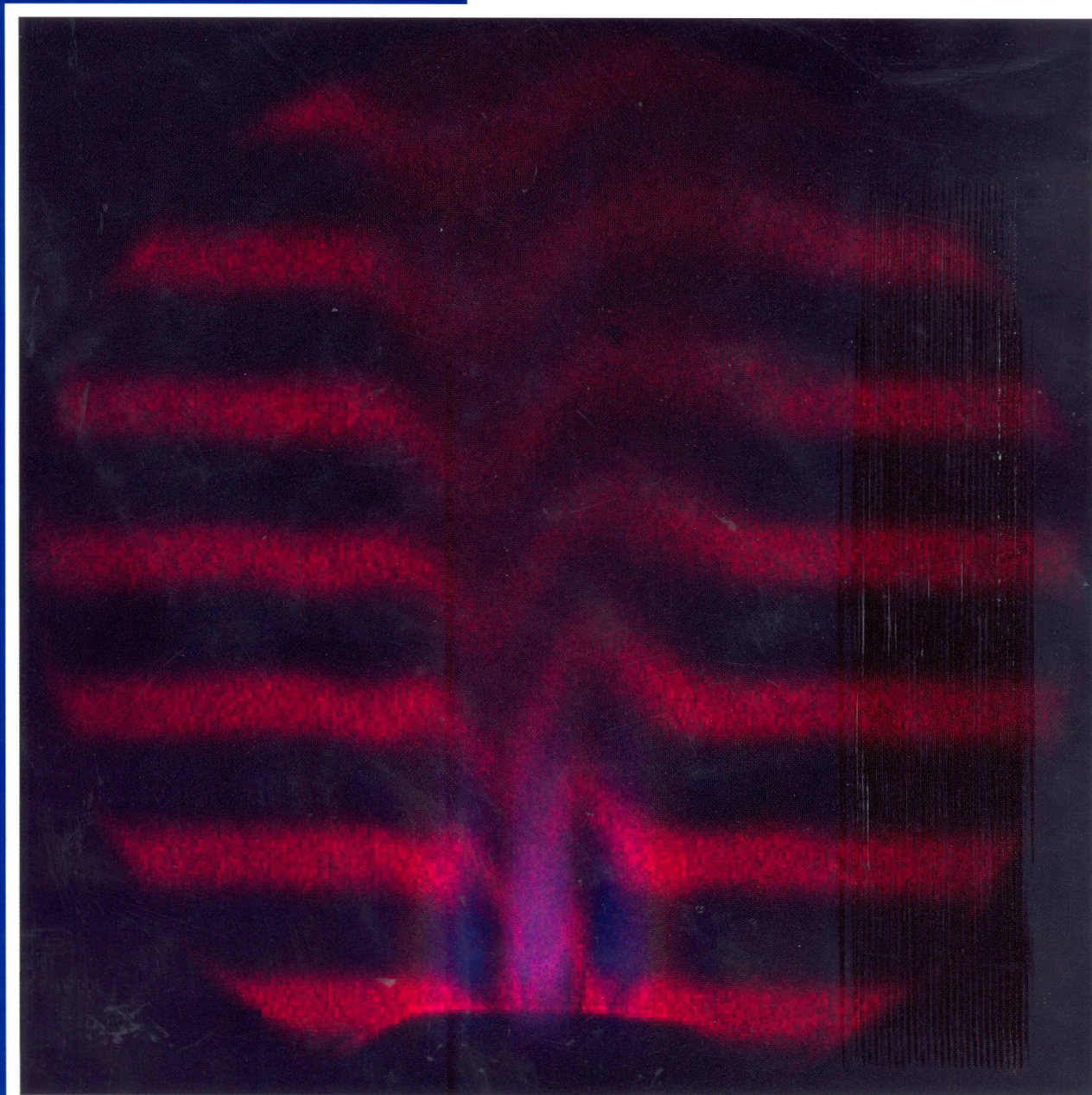


Applied Optics



OSA[®]
The Optical Society

20 May 2011

Applied Optics

Volume 50
Number 15
20 May 2011

www.osa.org

Information Pages

Feature Calendar vi
Information for Contributors x

Cover

Moire fringes captured from an argon arc plasma. By considering the pressure distribution, the temperature distribution of the plasma can be reconstructed. For details, see the paper by Chen *et al.*, pp. 2145–2151.

OPTICAL TECHNOLOGY

Atmospheric and Oceanic Optics

Estimating the effects of structural vibration on adaptive optics system performance Keith Powell 2185

Geometric Optics

Modeling and analyzing ghost images for incoherent optical systems Rania H. Abd El-Maksoud and Jose Sasian 2305

Imaging Systems

Influence of pressure distribution on flow field temperature reconstruction Yun-yun Chen, Yang Song, Zhen-hua Li, and An-zhi He 2145

Measurement of the lens optical transfer function using a tartan pattern Matthew R. Arnison, David P. Morgan-Mar, Chris A. Deller, Peter A. Fletcher, and Kieran G. Larkin 2158

White-light channeled imaging polarimeter using broadband polarization gratings Michael W. Kudenov, Michael J. Escuti, Eustace L. Dereniak, and Kazuhiko Oka 2283

Instrumentation, Measurement, and Metrology

Six-port integrating sphere photometer with uniform spatial response Seongchong Park, Dong-Hoon Lee, and Seung-Nam Park 2220

Surface profile measurement in white-light scanning interferometry using a three-chip color CCD Suodong Ma, Chenggen Quan, Rihong Zhu, Cho Jui Tay, and Lei Chen 2246

Integrated Optics

Electro-optical logic application of multimode interference coupler by multivalued controlling Haifeng Zhou, Wanjun Wang, Jianyi Yang, Minghua Wang, and Xiaoqing Jiang 2299

Lasers and Laser Optics

Focusing of an elliptic vortex beam by a square Fresnel zone plate Ziyang Chen and Daomu Zhao 2204

Optical Design and Fabrication

Terahertz lenses made by compression molding of micropowders Benedikt Scherger, Maik Scheller, Christian Jansen, Martin Koch, and Karin Wiesauer 2256

Optical Devices

Polarization-dependent circular Dammann grating made of azo-dye-doped liquid crystals

Dan Luo, Xiao Wei Sun,
Hai Tao Dai, and
Hilmi Volkan Demir

2316

Physical Optics

Polarization phase-shifting interferometric technique for complete evaluation of birefringence

Nandini Ghosh and
Kallol Bhattacharya

2179

Transmittance and optical constants of erbium films in the 3.25 – 1580 eV spectral range

Juan I. Larruquert, Fabio Frassetto,
Sergio García-Cortés,
Manuela Vidal-Dasilva,
Mónica Fernández-Perea,
José A. Aznárez, José A. Méndez,
Luca Poletto, A. Marco Malvezzi,
Angelo Giglia, and
Stefano Nannarone

2211

Remote Sensing and Sensors

Laser vibrometry from a moving ground vehicle

Leaf A. Jiang, Marius A. Albota,
Robert W. Haupt, Justin G. Chen,
and Richard M. Marino

2263

INFORMATION PROCESSING

Diffraction and Gratings

Application of sampling criterion on numerical diffraction from bacterial colonies

Euiwon Bae, Nan Bai, and
E. Daniel Hirleman

2228

Fiber Optics and Optical Communications

Stereoscopic system for inexpensive hazardous area three-dimensional robot localization applications based on incoherent optical fiber bundle calibrated for high-resolution image transmission

Olivier Demuynck and
José Manuel Menéndez

2274

Instrumentation, Measurement, and Metrology

Real-time detection and elimination of nonorthogonality error in interference fringe processing

Haijiang Hu and Fengdeng Zhang

2140

LASERS, PHOTONICS, AND ENVIRONMENTAL OPTICS

Atmospheric and Oceanic Optics

Sources of variance of downwelling irradiance in water

Peter Gege and Nicole Pinnel

2192

Arbitrary phasing technique for two-dimensional coherent laser array based on an active segmented mirror

Yi Zheng, Xiaohua Wang, Li Deng,
Feng Shen, and Xinyang Li

2239

Officers of the Society

J. CHRISTOPHER DAINTY,
President
National University of Ireland,
Galway

TONY F. HEINZ,
President-Elect
Columbia University

DONNA T. STRICKLAND,
Vice President
University of Waterloo

JAMES C. WYANT,
Past President
University of Arizona

STEPHEN D. FANTONE,
Treasurer
Optikos Corporation

ELIZABETH ROGAN,
CEO

OSA Staff

Christopher Videll
Managing Editor
Joseph Richardson
Feature Proposals Manager
Antoinette P. Wrighton
Director of Editorial Services

M. Scott Dineen
Deputy Senior Director,
Publications

Kelly Cohen
Manuscripts Director
Daniel Dawes
Production Editor
Stu Griffith
Publications Senior Production
Manager

Carlos X. Izurieta
Production Assistant

Peer Review

Carmelita Washington
Applied Optics Coordinator
Keith Jackson
Journal Assistant

Rights and Permissions

Susannah Lehman
Publications Research and
Fulfillment Coordinator

Elizabeth Nolan
Chief Publishing Officer

Alan N. Tourtlotte
Director, Institutional Sales and
Fulfillment

Integrated Optics

Controlling light transport by using a graded
photonic crystal

Kun Ren and Xiaobin Ren

2152

Compact hybrid TM-pass polarizer
for silicon-on-insulator platform

Muhammad Alam,
J. Stewart Aitchison, and
Mohammad Mojahedi

2294

Remote Sensing and Sensors

Comments on "Accuracy of Raman lidar water
vapor calibration and its applicability
to long-term measurements"

David N. Whiteman,
Demetrius Venable, and
Eduardo Landulfo

2170

Reply to "Comments on Accuracy of Raman
lidar water vapor calibration and its
applicability to long-term measurements"
by Whiteman *et al.*

Thierry Leblanc and
I. Stuart McDermid

2177

ERRATA

OPTICAL TECHNOLOGY

Diffraction and Gratings

Reduction of light reflection at silicon-plate
surfaces by means of subwavelength gratings in
the terahertz region: errata

Shin-ichi Kuroo, Satoshi Oyama,
Kazuo Shiraishi, Hiroyuki Sasho,
and Kazushiro Fukushima

2255

Copyright © 2011, Optical Society of America. Copying of material in this journal is subject to payment of copying fees. The code that appears on the first page of each article in this journal gives the per-article copying fee for each copy of the article made beyond the free copying permitted under Sections 107 and 108 of the U.S. Copyright Law. This fee should be paid through the Copyright Clearance Center, Inc., 222 Rosewood Drive, Danvers, Mass. 01923. The same fees and procedures apply to articles published in previous volumes of this journal. Permission is granted to quote excerpts from articles in this journal in scientific works with the customary acknowledgment of the source, including the author's name and the journal name, volume, page, and year. Reproduction of figures and tables is likewise permitted in other articles and books, provided that the same information is printed with them, permission of one of the original authors is obtained, and notification is given to the Optical Society of America. Reproduction or systematic or multiple reproduction of any material (including electronic publication or reproduction) in this journal (including abstracts) is permitted only under license from the Optical Society of America; in addition, the Optical Society may require that permission also be obtained from one of the authors. Address inquiries and notices to the Director of Publications, Optical Society of America, 2010 Massachusetts Avenue, NW, Washington, DC 20036-1023. In the case of articles whose authors are employees of the United States Government or its contractors or grantees, the Optical Society of America recognizes the right of the United States Government to retain a nonexclusive, royalty-free license to use the author's copyrighted article for United States Government purposes. *Applied Optics* (ISSN 0003-6935) is published three times a month by the Optical Society of America, 2010 Massachusetts Avenue, NW, Washington, DC 20036-1023. CODEN:AOPAL. USPS Publication No. 879520. 2011 subscription rates (domestic) per year (print plus online); \$265.00 for OSA members; nonmember and library subscriptions: \$4842.00. Periodicals postage paid at Washington, DC 20066-9998 and at additional mailing offices. POSTMASTER: Send address changes to *Applied Optics*, 2010 Massachusetts Avenue, NW, Washington, DC 20036-1023. **Subscriptions, missing copies, and change of address:** Optical Society of America, Fulfillment Services, 2010 Massachusetts Avenue, NW, Washington, DC 20036-1023; (202) 416-1907; FAX (202) 416-6130. Back number, single-issue, and foreign rates available on request. *Applied Optics*® is a registered trademark of OSA.