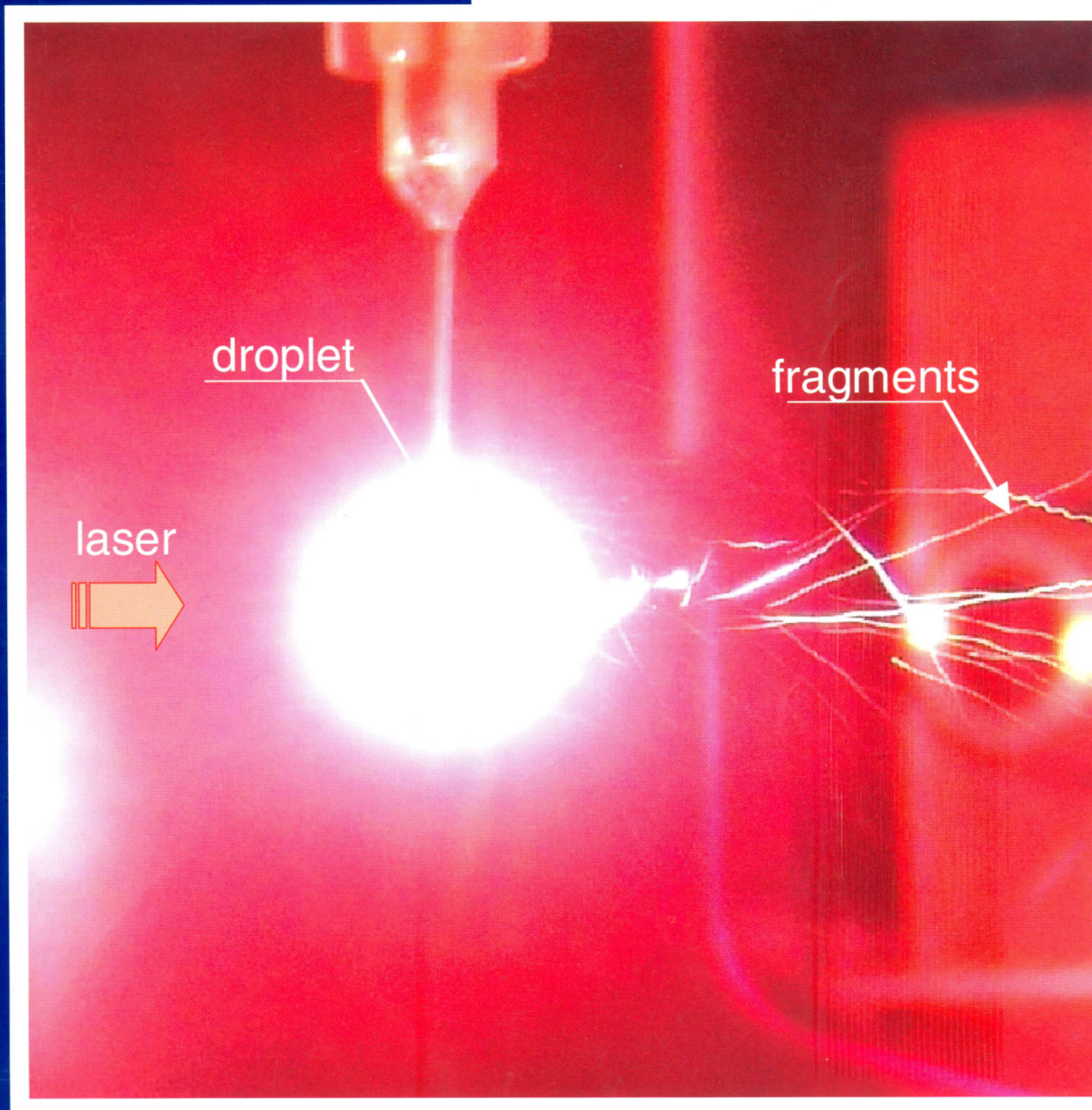


Applied Optics



Applied Optics

Volume 50

Number 27

20 September 2011

www.osa.org

Information Pages

Feature Calendar	vi
Information for Contributors	xi

Cover

The experimentally taken image of 1 mm hanging water droplet boiled up and emitted sparkling visible light when exposed to an IR femtosecond laser pulse train due to optical breakdown and pulse self-phase modulation processes. For details see the paper by Geints *et al.*, pp. 5291–5298.

OPTICAL TECHNOLOGY

Atmospheric and Oceanic Optics

Long-exposure filtering of turbulence-degraded wavefronts	James A. Gordon, David F. Buscher, and Fabien Baron	5303
---	---	------

Fiber Optics and Optical Communications

Performance analysis of a fiber Bragg grating filter-based strain/temperature sensing system based on a modified Gaussian function approximation method	Kuo-Chih Chuang, Chien-Ching Ma, and Chao-Hsiang Wang	5243
---	---	------

Zinc oxide nanoparticle based optical fiber humidity sensor having linear response throughout a large dynamic range	R. Aneesh and Sunil K. Khijwania	5310
---	----------------------------------	------

Instrumentation, Measurement, and Metrology

Diffusion dynamics of small molecules from mesoporous silicon films by real-time optical interferometry	Jeremy W. Mares and Sharon M. Weiss	5329
Field-of-view analysis of a polarization interference Fourier transform imaging spectrometer	Edward DeHoog, Xiaowei Xia, Alexander Parfenov, and Min-Yi Shih	5351

Materials

Analysis of the colorimetric properties of goniochromatic colors using the MacAdam limits under different light sources	Esther Perales, Elisabet Chorro, Werner R. Cramer, and Francisco M. Martínez-Verdú	5271
Modulation transfer function for infrared reflectarrays	Jose Antonio Gómez-Pedrero, James Ginn, Javier Alda, and Glenn Boreman	5344

Optical Design and Fabrication

Ion beam machining error control and correction for small scale optics	Xuhui Xie, Lin Zhou, Yifan Dai, and Shengyi Li	5221
--	--	------

Optical Devices

Optical stress sensor based on electro-optic compensation for photoelastic birefringence in a single crystal	Changsheng Li	5315
--	---------------	------

Fabrication of a high-precision spherical micromirror by bending a silicon plate with a metal pad

Tong Wu and Kazuhiro Hane

5321

Optics at Surfaces

Optical bistability in metal-insulator-metal plasmonic waveguide with nanodisk resonator containing Kerr nonlinear medium

Guoxi Wang, Hua Lu,
Xueming Liu, Yongkang Gong, and
Leiran Wang

5287

INFORMATION PROCESSING

Fourier Optics and Signal Processing

Image rotation and translation measurement based on double phase-encoded joint transform correlator

Shih-Hsin Chang and
Hsien-Huang P. Wu

5263

Instrumentation, Measurement, and Metrology

Improvement of digital photoelasticity based on camera response function

Peng Ge, Qi Li, Huajun Feng, and
Zhihai Xu

5235

Materials

Evaluation of Kerr constant of blue-phase liquid crystals by measuring off-axis retardation in vertical electric field cells

Pao-Ju Hsieh and
Huang-Ming Philip Chen

5299

Physical Optics

Selective edge enhancement using anisotropic vortex filter

Manoj Kumar Sharma, Joby Joseph,
and Paramasivam Senthilkumaran

5279

LASERS, PHOTONICS, AND ENVIRONMENTAL OPTICS

Integrated Optics

Manipulating wavelength-selective emission with heterogeneous photonic crystals

Hamza Kurt

5256

Lasers and Laser Optics

Uniform irradiation of adjustable target spots in high-power laser driver

Xiujuan Jiang, Jinghui Li,
Huagang Li, Yang Li, and
Zunqi Lin

5213

Materials

Effect of different epitaxial structures on GaAs photoemission

Jijun Zou, Yijun Zhang,
Wenjuan Deng, Jieyun Jin, and
Benkang Chang

5228

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

Nonlinear Optics

Angular diagram of broadband emission
of millimeter-sized water droplets exposed
to gigawatt femtosecond laser pulses

Yurii E. Geints,
Alexander A. Zemlyanov,
Andrey M. Kabanov,
Elena E. Bykova,
Dmitrii V. Apeksimov,
Oleg A. Bukin,
Ekaterina B. Sokolova,
Sergey S. Golik, and Aleksey A. Ilyin

5291

High-power picosecond terahertz-wave
generation in photonic crystal fiber
via four-wave mixing

Huihui Wu, Hongjun Liu,
Nan Huang, Qibing Sun, and
Jin Wen

5338

OSA Staff

Christopher Videll
Associate Director, Production &
Technology

Joseph Richardson
Feature Proposals Manager

Antoinette P. Wrighton
Director of Editorial Services

M. Scott Dineen
Deputy Senior Director,
Publications

Kelly Cohen
Publisher

Daniel Dawes
Production Editor

Stu Griffith
Publications Senior Production
Manager

Carlos X. Izurieta
Production Assistant

Chastee Lim
Journals Assistant

Ruth Serinas
Journals Assistant

Peer Review

Carmelita Washington
Applied Optics Coordinator

Keith Jackson
Journal Assistant

Rights and Permissions

Hannah Bembia
Copyright Permission Requests

Elizabeth Nolan
Chief Publishing Officer

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.