

光电工程 (Guangdian Gongcheng)

月刊 1974 年创刊
第 47 卷 第 4 期 (总第 365 期)
2020 年 4 月

主管单位: 中国科学院
主办单位: 中国科学院光电技术研究所
中国光学学会
主 编: 罗先刚
编辑出版: 《光电工程》编辑部
(四川省成都市双流区 350 信箱, 邮编 610209)
电 话: 028-85100579
电子邮箱: oee@ioe.ac.cn
网 址: <http://www.ojournal.org>
印 刷: 四川玖艺呈现印刷有限公司
国内发行: 四川省报刊发行局
(邮发代号: 62-296)
国外发行: 中国国际图书贸易集团有限公司
(发行代号: M7114)
国内统一刊号: CN 51-1346/O4
国际标准刊号: ISSN 1003-501X

Opto-Electronic Engineering

(Monthly, since 1974)
Volume 47, Issue 4 April 2020

Managed by
Chinese Academy of Sciences
Sponsored by
Institute of Optics and Electronics,
Chinese Academy of Sciences
The Chinese Optical Society
Editor-in-Chief Luo Xiangang
Edited and Published by
Editorial Office of *Opto-Electronic
Engineering*, P. O. Box 350, Shuangliu,
Chengdu 610209, P.R.China
Tel +86-28-85100579
E-mail oee@ioe.ac.cn
Website <http://www.ojournal.org>
Printed by Sichuan Joy Art Printing Co., Ltd.
Domestic Distributed by
Sichuan Provincial Newspaper &
Periodical Subscription and Distribution
Bureau (Code: 62-296)
Overseas Distributed by
China International Book Trading
Corporation (Code: M7114)

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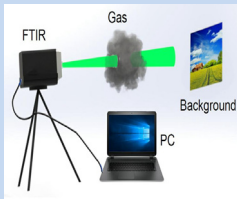
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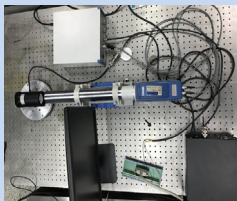
Optical gas detection: key technologies and applications review

190280

Shen Ying, Shao Kunming, Wu Jing, Huang Feng, Guo Yuze

The theoretical foundation of optical gas detection technology was first introduced, and then the working principles and applications of various optical detection technologies for typical gases according to active and passive detection were reviewed. Finally, the future development trend was prospected.

Article



Modeling and inverse compensation control of hysteresis nonlinear characteristics of piezoelectric steering mirror

180654

Liu Xin, Li Xinyang, Du Rui

Hysteresis operator was introduced and Bayesian regularization training algorithm was used to train BP neural network to construct hysteresis model of piezoelectric steering mirror. Then experimental study was conducted on a piezoelectric steering mirror.

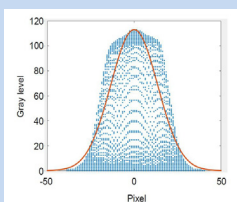


Research and application of all-fiber optic current transformer based on optical reciprocity loop

180671

Hao Zhaorong, Wang Qiang, Da Jianpu, Luo Sunan, Wang Yao, Zhang Guangtai, Li Zhao

Aiming to the problems of traditional active electromagnetic transformer such as easy magnetic saturation, poor stability and anti-interference ability, etc., the optical fiber current transformer was designed to measure current by rotation angle based on Faraday magneto-optic effect.

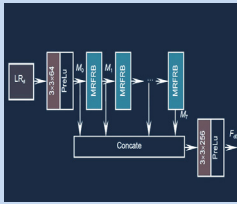


Measurement of optical fiber geometry parameters by gray distribution fitting with Gaussian function

190247

Li Yiming, Tu Jiankun, Xiang Huazhong, Jiang Bin, Zheng Gang

The distribution of mode field in optical fiber was analyzed. Gaussian function was used to fit the distribution of the fiber core, and the real edge of the fiber core and cladding can be obtained from the Gaussian function after fitting. This method is a further improvement on the measurement method of GB15972.20-2008.

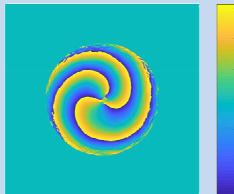


Color image multi-scale guided depth image super-resolution reconstruction

190260

Yu Shuxia, Hu Liangmei, Zhang Xudong, Fu Xuwen

A multi-scale color image guidance depth image super-resolution reconstruction convolutional neural network was constructed. The multi-scale fusion method was used to realize the guidance of high resolution (HR) color image features to low resolution (LR) depth image features, which is beneficial to the restoration of image details.

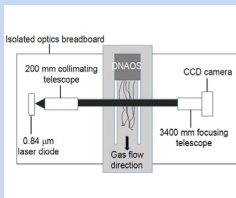


Characteristic analysis of orbital angular momentum of vortex beam propagating in atmospheric turbulent

190272

Zhang Lihong, Shen Feng, Lan Bin

The variation of rotating coherence function of vortex beam propagating in atmospheric turbulence was studied. The crosstalk between the angular momentum of each orbital angular momentum when the vortex beam propagates in atmospheric turbulence was summarized.

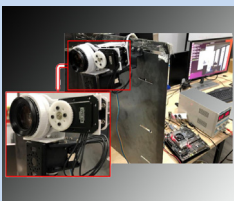


Measurement of flow density field by cyclic radial shearing interferometer

190390

Pu Hongyu, Li Dahai, Luo Peng, Zhang Chen

A common-path shearing interferometry method was introduced. It is insensitive to vibration and does not need a reference plane. A fast algorithm based on spatial phase modulation, coupled with a pulse laser and a synchronous control system, was used to measure the disturbance density field quantitatively in real time.

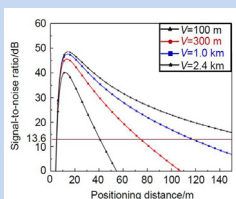


Cylindrical image mosaic method based on fast camera calibration in multi-scene

190436

Fu Ziqiu, Zhang Xiaolong, Yu Chen, Liang Dan, Liang Dongtai

A cylindrical image mosaic method based on fast camera calibration in multi-scene was proposed to solve the problems of scene limitation and complex calibration process in image mosaic using camera calibration parameter.



The research on fog's positioning performance of vehicles based on visible light

190661

Zhang Ying, Yang Jing, Yang Yufeng

In order to analyze the performance of vehicle positioning using LED traffic lights in foggy environment, the influences of receiving angle, road width, and signal-to-noise ratio (SNR) at the receiver in foggy environment on vehicle positioning range were discussed.