

光学学报

ACTA OPTICA SINICA

第37卷 VOL. 37 第3期 NO. 3 [总第420期]

2017.3

“超分辨成像”专题

ISSN 0253-2239 03>



9 770253 223174

中国科学院上海光学精密机械研究所 主办
中国光学学会

光 学 学 报

第 37 卷 第 3 期 2017 年 3 月

(总第 420 期)

目 次

· “超分辨成像”专题 ·

专题前言	雷 铭, 孙育杰, 李 辉	0318000
结构光照明显微中的超分辨图像重建研究	周 兴, 但 旦, 千 佳 等	0318001
结构导向的可逆光激活绿色荧光蛋白探针的研制	王 盛, 陈轩泽, 常 蕾 等	0318002
基于激光干涉的结构光照明超分辨荧光显微镜系统	文 刚, 李思颀, 杨西斌 等	0318003
超分辨定位成像中的像差表征和校正	赵泽宇, 张肇宁, 黄振立	0318004
随机光学重构显微成像技术及其应用	杨 洁, 田翠萍, 钟桂生	0318005
自外而内的单幅图像超分辨率复原算法	郑向涛, 袁 媛, 卢孝强	0318006
光片荧光显微成像	杨豫龙, 宗伟建, 吴润龙 等	0318007
荧光蛋白与超分辨显微成像	彭鼎铭, 付志飞, 徐平勇	0318008
受激发射损耗显微中空芯损耗光的光强分布优化研究	蔡亚楠, 汪召军, 梁言生 等	0318009
多色单分子定位超分辨显微成像术	潘雷霆, 胡 芬, 张心正 等	0318010
改进的基于卷积神经网络的图像超分辨率算法	肖进胜, 刘恩雨, 朱 力 等	0318011
一种监控视频人脸图像超分辨技术	王嫣然, 罗宇豪, 尹 东	0318012
结合去卷积的艾里光束片状光显微成像研究	徐 豪, 张运海, 张 欣 等	0318013

· 大气与海洋光学 ·

我国西北地区气溶胶垂直分布特征分析	秦武斌, 李学彬, 鲁先洋 等	0301001
-------------------------	-----------------	---------

· 相干与统计光学 ·

基于标志点匹配的散斑图像变形初值估计法	张红颖, 于之靖	0303001
---------------------------	----------	---------

· 探测器 ·

机载红外搜索跟踪系统的最佳阈噪比	寇人可, 王海晏, 吴学铭	0304001
------------------------	---------------	---------

· 衍射与光栅 ·

全息光栅拼接系统中的像差补偿法	钱国林, 吴建宏, 李朝明 等	0305001
-----------------------	-----------------	---------

· 光纤光学与光通信 ·

基于多芯光纤的三模复用/解复用器的设计	涂佳静, 张 欢, 李 晗 等	0306001
水银柱活塞差动式光纤布拉格光栅倾角传感器	谢 涛, 王 行, 李 川 等	0306002
分光比可调的光子晶体光纤耦合器	王兆芳, 卜胜利, 苏德龙 等	0306003
带宽为 56.978 GHz 光拍频信号实时测量	陶世兴, 邓向阳, 李建中 等	0306004
微纳光纤耦合器无标生物传感特性	汪 海, 周文超, 李凯伟 等	0306005
用于长距离光学频率传递链路的双向掺铒光纤放大器的优化设计	臧 琦, 邓 雪, 刘 杰 等	0306006

• 仪器,测量与计量 •

图像式光电编码器高分辨力细分算法及误差分析	于 海,万秋华,赵长海 等	0312001
针孔式点衍射干涉仪的无镜成像方法	黄 磊,高志山,杨忠明 等	0312002
大气同步校正仪的滤光片筛选方法与精度验证实验研究	康 晴,袁银麟,李健军 等	0312003
水转印数字散斑场用于人体颈动脉全场测量	陈振宁,邵新星,吴家林 等	0312004

• 激光器与激光光学 •

隧道结级联量子阱锁模激光器	刘 震,王嘉琪,于红艳 等	0314001
3 kW 射频板条 CO ₂ 激光器多电极放电均匀性与阻抗匹配性	王 振,彭 浩,王 炜 等	0314002

• 机器视觉 •

基于激光扫描的鱼眼相机三维标定方法	程梦娇,申夏晶,肖江剑 等	0315001
基于自适应卷积特征的目标跟踪算法	蔡玉柱,杨德东,毛 宁 等	0315002
一种基于最佳相似点对的稳健模板匹配算法	王 刚,孙晓亮,尚 洋 等	0315003

• 光学设计与制造 •

分区域多焦点叠加方形光斑均匀聚光菲涅耳透镜设计	王进军,王 侠,宁 铎	0322001
长景深阵列光学组件缺陷检测系统设计	刘钦晓,王 方,王渊承	0322002
光刻物镜热像差主动补偿系统设计与实验	东立剑,崔庆龙,李朋志 等	0322003

• 光学器件 •

CMOS 图像传感器校准用可调光源	蔡锦达,刘 倩,邹 亿 等	0323001
打破光子晶体非线性 Fano 腔结构对称性实现单向传输	胡金凤,刘 彬,梁红勤 等	0323002

• 物理光学 •

弹光调制高灵敏测量晶体电光系数	王 爽,王志斌,张敏娟 等	0326001
真空喷气靶太赫兹辐射源椭圆度特性	李 娜,白 亚,刘 鹏	0326002

• 遥感与传感器 •

基于反射点源的高分辨率光学卫星传感器在轨辐射定标方法	徐伟伟,张黎明,陈洪耀 等	0328001
基于暗原色先验的遥感图像去雾方法	代书博,徐 伟,朴永杰 等	0328002
TDI-CCD 全景式航空相机对地目标定位的算法	杜言鲁,丁亚林,许永森 等	0328003

• 散射 •

均匀椭球形液滴三阶和四阶彩虹条纹特征	管露露,于海涛,沈建琪	0329001
--------------------------	-------------	---------

• 薄膜 •

基于柔性显示器件的氧化铝介电层室温制备	姚日晖,郑泽科,曾 勇 等	0331001
---------------------------	---------------	---------

• 超快光学 •

GW/cm ² 量级飞秒脉冲倍频的宽谱谐波产生	黄章超,张文定,林洪沂 等	0332001
--	---------------	---------

• 视觉与色彩 •

基于均方根误差和相关系数评价人眼像差对视网膜像质的影响	杨彦荣,戴 云	0333001
-----------------------------------	---------	---------



本文电子版彩色效果请详见中国光学期刊网 www.opticsjournal.net

ACTA OPTICA SINICA

Vol.37, No.3 (Series No.420) March 2017

CONTENTS

Special Issue on Super-Resolution Imaging

Introduction for Special Issue	Lei Ming, Sun Yujie, Li Hui	0318000
Super-Resolution Reconstruction Theory in Structured Illumination Microscopy	Zhou Xing, Dan Dan, Qian Jia et al.	0318001
Structure-Guided Development of Reversibly Photoswitchable Green Fluorescent Proteins Probe	Wang Sheng, Chen Xuanze, Chang Lei et al.	0318002
Super-Resolution Fluorescence Microscopy System by Structured Light Illumination Based on Laser Interference	Wen Gang, Li Simin, Yang Xibin et al.	0318003
Aberration Characterization and Correction in Super-Resolution Localization Microscopy	Zhao Zeyu, Zhang Zhaoning, Huang Zhenli	0318004
Stochastic Optical Reconstruction Microscopy Imaging Technique and Application	Yang Jie, Tian Cuiping, Zhong Guisheng	0318005
Single Image Super-Resolution Restoration Algorithm from External Example to Internal Self-Similarity	Zheng Xiangtao, Yuan Yuan, Lu Xiaoqiang	0318006
Light-Sheet Fluorescence Microscopy	Yang Yulong, Zong Weijian, Wu Runlong et al.	0318007
Fluorescent Proteins and Super-Resolution Microscopy	Peng Dingming, Fu Zhifei, Xu Pingyong	0318008
Optimization of the Doughnut-Shaped Depletion Spot in Stimulated Emission Depletion Microscopy	Cai Yanan, Wang Zhaojun, Liang Yansheng et al.	0318009
Multicolor Single-Molecule Localization Super-Resolution Microscopy	Pan Leiting, Hu Fen, Zhang Xinzhen et al.	0318010
Improved Image Super-Resolution Algorithm Based on Convolutional Neural Network	Xiao Jinsheng, Liu Enyu, Zhu Li et al.	0318011
A Super Resolution Technology of Face Image for Surveillance Video	Wang Yanran, Luo Yuhao, Yin Dong	0318012
Airy Beam Light Sheet Microscopy with Deconvolution	Xu Hao, Zhang Yunhai, Zhang Xin et al.	0318013

Atmospheric and Ocean Optics

Aerosol Vertical Distribution Characteristics in Northwest China	Qin Wubin, Li Xuebin, Lu Xianyang et al.	0301001
--	--	---------

Coherence and Statistical Optics

Initial Displacement Estimation Method for Speckle Image Based on Marker Matching	Zhang Hongying, Yu Zhijiang	0303001
---	-----------------------------	---------

Detectors

Optimum Threshold Noise Ratio of Airborne Infrared Search and Track System	Kou Renke, Wang Haiyan, Wu Xueming	0304001
--	------------------------------------	---------

Diffraction and Gratings

Compensational Method for Aberration in Mosaic System of Holographic Grating	Qian Guolin, Wu Jianhong, Li Chaoming et al.	0305001
--	--	---------

Fiber Optics and Optical Communications

Design of Multi-Core Fiber Based Three-Mode Multiplexer/Demultiplexer	Tu Jiajing, Zhang Huan, Li Han et al.	0306001
Fiber Bragg Grating Differential Tilt Sensor Based on Mercury Column Piston Structure	Xie Tao, Wang Xing, Li Chuan et al.	0306002
Coupling-Ratio-Tunable Photonic Crystal Fiber Coupler	Wang Zhaofang, Pu Shengli, Su Delong et al.	0306003
Real-Time Measurement of Light Beat-Frequency Signal with Bandwidth of 56.978 GHz	Tao Shixing, Deng Xiangyang, Li Jianzhong et al.	0306004
Label-Free Biosensing Characteristics of Micro/Nano-Fiber Coupler	Wang Hai, Zhou Wenchao, Li Kaiwei et al.	0306005
Optimization Design for Bidirectional Er-Doped Fiber Amplifier Used in Long Distance Optical Frequency Transfer Link	Zang Qi, Deng Xue, Liu Jie et al.	0306006

Instrumentation, Measurement and Metrology

A High-Resolution Subdivision Algorithm for Photographic Encoders and Its Error Analysis	Yu Hai, Wan Qiuhua, Zhao Changhai et al.	0312001
--	--	---------

Lensless Imaging Method for Pinhole Type Point Diffraction Interferometer	Huang Lei, Gao Zhishan, Yang Zhongming et al. 0312002
Filtration and Precision Verification of Optical Filters on Atmospheric Synchronous Corrector	Kang Qing, Yuan Yinlin, Li Jianjun et al. 0312003
Full-Field Deformation Measurement of Human Carotid Artery Based on Water Transfer Printing Speckle Patterns	Chen Zhenning, Shao Xinxing, Wu Jialin et al. 0312004
Lasers and Laser Optics	
Tunnel Junction Cascade Quantum Well Mode-Locked Laser	Liu Zhen, Wang Jiaqi, Yu Hongyan et al. 0314001
Discharge Uniformity and Impedance Matching of Multi-Group Electrodes for 3 kW Radio Frequency Slab CO ₂ Lasers	Wang Zhen, Peng Hao, Wang Wei et al. 0314002
Machine Vision	
Three-Dimensional Calibration of Fisheye Camera Based on Laser Scanner	Cheng Mengjiao, Shen Xiajing, Xiao Jiangjian et al. 0315001
Visual Tracking Algorithm Based on Adaptive Convolutional Features	Cai Yuzhu, Yang Dedong, Mao Ning et al. 0315002
A Robust Template Matching Algorithm Based on Best-Buddies Similarity	Wang Gang, Sun Xiaoliang, Shang Yang et al. 0315003
Optical Design and Fabrication	
Design of Fresnel Lens with Square Spot Uniform Concentration of Sub-Region Multi-Focus Superposition	Wang Jinjun, Wang Xia, Ning Duo 0322001
Design of Long Depth of Field Array Optical Components Defect Detection System	Liu Qinxiao, Wang Fang, Wang Yuancheng 0322002
Design and Experiment of Active Compensation System for Thermal Aberration of Lithographic Lens	Dong Lijian, Cui Qinglong, Li Pengzhi et al. 0322003
Optical Devices	
Design of Tunable Light Source for Calibration of CMOS Image Sensor	Cai Jinda, Liu Qian, Zou Yi et al. 0323001
Achieving Nonreciprocal Transmission by Breaking Symmetry of Nonlinear Fano Cavity Structure in Photonic Crystals	Hu Jinfeng, Liu Bin, Liang Hongqin et al. 0323002
Physical Optics	
High Sensitive Measurement of Crystal Electro-Optic Coefficients Based on Photo-Elastic Modulation	Wang Shuang, Wang Zhibin, Zhang Minjuan et al. 0326001
Ellipticity Characteristic of Terahertz Radiation Source Generated from Vacuum Jet Target	Li Na, Bai Ya, Liu Peng 0326002
Remote Sensing and Sensors	
In-Flight Radiometric Calibration of High Resolution Optical Satellite Sensor Using Reflected Point Sources	Xu Weiwei, Zhang Liming, Chen Hongyao et al. 0328001
Remote Sensing Image Defogging Based on Dark Channel Prior	Dai Shubo, Xu Wei, Piao Yongjie et al. 0328002
Geo-Location Algorithm for TDI-CCD Aerial Panoramic Camera	Du Yanlu, Ding Yalin, Xu Yongsan et al. 0328003
Scattering	
Third- and Fourth-Order Rainbow Fringe Characteristics of Homogeneous Ellipsoid Droplets	Guan Lulu, Yu Haitao, Shen Jianqi 0329001
Thin Films	
Preparation of Al ₂ O ₃ Dielectric Layers at Room Temperature Based on Flexible Displays	Yao Rihui, Zheng Zeke, Zeng Yong et al. 0331001
Ultrafast Optics	
Broadband Second Harmonic Generation of Femtosecond Pulses at Magnitude of GW/cm ²	Huang Zhangchao, Zhang Wending, Lin Hongyi et al. 0332001
Vision and Color	
Evaluation of the Effect on Eye Aberration on Retinal Imaging Quality Based on the Root Mean Square Error and Correlation Coefficient	Yang Yanrong, Dai Yun 0333001



快速压电偏摆镜



- 压电陶瓷驱动，超快响应速度
- θ_x , θ_y 两轴并联偏摆运动
- 高运动精度，典型运动分辨率可至 $0.05 \mu\text{rad}$
- 可根据用户需求定制适合各种口径的反射镜
- 可根据用户需求定制合适的控制器

普爱纳米位移技术（上海）有限公司

上海市龙东大道3000号7号楼106

电话：021-5187 9298

传真：021-6879 5909

www.pi-china.cn

全国服务热线：4009 208 303

万方数据



关注微信，获取更多产品及活动资讯