

光 学 学 报

GUANGXUE XUEBAO

(半月刊, 1981年1月创刊)

第40卷 第22期 (总第475期) 2020年11月25日

主管单位 中国科学技术协会

主办单位 中国科学院上海光学精密机械研究所

中国光学学会

主 编 龚 旗 煌

编辑出版 《中国激光》杂志社有限公司

地 址 上海市嘉定区清河路390号, 邮编201800

电 话 021-69916837

电子邮箱 aos@siom.ac.cn

网 址 <http://aos.opticsjournal.net>

印 刷 苏州彩易达包装制品有限公司

发行范围 公开

国内发行 中国邮政集团公司上海市分公司

国内订阅 中国邮政集团公司

国外发行 中国国际图书贸易集团有限公司

国内邮发代号 4-293

Acta Optica Sinica

(Semimonthly, First Published in 1981)

Vol. 40, No. 22 (Series No. 475) November 25, 2020

Managed by China Association for Science and Technology

Sponsored by Shanghai Institute of Optics and Fine Mechanics,
Chinese Academy of Sciences
Chinese Optical Society

Editor-in-Chief Gong Qihuang

Edited and Published by
Chinese Laser Press

Address No. 390, Qinghe Rd., Jiading, Shanghai 201800

Tel. 021-69916837

E-mail aos@siom.ac.cn

Website <http://aos.opticsjournal.net>

Printed by Suzhou Caiyida Packing Products Co., Ltd.

Distributed by Shanghai Branch of China Post Group

Domestic China Post Group

Foreign China International Book Trading Corporation



EI核心期刊

ESCI, SCOPUS, CA, INSPEC, AJ, CSCD等收录

“中国科技期刊卓越行动计划”入选期刊

中国百强报刊

百种中国杰出学术期刊

中国精品科技期刊

中国国际影响力优秀学术期刊

华东地区优秀期刊

中文核心期刊

中国科技核心期刊



《中国激光》杂志社

官方微信



《光学学报》

官方网站



责任编辑: 何卓铭(021-69916837)

广 告: 朱俊刚(021-80198330)

发 行: 陈 青(021-69918691)

中国标准连续出版物号: ISSN 0253 - 2239
CN 31 - 1252/O4

定价: 120 元/册

《光学学报》第七届编委会
(2019-2021)

主 编

龚旗煌

执行主编

赵建林

副 主 编

刘文清 邵建达

编 委 (按姓氏拼音排序)

陈 烽	陈树琪	陈险峰	崔铁军
房建成	韩申生	胡伟达	靳 伟
李宝军	李天初	李学龙	李朝晖
刘 辉	刘铁根	刘 旭	刘雪明
刘运全	宁永强	牛智川	裴 丽
屈军乐	饶瑞中	沈德元	孙洪波
谭久彬	陶绪堂	王雪华	王涌天
王占山	魏志义	忻向军	徐红星
徐立军	严 卫	杨中民	曾和平
张广军	张天才	张卫平	张旭革
张志刚	赵振堂	周 磊	朱日宏
朱亦鸣			

Acta Optica Sinica

Vol. 40, No. 22 (Series No. 475) November 2020

CONTENTS

Atmospheric Optics and Oceanic Optics

Simulation Research on Sky Polarization Characteristics Under Complicated Marine Environment
..... Zhang Su, Zhan Juntong, Fu Qiang, et al. 2201001

Diffraction and Gratings

Influence of Continuous Phase Plate on Backscattered Transmission Characteristics of SBS Laser Light at Target
..... Xu Shouying, Zhou Shenlei, Gong Yufeng, et al. 2205001

Fiber Optics and Optical Communications

Influence of Aberration on Far-Field Distribution of Laser Beam Emitted by Space Laser Communication System
..... Jiang Chengzhi, Zhang Wenrui, Wang Bo, et al. 2206001

Design and Inscription of Optical Filters Based on Multi-Phase-Shifted Fiber Bragg Gratings
..... Wang Di, Ying Kang, Li Wenping, et al. 2206002

Design of Laser Communication Optical System with Microlens Array Based on 3×3 Optical Matrix
..... An Yan, Dong Keyan, Li Xiang, et al. 2206003

Effect of Pointing Error on Adaptive Subcarrier Modulation Performance in Turbulent Channel
..... Chen Dan, Lu Mengmeng, Liu Yanrong 2206004

Image Processing

Improved Image Artifacts Suppression Method for Neutron External CT (Cover Paper)
..... Lin Qiang, Yang Min, Zhang Xiaomin, et al. 2210001

Low-Dose CT Denoising Algorithm Based on Improved Cycle GAN Zhu Siqu, Wang Jue, Cai Yufang 2210002

Regional Backlight Brightness Extraction Algorithm Based on Deep Learning Zhang Tao, Zeng Qin, Du Wenli, et al. 2210003

Imaging Systems

Line-Structured Light Imaging Method of Rail Profile Based on Polarization Fusion
..... Wang Le, Fang Yue, Wang Shengchun, et al. 2211001

Orthogonal Translation Computed Laminography Tian Zhongjian, Yu Haijun, Wang Linbo, et al. 2211002

Single-Shot Video of Three-Dimensional Moving Objects Through Scattering Layers
..... Shi Yaoyao, Liu Youwen, Sheng Wei, et al. 2211003

Instrumentation, Measurement and Metrology

Design of Large-Aperture Primary Mirror Based on Hybrid Optimization Method Sun Qi, Gong Xuefei 2212001

Design of Primary-Mirror Position Control System in Large Telescope Guo Pengfei, Li Yuxia, Li Jianfeng, et al. 2212002

Spaceborne Long-Distance Tracking Method Based on Adaptive Vibration Suppression
..... Jia Yuandong, Qiang Jia, Zhang Liang, et al. 2212003

Crack Diagnosis Method of Wind Turbine Blade Based on Convolution Neural Network with 3D Vibration Information Fusion
..... Guo Yingfu, Quan Weiming, Wang Wenyun, et al. 2212004

Quantum Vacuum Measurement Based on Fabry-Perot Laser Resonant Cavity Jia Wenjie, Xi Zhenhua, Fan Dong, et al. 2212005

Lasers and Laser Optics

Study on the Saturable Absorption Characteristics of $\text{Co}^{2+}:\text{MgAl}_2\text{O}_4$ with Different Orientations
..... Fang Zijun, Hui Yongling, Li Guotai, et al. 2214001

Automatic Laser Frequency Stabilization System for Transportable ^{87}Rb Fountain Clock
..... Ji Jingwei, Cheng Henan, Zhang Zhen, et al. 2214002

Materials

Porous Silica Antireflective Film at Ultraviolet Laser Wavelength (266 nm) Shen Bin, Xiong Huai, Zhang Xu, et al. 2216001

Nonlinear Optics

Spectral Characteristics of Chirped Solitons in Saturable Inhomogeneous Fiber Xue Ruirong, Jia Heping, Yang Rongcao 2219001

Quantum Optics

Theoretical and Experimental Studies on Photon Statistics Properties of Squeezed Light Based on modified-HBT Interferometer
..... Han Yashuai, Wu Daohua, Guo Wenmei 2227001

Remote Sensing and Sensors

On-Orbit Modulation Transfer Function Estimation of Optical Satellite Camera Xu Weiwei, Zhang Liming, Yang Baoyun, et al. 2228001

Spectroscopy

Intelligent Evaluation Method of Grottoes Surface Weathering Based on Multispectral Imaging and Random Forest Algorithm
..... Cao Chipeng, Wang Huiqin, Wang Ke, et al. 2230001

fNIRS Signal Motion Correction Algorithm Based on Mathematical Morphology and Median Filter
..... Zhao Jie, Qiao Jirimitu, Ding Xuetong, et al. 2230002