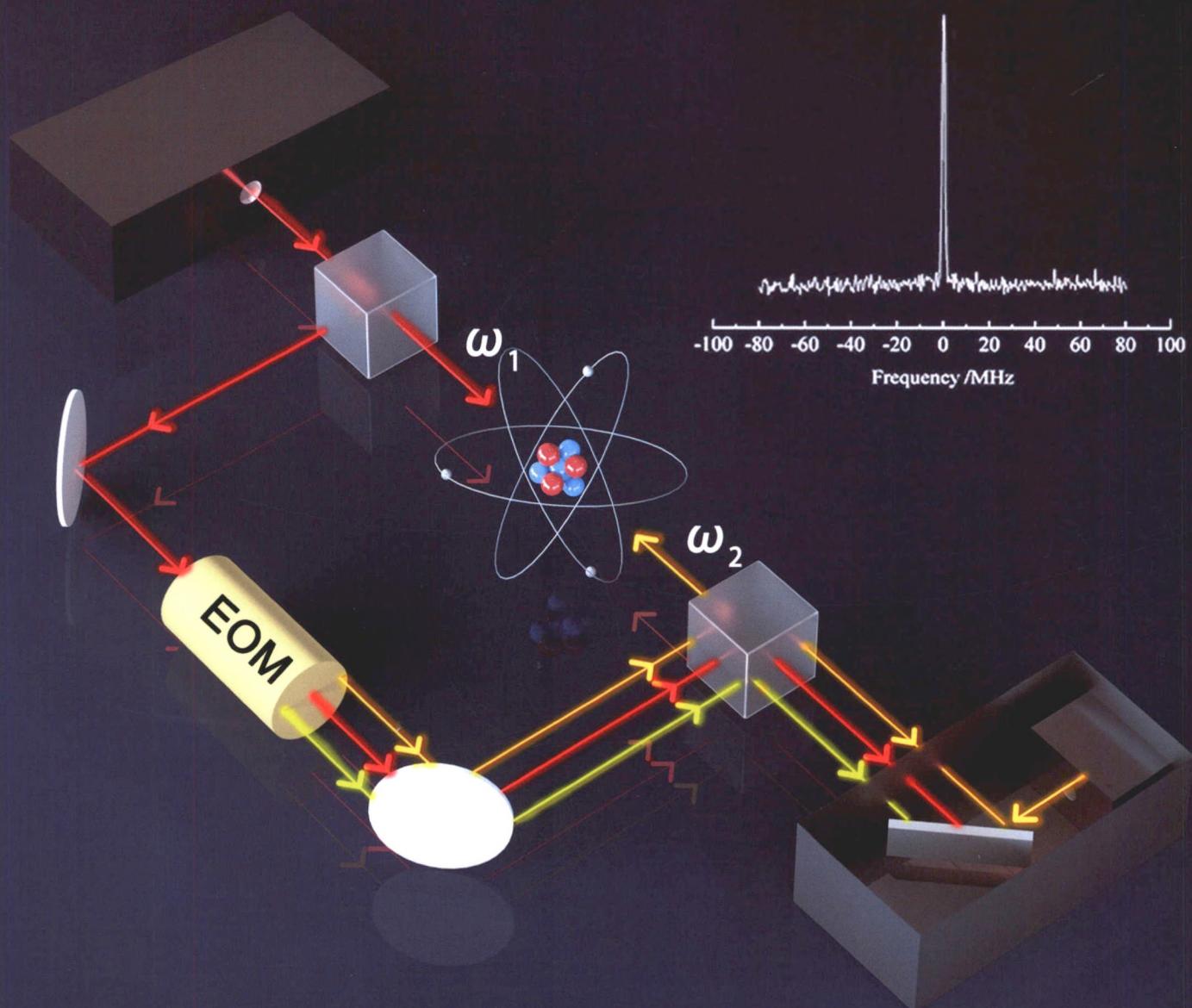
## 激光与光电子学进展

总第656期

第56卷 | 第21期

Vol. 56 | No. 21

2019.11(上)



# 激光与光电子学进展

第 56 卷 第 21 期 2019 年 11 月

(总第 656 期)

## 目 次

### · 大气光学与海洋光学 ·

星地下行链路中多孔径相干光接收机性能分析 ..... 张晓玉, 崔晨, 刘德明, 等 21101

### · 光纤光学与光通信 ·

关于数据中心间弹性光网络中虚拟网络功能配置的问题建模及优化算法 ..... 宣贺君, 魏士伟, 郭华平, 等 210601

LED 非线性信道下基于对称恢复的 ACO-OFDM 性能研究 ..... 刘晓爽, 李建锋, 李建科, 等 210603

### · 图像处理 ·

图像多尺度密集网络去模糊模型 ..... 宋昊泽, 吴小俊 211001

一种彩色图像的直线段检测算法 ..... 刘雨晴, 钟宝江, 郑行家 211002

基于滑动滤波和自动区域生长的陶瓷瓦表面裂纹检测 ..... 李小磊, 曾曙光, 郑胜, 等 211003

基于图卷积网络的深度学习点云分类模型 ..... 王旭娇, 马杰, 王楠楠, 等 211004

低误差匹配策略下的遥感图像 S 型融合拼接 ..... 高晓倩, 杨帆, 范海瑞, 等 211005

结合信息熵与低秩张量分析的金属零件破损检测 ..... 杨鹏, 刘德儿, 李瑞雪, 等 211006

基于张量截断核范数的高光谱图像超分辨率重构 ..... 王艺卓, 曾海金, 赵佳佳, 等 211007

### · 成像系统 ·

基于天牛须搜索的全变分最小化算法在计算机断层成像内重建中的应用 ..... 孔慧华, 孙英博, 张雁霞 211101

平行立体图像视差自适应调整 ..... 龙桂玲, 李其昌 211102

### · 集成光学 ·

扩张型 Benes 光交换芯片未满配置情形下的约束链路路由算法 ..... 张金花, 武保剑, 邱昆 211301

### · 激光器与激光光学 ·

钛轧板表面氧化层激光清洗技术研究 ..... 贾宝申, 屈红星, 唐洪平, 等 211401

激光表面重熔蠕墨铸铁气门座微观特性分析和裂纹抑制研究 ..... 庞铭, 谭雯丹 211402

基于激光清洗的 AH32 钢的电化学腐蚀性能 ..... 李华婷, 周建忠, 孙奇, 等 211403

- 双光互注入半导体激光器混沌同步通信研究 ..... 孙巍阳, 胡宝洁, 王航 211404

• 机器视觉 •

- 基于卷积神经网络的教室人脸检测算法 ..... 王萌, 苏寒松, 刘高华, 等 211501

- 基于高斯混合模型和卷积神经网络的视频烟雾检测 李鹏, 张炎 211502

- 基于卷积神经网络的足跟着地事件检测算法 ..... 李卓容, 王凯旋, 何欣龙, 等 211503

- 基于边缘加权的跨尺度局部立体匹配算法 ..... 程德强, 庄煖东, 于文洁, 等 211504

- 基于特征金字塔网络的改进算法 ..... 陈景明, 金杰, 王伟锋 211505

- 准确标定摄像机的混合粒子群优化方法 ..... 雷阳, 张宏立, 王聪 211506

- 基于 ORB 特征的视觉里程计算法优化 ..... 林付春, 刘宇红, 周进凡, 等 211507

### • 材料 •

- 基于 Ce: YAG 荧光晶体的高流明密度光源 ..... 潘富林, 曹顿华, 郭向朝, 等 211601

• 光学设计与制造 •

- 光盘纹扩散板的微结构设计与制备 ..... 刘晓静, 徐智谋, 宗国平, 等 212201

- 基于电光调制的注入锁定拉曼激光相位噪声实验研究(封面文章) ..... 黄敏, 章显, 黄凯凯, 等 212202

## • 光学器件 •

- 便携式光源、光功率计系统开发与设计 张翔，陈涛，金操帆，等 212301

· 量子光学 ·

- 基于交叉克尔非线性和金刚石氮空穴色心-微环谐振腔的 W 态向 GHZ 态的转换 ..... 冯帅, 王鑫安, 张勇 212701

- 利用光放大器改进自参考连续变量量子密钥分发 ..... 龚峰, 杨鑫, 王天一 212702

- 量子密钥分发光网络密钥池构建方法 ..... 张梓平, 刘国军, 董凯, 等 212703

• 摄影与传感器 •

- 基于距离反比插值的激光雷达点云贪婪三角网构建及应用 ..... 焦嵩鸣, 武晓凯, 郑晓坤, 等 212801

- 基于聚类降维和视觉注意机制的高光谱影像分类 ..... 曾朝平, 塔丽君, 张建辰 212802

• 光谱学 •

- 基于石英增强光声光谱的 H<sub>2</sub>S 痕量气体检测研究 ..... 张蕾蕾, 刘家祥, 朱之贞, 等 213001

本刊电子版彩色效果请详见中国光学期刊网 [www.opticsjournal.net](http://www.opticsjournal.net)

# Laser & Optoelectronics Progress

Vol.56, No.21 (Series No.656) November 2019

## CONTENTS

### • Atmospheric Optics and Oceanic Optics •

Performance Analysis of Multi-Aperture Coherent Optical Receiver for Satellite-to-Ground Downlink

..... *Zhang Xiaoyu, Cui Sheng, Liu Deming, et al.* 21101

### • Fiber Optics and Optical Communications •

Modeling and Optimization Algorithm for Virtual Network Function Deployment in Inter-Datacenter Elastic Optical Networks

..... *Xuan Hejun, Wei Shiwei, Guo Huaping, et al.* 210601

Symmetry Recovery-Based ACO-OFDM Performance in LED Nonlinear Channel

..... *Liu Xiaoshuang, Li Jianfeng, Li Jianke, et al.* 210603

### • Image Processing •

Deblurring Model of Image Multi-Scale Dense Network ..... *Song Haoze, Wu Xiaojun* 211001

Algorithm for Detecting Straight Line Segments in Color Images

..... *Liu Yuqing, Zhong Baojiang, Zheng Hangjia* 211002

Surface Crack Detection of Ceramic Tile Based on Sliding Filter and Automatic Region Growth

..... *Li Xiaolei, Zeng Shuguang, Zheng Sheng, et al.* 211003

Deep Learning Model for Point Cloud Classification Based on Graph Convolutional Network

..... *Wang Xujiao, Ma Jie, Wang Nannan, et al.* 211004

Remote Sensing Image S-Type Fusion/Stitching via Low-Error Matching Strategy

..... *Gao Xiaoqian, Yang Fan, Fan Hairui, et al.* 211005

Damage Detection of Metal Parts by Combining Information Entropy and Low-Rank Tensor Analysis

..... *Yang Peng, Liu Deer, Li Ruixue, et al.* 211006

Super-Resolution Reconstruction of Hyperspectral Images Based on Tensor Truncated Nuclear Norm

..... *Wang Yizhuo, Zeng Haijin, Zhao Jiajia, et al.* 211007

### • Imaging Systems •

Application of Total Variation Minimization Algorithm Based on Beetle Antennae Search on Computed Tomography Interior Reconstruction

..... *Kong Huihua, Sun Yingbo, Zhang Yanxia* 211101

Scene-Adaptive Parallax Adjustment for Parallel Stereoscopic Imaging ..... *Long Guiling, Li Qichang* 211102

### • Integrated Optics •

Constrained Link Routing Algorithm for Dilated Benes Optical Switching Chips Under Non-Full Configuration

..... *Zhang Jinhua, Wu Baojian, Qiu Kun* 211301

### • Lasers and Laser Optics •

Laser Cleaning Technology of Oxide Layer on Titanium Rolled Plate

..... *Jia Baoshen, Qu Hongxing, Tang Hongping, et al.* 211401

Microscopic Characteristic Analysis and Crack Suppression of Laser-Surface Remelting of Vermicular-Graphite Cast-Iron Valve Seats

..... *Pang Ming, Tan Wenda* 211402

Electrochemical Corrosion Properties of AH32 Steel via Laser Cleaning

..... *Li Huating, Zhou Jianzhong, Sun Qi, et al.* 211403

Chaos Synchronization Communication Based on Dual-Path Mutual Coupling Semiconductor Lasers

..... *Sun Weiyang, Hu Baojie, Wang Hang* 211404

## • Machine Vision •

- Classroom Face Detection Algorithm Based on Convolutional Neural Network ..... Wang Meng , Su Hansong , Liu Gaohua , et al . 211501
- Video Smoke Detection Based on Gaussian Mixture Model and Convolutional Neural Network ..... Li Peng , Zhang Yan 211502
- Heel-Strike Event Detection Algorithm Based on Convolutional Neural Networks ..... Li Zhuorong , Wang Kaixuan , He Xinlong , et al . 211503
- Cross-Scale Local Stereo Matching Based on Edge Weighting ..... Cheng Deqiang , Zhuang Huandong , Yu Wenjie , et al . 211504
- Improved Algorithm Based on Feature Pyramid Networks ..... Chen Jingming , Jin Jie , Wang Weifeng 211505
- Hybrid Particle-Swarm-Optimization Method for Accurately Calibrating Cameras ..... Lei Yang , Zhang Hongli , Wang Cong 211506
- Optimization of Visual Odometry Algorithm Based on ORB Feature ..... Lin Fuchun , Liu Yuhong , Zhou Jinfan , et al . 211507

## • Materials •

- High-Lumen-Density Light Source Based on Ce : YAG Fluorescent Crystal ..... Pan Fulin , Cao Dunhua , Guo Xiangchao , et al . 211601

## • Optical Design and Fabrication •

- Microstructure Design and Preparation of CD Pattern Diffuser ..... Liu Xiaojing , Xu Zhimou , Zong Guoping , et al . 212201
- Experimental Study on Raman Laser Phase Noise of Injection Locking Based on Electro-Optic Modulation (Cover Paper) ..... Huang Min , Zhang Xian , Huang Kaikai , et al . 212202

## • Optical Devices •

- Design and Development of Portable Light Source and Power Meter System ..... Zhang Xiang , Chen Tao , Jin Caofan , et al . 212301

## • Quantum Optics •

- Converting W-State into GHZ-State Based on Cross-Kerr Nonlinearity and Coupling Systems of Nitrogen-Vacancy Color Center in Diamond and Microtoroidal Resonator ..... Feng Shuai , Wang Taian , Zhang Yong 212701
- Improvement of Self-Referenced Continuous Variable Quantum Key Distribution Using Optical Amplifier ..... Gong Feng , Yang Xin , Wang Tianyi 212702

- Key Pool Construction of Quantum Key Distribution Optical Network ..... Zhang Ziping , Liu Guojun , Dong Kai , et al . 212703

## • Remote Sensing and Sensors •

- Construction and Application of Greedy Triangulation for Lidar Point-Cloud Data Based on Inverse-Distance-Weighted Interpolation ..... Jiao Songming , Wu Xiaokai , Zheng Xiaokun , et al . 212801
- Hyperspectral Image Classification Based on Clustering Dimensionality Reduction and Visual Attention Mechanism ..... Zeng Chaoping , Ju Lijun , Zhang Jianchen 212802

## • Spectroscopy •

- Detection of Trace Sulfur Dioxide Gas Using Quartz-Enhanced Photoacoustic Spectroscopy ..... Zhang Leilei , Liu Jiaxiang , Zhu Zhizhen , et al . 211301



# HPLSE 2020

Call for Papers

## Program Committee

**Gonçalo Figueira**, Universidade de Lisboa, Portugal

**Leonida A. Gizzi**, National Institute of Optics, CNR, Italy

**Joachim Hein**, Friedrich-Schiller-Universität Jena, Germany

**Lili Hu**, SIOM, CAS, China

**Kyung-Han Hong**, Massachusetts Institute of Technology, USA

**Shigeo Kawata**, Utsunomiya University, Japan

**Ryosuke Kodama**, Osaka University, Japan

**Hong Jin Kong**, KAIST, South Korea

**Gattamraju Ravindra Kumar**, Tata Institute of Fundamental Research, India

**Anle Lei**, Shanghai Institute of Laser Plasma, CAEP, China

**Yuxin Leng**, SIOM, CAS, China

**Yutong Li**, Institute of Physics, CAS, China

**Xiaoyan Liang**, SIOM, CAS, China

**Tomas Mocek**, Institute of Physics ASCR v.v.i, Czech Republic

**David Neely**, Central Laser Facility, STFC Rutherford Appleton Laboratory, UK

**Karoly Osvay**, ELI-ALPS, Hungary

**Baifei Shen**, Shanghai Normal University, China

**Zhengming Sheng**, University of Strathclyde, UK / Shanghai Jiao Tong University, China

**Hideaki Takabe**, Institute of Radiation Physics, Helmholtz Zentrum Dresden Rossendorf, Germany

**Kazuo A. Tanaka**, ELI-NP, Romania

**Michael Tatarakis**, Technological Education Institute of Crete, Greece

**Yingying Wang**, Beijing University of Technology, China

**Stefan Weber**, ELI-Beamlines, Czech Republic

**Jiping Zou**, LULI, France

**Jonathan D. Zuegel**, University of Rochester, USA

## Invited Speakers

**Philip Bradford**, University of York, UK

**Jake Bromage**, Laboratory for Laser Energetics, University of Rochester, USA

**Nathalie Blanchot**, CEA, France

**Gonçalo Figueira**, Universidade de Lisboa, Portugal

**Leonida A. Gizzi**, National Institute of Optics, CNR, Italy

**Yanjun Gu**, ELI-Beamlines, Czech Republic

**Joachim Hein**, Friedrich-Schiller-Universität Jena, Germany

**Minglie Hu**, Tianjin University, China

**Jiro Itatani**, Institute for Solid State Physics, University of Tokyo, Japan

**Franz Kärtner**, Center for Free-Electron Laser Science (CFEL) at DESY / University of Hamburg, Germany

**Shigeo Kawata**, Utsunomiya University, Japan

**Hiromitsu Kiriyama**, National Institute for Quantum and Radiological Science and Technology, Japan

**Ryosuke Kodama**, Osaka University, Japan

**Jörg Körner**, Friedrich-Schiller University, Germany

**M. Krishnamurthy**, Tata Institute of Fundamental Research, India

**G. Ravindra Kumar**, Tata Institute of Fundamental Research, India

**Tim Kunze**, Fraunhofer-Institut für Werkstoff und Strahltechnik, Germany

**Yutong Li**, Institute of Physics, CAS, China

**Xiaoyan Liang**, SIOM, CAS, China

**Guoqian Liao**, Central Laser Facility, STFC Rutherford Appleton Laboratory, UK

**Philippe Martin**, Commissariat à l'Energie Atomique / IRAMIS / SPAM, France

**Katsumi Midorikawa**, RIKEN Center for Advanced Photonics, Japan

**David Neely**, Central Laser Facility, STFC Rutherford Appleton Laboratory, UK

**Frank Nürnberg**, Heraeus, Germany

**Thomas Oksenhendler**, iTEOX, France

**Karoly Osvay**, ELI-ALPS, Hungary

**Roy Philippe**, Xlim CNRS, University de Limoges, France

**Irene Prencipe**, Helmholtz-Zentrum Dresden-Rossendorf, Germany

**Jonathan H. V. Price**, University of Southampton, UK

**Lieja Qian**, Shanghai Jiao Tong University, China

**Fabien Quéré**, IRAMIS-LIDYL, CEA Saclay, France

**Baifei Shen**, Shanghai Normal University, China

**Zhengming Sheng**, University of Strathclyde, UK / Shanghai Jiao Tong University, China

**Christopher Spindloe**, STFC Rutherford Appleton Laboratory, UK

**Takunori Taira**, Laser-Driven Electron-Acceleration Technology Group, RIKEN SPring-8 Center, Japan

**Vladimir Tikhonchuk**, University of Bordeaux, France

**Csaba Toth**, BELLA Center at Lawrence Berkeley National Laboratory, USA

**Ken-ichi Ueda**, University of Electro-Communications, Japan

**Yingying Wang**, Beijing University of Technology, China

**Stefan Weber**, ELI-Beamlines, Czech Republic

**Yong Yang**, Shanghai Institute of Ceramics, CAS, China

**Michalis N. Zervas**, University of Southampton, UK

**Yanqing Zheng**, Shanghai Institute of Ceramics, CAS, China

**Pu Zhou**, National University of Defense Technology, China

**Arie Zigler**, Hebrew University of Jerusalem, Israel

**Jiping Zou**, LULI, France

**More will join us!**