

Conference Proceedings



Journals

Journal of Applied Remote Sensing

Journal of Astronomical Telescopes, Instruments, and Systems

Journal of Biomedical Optics

Journal of Electronic Imaging

Journal of Medical Imaging

Journal of Micro/Nanolithography, MEMS, and MOEMS

Journal of Nanophotonics

Journal of Photonics for Energy

Neurophotonics

Optical Engineering

OE Information for Authors

Individual Subscriptions

Institutional Subscriptions

SPIE Journals on CD-ROM

SPIE Digital Library

Books

Collections

Open Access

Contact SPIE Publications

Optical Engineering Special Sections

To submit a manuscript for consideration in a Special Section, please [prepare the manuscript](#) according to the journal guidelines and use the [Online Submission System](#). A cover letter indicating that the submission is intended for this special section should be included with the paper. Papers will be peer-reviewed in accordance with the journal's established policies and procedures. Authors who pay the voluntary page charges will receive the [benefit of open access](#).

View the list of special sections that have already been [published](#) on the SPIE Digital Library.

CALLS FOR PAPERS:

[Complex Light](#)

[Structural Health Monitoring: Use of Guided Waves and/or Nonlinear Acoustic Techniques](#)

November 2015

Complex Light

Guest Editors:

David L. Andrews
University of East Anglia
School of Chemical Sciences
Norwich, NR4 7TJ United Kingdom
E-mail: D.L.Andrews@uea.ac.uk

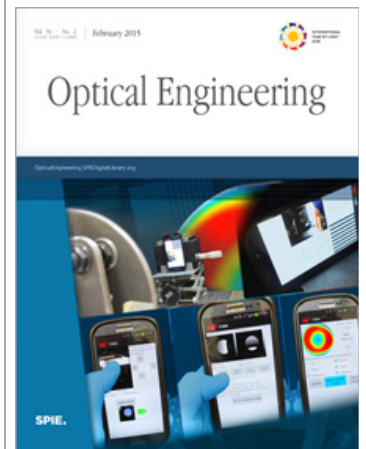
Enrique J. Galvez
Colgate University
Physics and Astronomy Department
13 Oak Drive
Hamilton, New York 13346-1379
E-mail: egalvez@colgate.edu

Jesper Glückstad
Technical University of Denmark
DTU Fotonik, Department of Photonics Engineering
Ørsteds Plads 343
DK-2800 Kongens Lyngby, Denmark
E-mail: jesper.gluckstad@fotonik.dtu.dk

Call for Papers: For this special section of *Optical Engineering*, the guest editors are pleased to invite contributed papers from participants at the 2015 Photonics West conference on Complex Light and Optical Forces. Submissions are also welcome from other researchers in the field.

The subject of light with complex structured wavefronts, polarization profiles, and phase landscapes has become a focus of growth in modern optics. Now that it is possible to produce beams of essentially nondiffractive character, or others conveying widely ranging quantities of orbital angular momentum, with embedded singularities, there is wide anticipation of applications emerging in wide-ranging fields. This has led to a proliferation of methods and devices for producing structured light, and techniques for downstream deployment or interrogation of the beam structure.

Fundamental topics in the field include classical and quantum aspects of the spin and orbital angular momentum of light; optical beams with structured wavefronts and polarization distributions; high-order modes and their generation methods; optical waves with singularities and exotic distributions of phase and polarization; monochromatic and polychromatic vortices; vortex loops and knots; novel propagation dynamics; and the interactions of complex light with rotating optical elements and in laser



+ Enlarge

Author Tools

[Guidelines for Authors](#)

[Open Access](#)

cavities. These are aspects that may link directly to quantum information and optical communications applications.

Complex light fields also offer unprecedented control for probing and exerting forces on matter at the microscale and nanoscale level. Suitably tailored light can organize, rotate, bind, channel, or sort microscale or nanoscale particles. To such ends there is interest in methods of generating beams with vortices, singularities, and other kinds of phase structure, such as hollow beams, tailor-made three-dimensional optical traps, sheets of light, curved focus beams, and evanescent waves. The optical elements associated with the production and detection of such beam structures themselves also prove to have significant imaging applications.

Papers are invited on all such topics, with the compilation for this special section representing a landmark in the ongoing development of the subject.

SPIE publication policy permits manuscripts based partly or entirely on scientific content previously reported in SPIE proceedings to be submitted to this special section. In most cases, it is anticipated that the journal submission will represent a substantively expanded, refined, or otherwise revised manuscript to fully satisfy the journal's standards of significance, originality, and presentation quality, which will be assessed by a formal peer review process.

Manuscripts due 15 April 2015.

[Top](#)

January 2016

Structural Health Monitoring: Use of Guided Waves and/or Nonlinear Acoustic Techniques

Guest Editors:

Tribikram Kundu

University of Arizona
Department of Civil Engineering & Engineering Mechanics
Aerospace and Mechanical Engineering Department
Tucson, Arizona 85721, USA
E-mail: tkundu@email.arizona.edu

Francesco Lanza di Scalea

University of California, San Diego
Irwin & Joan Jacobs School of Engineering
Department of Structural Engineering
9500 Gilman Drive, Mail Code 0085
La Jolla, California 92093-0085, USA
E-mail: flanzadiscalea@ucsd.edu

Hoon Sohn

Korea Advanced Institute of Science and Technology (KAIST)
Department of Civil and Environmental Engineering
291 Daehak-ro, Yuseong-Gu, Daejeon 305-701
Republic of Korea
E-mail: hoonsohn@kaist.ac.kr

Call for papers: In recent years the use of linear guided waves and nonlinear acoustic techniques has increased significantly for health monitoring of aerospace, civil, mechanical, microdevice, biomedical, mining, and marine structures. Guided waves are being used for defect detection, localization, and quantification in plates, pipes, biomedical implants, bridges, airplanes, and wind turbines. For detecting very small cracks or microcracks and monitoring material state before the macrocrack formation, nonlinear acoustic techniques such as higher harmonic, subharmonic, acousto-ultrasonic, nonlinear impact resonant acoustic spectroscopy, nonlinear wave mixing, wave modulation, and side-band counts have been developed for quantifying precursors to damage states. Papers related to this research area are being presented in various conferences and published in several journals.

The purpose of this special section is to present an overview of the current state of the art in structural health monitoring using guided waves and/or nonlinear acoustic techniques, as well as detailed analysis on promising new approaches.

Submitted papers should fall under these two categories:

- Use of guided waves for health monitoring of any type of structure
- Use of nonlinear acoustic techniques for health monitoring of any structure.

Manuscripts are due by 15 May 2015.

[Top](#)

PUBLISHED SPECIAL SECTIONS:Digital Photoelasticity: Advancements and Applications (August 2015)

Guest Editor: Krishnamurthi Ramesh

Computational Approaches to Imaging LADAR (March 2015)

Guest Editors: David Rabb and Joseph Marron

Fiber Lasers and Applications (January 2015)

Guest Editors: Zeev Zalevsky, Abraham Katzir, and Yoav Sintov

Optical Frequency Combs (December 2014)

Guest Editors: Vladimir Ilchenko and Zhaohui Li

Laser Damage II (December 2014)

Guest Editors: Vitaly Gruzdev and Michelle D. Shinn

Advances of Precision Optical Measurements and Instrumentation for Geometrical and Mechanical Quantities (December 2014)

Guest Editors: Lian Dong Yu, Ben Yong Chen, and Lianxiang Yang

Practical Holography: New Procedures, Materials, and Applications (November 2014)

Guest Editors: A.R. Ganesan and Pietro Ferraro

High-Speed 3-D Optical Metrology and Applications (November 2014)

Guest Editors: Song Zhang, Rongguang Liang, and Lianxiang Yang

Slow and Fast Light (October 2014)

Guest Editors: Selim Shahriar and Jacob Scheuer

Machine Vision: Processing, Components, and Systems (October 2014)

Guest Editors: Richard Kleihorst and Hideo Saito

Optical Fabrication, Testing, and Metrology (September 2014)

Guest Editors: Daniel Malacara-Hernández, Joanna Schmit, and Sven Schröder

Single-Photon Detection, Generation, and Applications (August 2014)

Guest Editors: Alex McIntosh and Mark Itzler

Glass Photonics for Integrated Optics (July 2014)

Guest Editors: Maurizio Ferrari and Stefano Taccheo

Human Vision (June 2014)

Guest Editors: Eli Peli, Joyce Farrell, Stephen Burns, and Susana Marcos

Laser Sensing and Imaging (June 2014)

Guest Editors: Chunqing Gao and Dingyuan Tang

Ocean Optics (May 2014)

Guest Editor: Weilin Hou

Ultrashort Pulsed Laser and Applications Engineering (May 2014)

Guest Editors: Marcos Dantus and Gerald C. Manke II

Terahertz Physics and Applications (March 2014)

Guest Editors: Mehdi Anwar, Joseph S. Melinger, Ekmel Ozbay, and Masayoshi Tonouchi

Freeform Optics (March 2014)

Guest Editors: Groot Gregory, Craig Olson, and Florian Fournier

Chemical, Biological, Radiological, and Explosive Sensing (February 2014)

Guest Editor: Augustus W. Fountain III

Optical and Hybrid Imaging and Processing for Big Data Problems (January 2014)

Guest Editors: Khan M. Iftekharruddin, Abdul A. S. Awwal, S. Susan Young, and Ghaleb M. Abdulla

Gradient-Index Optics (November 2013)

Guest Editors: Predrag Milojkovic, Stefanie Tompkins, and Ravindra Athale

High Dynamic Range Imaging (October 2013)

Guest Editors: Touradj Ebrahimi and Andrew G. Tescher

Speckle Metrology (October 2013)

Guest Editors: Ángel F. Doval, Cristina Trillo, and José Carlos López Vázquez

Space Telescopes II (September 2013)

Guest Editors: Jim Oschmann, Mark Clampin, and Howard MacEwen

Diffractive Optics and Nanophotonics (September 2013)

Guest Editor: Chunlei Du

Ground-Based/Airborne Telescopes and Instrumentation (August 2013)

Guest Editor: Helen Hall

Aero-Optics and Adaptive Optics for Aero-Optics (July 2013)

Guest Editor: Eric J. Jumper

Video Compression Technology (July 2013)

Guest Editors: Ofer Hadar and Dan Grois

Infrared Systems (June 2013)

Guest Editors: Michael Eismann and Phil Perconti

Optical Materials (May 2013)

Guest Editor: Ishwar D. Aggarwal

Target Search and Detection Modeling (April 2013)

Guest Editors: Piet Bijl, Tana Maurer, David Wilson

High-Energy Laser Systems and Components (February 2013)

Guest Editor: John R. Albertine

Laser Damage (December 2012)

Guest Editors: Vitaly E. Gruzdev and Michelle D. Shinn

Hyperspectral Imaging Systems (November 2012)

Guest Editors: John N. Lee and Christoher G. Simi

Imaging Through the Atmosphere (October 2012)

Guest Editor: Giesele Bennett

Terahertz and Millimeter Wave Imaging (September 2012)

Guest Editors: Eddie Jacobs, Roger Appleby, and Dennis Prather

Precision Optical Measurements and Instrumentation for Geometrical and Mechanical Quantities (August 2012)

Guest Editors: Kuang-Chao Fan, Rong-Sheng Lu, and Lian-Xiang Yang

Computational Imaging (July 2012)

Guest Editors: David J. Brady and Robert Gibbons

Active Imaging: Concepts, Components, and Application (June 2012)

Guest Editor: Edward A. Watson

Free-Space Laser Communications (March 2012)

Guest Editor: Hamid Hemmati

3-D and 4-D Imaging Techniques and Applications (February 2012)

Guest Editors: G. Charmaine Gilbreath and Lenny Lipton

Space Telescopes (January 2012)

Guest Editors: Mark Clampin and Kathryn A. Flanagan

Optical Design (November 2011)

Guest Editors: G. Groot Gregory and Bryan Stone

Fiber Lasers (September 2011)

Guest Editor: Dahv Kliner

Advances of Optical Metrology in the Transportation Industry (October 2011)

Guest Editors: Lianxiang Yang and Andreas Etemeyer

Digital Holography and Holographic Displays (September 2011)

Guest Editor: Hans I. Bjelkhagen

Liquid Crystals for Photonics (August 2011)

Guest Editor: Ignacio Moreno

Integrated Optics (July 2011)

Guest Editor: Giancarlo C. Righini

Infrared Detectors (June 2011)

Guest Editors: Paul Norton and Mel Kruer

Quantum and Interband Cascade Lasers (November 2010)

Guest Editors: Jerry Meyer and Igor Vurgaftman

Commemorating the 50th Anniversary of the Laser (September 2010)

Guest Editors: Gregory J. Quarles and Yehoshua Kalisky

Optics and Photonics for Homeland Security (October 2004)

Guest Editor: Bahram Javidi

Trends in Pattern Recognition Algorithms, Architectures, and Devices (August 2004)

Guest Editors: Mohamad S. Alam and Mohammad A. Karim

Polarization (May 2002)

Guest Editors: Dennis Goldstein, J. Scott Tyo, and David Chenault

Advances in Pattern Recognition, Techniques, Devices, and Algorithms (January 2002)

Guest Editors: Mohamad S. Alam and Mohammad A. Karim

Optical Computing Systems, Materials, and Devices (November 2001)

Guest Editors: Abdul A. S. Awwal and Khan M. Iftakharuddin

Active and Passive Components for Optical Networks (July 2001)

Guest Editors: Suning Tang and Yao Li

Distance and Displacement Measurements by Laser Technique (January 2001)

Guest Editors: Thierry Bosch and Silvano Donati

Pushing the Envelope in Optical Design Software (July 2000)

Guest Editor: Mary G. Turner

Target Recognition Techniques (May 2000)

Guest Editors: Mohammad S. Alam and Mohammad A. Karim

Information Optics Using Polymeric Materials (March 2000)

Guest Editor: Yao Li

Optical Methods for Shape Measurement (January 2000)

Guest Editors: Gordon M. Brown and Frank Chen

Solid State Lasers (November 1999)

Guest Editor: Richard Scheps

Acousto-optic Devices and Optical Information Processing: Research and Developments (July 1999)

Guest Editors: Partha P. Banerjee and Ting-Chung

Sampled Imaging Systems (May 1999)

Guest Editors: Ronald G. Driggers, Carl E. Halford, and Richard Vollmerhausen

Computer Arithmetic for Optical Computing (March 1999)

Guest Editors: Abdul Ahad S. Awwal and Khan M. Iftakharuddin

Optical Security (January 1999)

Guest Editors: Joseph L. Homer and Bahram Javidi

Optical Data Communication (December 1998)

Guest Editor: Casimer DeCusatis

High-Speed Photography (August 1998)

Guest Editors: Dennis L. Paisley and Mikhail Ya Schelev

Advances in Target Acquisition Modeling (July 1998)

Guest Editors: Thomas J. Meitzler, Grant R. Gerhart, and Harpreet Singh

Laser Metrology Developments and Applications in the Automotive Industry (May 1998)

Guest Editors: Fang Chen and Christopher T. Griffen

Integrated Optics (April 1998)

Guest Editor: S. Iraj Najafi

Advances in Recognition Techniques, Part 2 (March 1998)

Guest Editors: Mohammad S. Alam and Mohammad A. Karim

Sensor Fusion 1998: A Case for Intelligent Fusion (February 1998)

Guest Editor: Belur V. Dasarathy

Advances in Recognition Techniques, Part 1 (January 1998)

Guest Editors: Mohammad S. Alam and Mohammad A. Karim

Correlation Pattern Recognition (October 1997)

Guest Editor: Abhijit Mahalanobis

Smart Structures (July 1997)

Guest Editor: William B. Spillman

Optical Materials for Optical Systems (June 1997)

Guest Editor: Tadeusz Kryszczyński

Micro-Opto-Electro-Mechanical Systems (May 1997)

Guest Editor: M. Edward Motamedi

Sensor Fusion 1997 (March 1997)

Guest Editor: Belur V. Dasarathy

Photoacoustic and Photothermal Science and Engineering (February 1997)

Guest Editors: Andreas Mandelis and Kirk H. Michaelian

Optical Security (September 1996)

Guest Editors: Joseph L. Homer and Bahram Javidi

Applications of Neural Networks in Optics (August 1996)

Guest Editors: Suganda Jutamulia, Francis T. S. Yu, and Toshimitsu Asakura

Electronic Holography (June 1996)

Guest Editor: Chung J. Kuo

Optical Science and Engineering in Romania (May 1996)

Guest Editors: Ion M. Popescu, Dan C. Dumitras, and Nicolae N. Puscas

Sensor Fusion 1996 (March 1996)

Guest Editor: Belur V. Dasarathy

Optical Science and Engineering in Argentina (January 1996)

Guest Editor: Guillermo H. Kaufmann

