

Optics Letters

OSA[®]
The Optical Society

**Volume 36
Number 1
January 1 2011**

Optics Letters

Volume 36
Number 1
January 1 2011

www.osa.org

Atmospheric and Oceanic Optics

In vivo imaging of the human rod photoreceptor mosaic

Nathan Doble, Stacey S. Choi, Johanan L. Codona, Julian Christou, Jay M. Enoch, and David R. Williams

31

Atomic and Molecular Physics

High-resolution ^{133}Cs 6S–6D, 6S–8S two-photon spectroscopy using an intracavity scheme

You-Huan Chen, Tze-Wei Liu, Chien-Ming Wu, Chien-Chung Lee, Chao-Kuei Lee, and Wang-Yau Cheng

76

Detectors

Enhanced lateral photovoltaic effect observed in CdSe quantum dots embedded structure of Zn/CdSe/Si

Tian Lan, Shuai Liu, and Hui Wang

25

Fiber Optics and Optical Communications

A hollow-core photonic bandgap fiber polarization controller

M. Pang and W. Jin

16

Information authentication using photon-counting double-random-phase encrypted images

Elisabet Pérez-Cabré, Myungjin Cho, and Bahram Javidi

22

Loss of polarization entanglement in a fiber-optic system with polarization mode dispersion in one optical path

Misha Brodsky, Elizabeth C. George, Cristian Antonelli, and Mark Shtaif

43

Experimental demonstration of linear precompensation of a nonlinear transfer function due to second-harmonic generation

Sébastien Vidal, Jacques Luce, and Denis Penninckx

88

Fourier Optics and Signal Processing

Signal feature recognition based on
lightwave neuromorphic signal processing

Mable P. Fok, Hannah Deming,
Mitchell Nahmias, Nicole Rafidi,
David Rosenbluth, Alexander
Tait, Yue Tian, and
Paul R. Prucnal

19

Holography

Off-axis compressed holographic
microscopy in low-light conditions

Marcio Marim, Elsa Angelini,
Jean-Christophe Olivo-Marin,
and Michael Atlan

79

Image Processing

A simultaneous in- and out-of-plane
displacement measurement method

Philip Siegmann,
Víctor Álvarez-Fernández,
Francisco Díaz-Garrido, and
Eann A. Patterson

10

Quantitative x-ray phase-contrast imaging
using a single grating of comparable pitch
to sample feature size

Kaye S. Morgan,
David M. Paganin, and
Karen K. W. Siu

55

Local fringe density determination by
adaptive filtering

J. Vargas, J. Antonio Quiroga,
and T. Belenguer

70

Imaging Systems

Multistep ion exchange processes of
gradient refractive index rod lens

Hao Lv, Aimei Liu, Jufang Tong,
Xunong Yi, Qiang Li,
Xinmin Wang, and
Yaoming Ding

28

Instrumentation, Measurement, and Metrology

Analysis of surface plasmon spectro-
angular reflectance spectrum: real-time
measurement, resolution limits, and
applications to biosensing

Colin J. Alleyne,
Philip J. R. Roche,
Sandrine Filion-Côté, and
Andrew G. Kirk

46

Integrated Optics

Coherent interference induced transparency
in self-coupled optical waveguide-based
resonators

Linjie Zhou, Tong Ye, and
Jianping Chen

13

Waveguide-integrated telecom-wavelength
photodiode in deposited silicon

Kyle Preston,
Yoon Ho Daniel Lee, Mian
Zhang, and Michal Lipson

52

Lasers and Laser Optics

Absorption bleaching by stimulated
emission in erbium-doped silicon-rich
silicon nitride waveguides

Debo Olaosebikan, Selçuk Yerci,
Alexander Gondarenko, Kyle
Preston, Rui Li, Luca Dal Negro,
and Michal Lipson

4

External cavity diode laser with kilohertz linewidth by a monolithic folded Fabry–Perot cavity optical feedback	Yang Zhao, Yu Peng, Tao Yang, Ye Li, Qiang Wang, Fei Meng, Jianping Cao, Zhanjun Fang, Tianchu Li, and Erjun Zang	34
Doppler-free spectroscopy of mercury at 253.7 nm using a high-power, frequency-quadrupled, optically pumped external-cavity semiconductor laser	Justin Paul, Yushi Kaneda, Tsuei-Lian Wang, Christian Lytle, Jerome V. Moloney, and R. Jason Jones	61
Off-resonance laser frequency stabilization using the Faraday effect	Anna L. Marchant, Sylvi Händel, Timothy P. Wiles, Stephen A. Hopkins, Charles S. Adams, and Simon L. Cornish	64
Integrated Nd-doped borosilicate glass microsphere laser	Ganapathy Senthil Murugan, Michalis N. Zervas, Yuwapat Panitchob, and James S. Wilkinson	73
Energy scaling of 4.3 μm room temperature Fe:ZnSe laser	NoSung Myoung, Dmitri V. Martyshkin, Vladimir V. Fedorov, and Sergey B. Mirov	94

Materials

Waveguides in three-dimensional photonic-bandgap materials by direct laser writing and silicon double inversion	I. Staude, G. von Freymann, S. Essig, K. Busch, and M. Wegener	67
---	--	----

Microscopy

Rotation of single bacterial cells relative to the optical axis using optical tweezers	G. Carmon and M. Feingold	40
--	---------------------------	----

Nonlinear Optics

Polarization-free second-order nonlinear frequency conversion using the optical superlattice	X. J. Lv, J. Lu, Z. D. Xie, J. Yang, G. Zhao, P. Xu, Y. Q. Qin, and S. N. Zhu	7
Two-dimensional dissipative solitons supported by localized gain	Yaroslav V. Kartashov, Vladimir V. Konotop, and Victor A. Vysloukh	82
Stable radially symmetric and azimuthally modulated vortex solitons supported by localized gain	Valery E. Lobanov, Yaroslav V. Kartashov, Victor A. Vysloukh, and Lluís Torner	85

Optical Design and Fabrication

Nanomembrane transfer process for intricate photonic device applications	Mathew J. Zablocki, Ahmed Sharkawy, Ozgenc Ebil, and Dennis W. Prather	58
--	--	----

Officers of the Society

J. Christopher Dainty, *President*
Tony F. Heinz, *President-Elect*
James C. Wyant, *Past President*
Donna Strickland,
Vice President

Stephen Fantone, *Treasurer*
Elizabeth A. Rogan,

Chief Executive Officer
Stephen A. Burns, *Chair,*
Publications Council

Charles E. Synborski, *Chair,*
Corporate Associates

Ian A. Walmsley, *Chair, Member*
and Education Services

Anderson Gomes, *Chair,*
International Council

Laura Weller-Brophy, *Chair,*
Meetings Council

David N. Fittinghoff, *Chair,*
Board of Meetings

OSA Staff

Daniel R. Franzen,
Managing Editor

Monica R. Payne,
Production Editor

Stu Griffith, *Publications Senior*
Production Manager

Carlos X. Izurieta,
Production Assistant

Antoinette P. Wrighton, *Director*
of Editorial Production

M. Scott Dineen, *Deputy Senior*
Director, Publications

Peer Review

Kelly Cohen,
Director of Manuscripts

Joseph Richardson,
Peer Review Manager

Miriam Day, *Journal Assistant*
Carmelita Washington,

Manuscripts Coordinator

Delois Millner, *Editorial Assistant*
and Permissions

Agnetha Moore, *Journal*
Assistant

Elizabeth Nolan,
Chief Publishing Officer

Alan N. Tourtlotte,
Director, Institutional Sales
and Fulfillment

Susannah Lehman,
Fulfillment Coordinator

Optical Devices

Symmetrically glass-clad photonic crystal
nanocavities with ultrahigh quality factors

Bong-Shik Song,
Seung-Woo Jeon, and
Susumu Noda

91

Optics at Surfaces

Surface-plasmon-polariton-induced
suppressed transmission through ultrathin
metal disk arrays

Sanshui Xiao and
N. Asger Mortensen

37

Spectroscopy

Direct frequency-comb spectroscopy of a
dipole-forbidden clock transition in
trapped $^{40}\text{Ca}^+$ ions

Anne Lisa Wolf,
Jonas Morgenweg,
Jeroen C. J. Koelemeij,
Steven A. van den Berg, Wim
Ubachs, and Kjeld S. E. Eikema

49

Ultrafast Optics

Precise, real-time, every-single-shot,
carrier-envelope phase measurement of
ultrashort laser pulses

A. M. Sayler, Tim Rathje,
Walter Müller, Klaus Rühle,
R. Kienberger, and G. G. Paulus

1