Electro-Optical and Infrared Systems: Technology and Applications XVI

Duncan L. Hickman
Helge Bürsing
Editors

11–12 September 2019
Strasbourg, France

Sponsored by
SPIE

Cooperating Organisations
European Optical Society
Cranfield University (United Kingdom)

Published by
SPIE

Volume 11159
The papers 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. Additional papers and presentation recordings may be available online in the SPIE Digital Library at SPIEdigitalLibrary.org.

The papers 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 these proceedings:


ISSN: 0277-786X
ISSN: 1996-756X (electronic)
ISBN: 9781510630215

Published by
SPIE
P.O. Box 10, Bellingham, Washington 98227-0010 USA
Telephone +1 360 676 3290 (Pacific Time) - Fax +1 360 647 1445
SPIE.org
Copyright © 2019, Society of Photo-Optical Instrumentation Engineers.

Copying of material in this book for internal or personal use, or for the internal or personal use of specific clients, beyond the fair use provisions granted by the U.S. Copyright Law is authorized by SPIE subject to payment of copying fees. The Transactional Reporting Service base fee for this volume is $21.00 per article (or portion thereof), which should be paid directly to the Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, MA 01923. Payment may also be made electronically through CCC Online at copyright.com. Other copying for republication, resale, advertising or promotion, or any form of systematic or multiple reproduction of any material in this book is prohibited except with permission in writing from the publisher. The CCC fee code is 0277-786X/19/$21.00.

Printed in the United States of America by Curran Associates, Inc., under license from SPIE.

Publication of record for individual papers is online in the SPIE Digital Library.

SPIE. DIGITAL LIBRARY
SPIEdigitalLibrary.org

Paper Numbering: Proceedings of SPIE follow an e-first publication model. A unique citation identifier (CID) number is assigned to each article at the time of publication. Utilization of CIDs allows articles to be fully citable as soon as they are published online, and connects the same identifier to all online and print versions of the publication. SPIE uses a seven-digit CID article numbering system structured as follows:
- the first five digits correspond to the SPIE volume number.
- The last two digits indicate publication order within the volume using a Base 36 numbering system employing both numerals and letters. These two-number sets start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B ... 0Z, followed by 10-1Z, 20-2Z, etc. The CID Number appears on each page of the manuscript.
## Contents

<table>
<thead>
<tr>
<th>Index</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>vii</td>
<td>Authors</td>
<td>ix</td>
</tr>
<tr>
<td>ix</td>
<td>Conference Committee</td>
<td></td>
</tr>
</tbody>
</table>

**SENSOR TECHNOLOGY AND DEVICES I**

11159 03  *Silver nanowires: a new nanomaterial with advances for electrical, optical and IR systems (Invited Paper)* [11159-2]

11159 04  *Ghost imaging in the frequency domain with a high brilliance coherent monochromatic source: a novel approach to extend spectroscopy sensitivity beyond detectors limits* [11159-3]

11159 05  *Theoretic approach to ghost imaging in the frequency domain performed by means of a high brilliance coherent monochromatic source* [11159-4]

**SENSOR TECHNOLOGY AND DEVICES II**

11159 06  *Low-light-level SWIR photodetectors based on the InGaAs material system (Invited Paper)* [11159-5]

11159 07  *Sensor for security and safety applications based on a fully integrated monolithic electro-optic programmable micro diffracting device (Invited Paper)* [11159-6]

11159 08  *Ultrathin tunable terahertz absorbers based on electrostatically actuated metamaterial (invited Paper)* [11159-7]

**SYSTEMS AND APPLICATIONS I**

11159 0B  *Fast decay solid-state scintillators for high-speed x-ray imaging* [11159-10]

11159 0C  *Influence of phosphor screen color on performance with modern night vision goggles* [11159-11]

11159 0D  *The development of a multi-band handheld fusion camera* [11159-12]

11159 0E  *Comparison of a kaleidoscope-based multi-view infrared system with its TOMBO-based counterpart* [11159-13]
Developing a control architecture for highly accurate multi-axis inertial stabilized platform

ECOMOS software structure and key features (Invited Paper)

The project SPIDVE: study on EO Sensors Performance Improvement in Degraded Visual Environment

Architectures for radiofrequency and optronics sensors onboard Remotely Piloted Aerial Systems (RPAS)

Radiation-induced degradation of optoelectronic sensors

Assessing detection performance of night vision VIS/LWIR-fusion (Invited Paper)

Data collection and preliminary results on turbulence characterisation and mitigation techniques (Invited Paper)

Infrared system simulation of airborne target detection on space-based platform (Invited Paper)

Kinematic analysis of imaging seekers with roll-over-nod gimbal and a folded electro-optical layout (Invited Paper)

Feedback control method for limiting interfering Gaussian beams in a bistatic substance-on-surface chemical recognizer

Vessel track summarization by viewpoint selection

Pixel-wise infrared tone remapping for rapid adaptation to high dynamic range variations (Invited Paper)
POSTER SESSION

11159 0Y  Improving the stabilization level of ISP system using feedforward compensators [11159-27]

11159 10  A simple method for determining distances by range-gated vision systems with different forms of illuminating pulses [11159-35]