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Front Matter: Volume 9369

, "Front Matter: Volume 9369," Proc. SPIE 9369, Photonic Instrumentation Engineering II, 936901 (17 April 2015); doi: 10.1117/12.2190496

SPIE.

Event: SPIE OPTO, 2015, San Francisco, California, United States

PROCEEDINGS OF SPIE

Photonic Instrumentation Engineering II

**Yakov G. Soskind
Craig Olson**
Editors

**11–12 February 2015
San Francisco, California, United States**

Sponsored and Published by
SPIE

Volume 9369

Proceedings of SPIE 0277-786X, V. 9369

SPIE is an international society advancing an interdisciplinary approach to the science and application of light.

Photonic Instrumentation Engineering II, edited by Yakov G. Soskind, Craig Olson,
Proc. of SPIE Vol. 9369, 936901 · © 2015 SPIE · CCC code: 0277-786X/15/\$18
doi: 10.1117/12.2190496

Proc. of SPIE Vol. 9369 936901-1

The papers included in this volume were part of the technical conference cited on the cover and title page. Papers were selected and subject to review by the editors and conference program committee. Some conference presentations may not be available for publication. The papers published in these proceedings reflect the work and thoughts of the authors and are published herein as submitted. The publisher is not responsible for the validity of the information or for any outcomes resulting from reliance thereon.

Please use the following format to cite material from this book:

Author(s), "Title of Paper," in *Photonic Instrumentation Engineering II*, edited by Yakov G. Soskind, Craig Olson, Proceedings of SPIE Vol. 9369 (SPIE, Bellingham, WA, 2015) Article CID Number.

ISSN: 0277-786X

ISBN: 9781628414592

Published by

SPIE

P.O. Box 10, Bellingham, Washington 98227-0010 USA

Telephone +1 360 676 3290 (Pacific Time)- Fax +1 360 647 1445

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Printed in the United States of America.

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Introduction

Building on the success of last year's inaugural Conference on Photonic Instrumentation, this year's proceedings continue developing the singular yet foundational concept of measurement using light. As SPIE and the world celebrate the International Year of Light, it is worth reflecting on the sheer pervasiveness of optical technology used throughout everyday life. The work within this volume represents an excellent cross-section of how optical physics from the quantum to the macro level can be effectively employed in the real world.

The scientific and engineering work within these pages spans a wide range of techniques exploiting photons and optical fields for novel sensing, chemical detection and discrimination, biological detection and characterization, and polarization control. General techniques applying spread-spectrum theory to cost-effective measurement capability contrast with results of device phenomena exploiting quantum, acoustic, and plasmonic phenomenology. In addition, this year's Photonics Instrumentation joint session with the Conference on Complex Light and Optical Forces illustrated the strong overlap of manipulation of light on a fundamental level, with works demonstrating distinct control over the coherence, polarization, propagation, and amplitude distribution of an optical field, among others.

We are excited to see such a strong continuing interest in the field of instrumentation, especially in the interdisciplinary forums at Photonics West that interleave both the theoretically profound and the eminently practical.

**Yakov Soskind
Craig Olson**