

PROCEEDINGS OF SPIE

*10th International Symposium on Advanced
Optical Manufacturing and Testing Technologies*

Intelligent Sensing Technologies and Applications

**Xiong Li
Yadong Jiang
Xiaoliang Ma
Tao Zhu
Bo Qi**
Editors

**14–17 June 2021
Chengdu, China**

Organized by
Institute of Optics and Electronics, Chinese Academy of Sciences (China)

Sponsored by
COS – The Chinese Optical Society (China) • Institute of Optics and Electronics, Chinese Academy of Sciences (China)

Technical Cosponsor
SPIE

Supported by
Ministry of Science and Technology of China (China) • Chinese Academy of Sciences (China) • National Natural Science Foundation of China (China)

Published by
SPIE

Volume 12075

Proceedings of SPIE 0277-786X, V. 12075

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

AOMATT 2021: Intelligent Sensing Technologies and Applications, edited by Xiong Li,
Yadong Jiang, Xiaoliang Ma, Tao Zhu, Bo Qi, Proc. of SPIE Vol. 12075,
1207501 • © 2021 SPIE • 0277-786X • doi: 10.1117/12.2623719

Proc. of SPIE Vol. 12075 1207501-1

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 SPIDigitalLibrary.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:
Author(s), "Title of Paper," in *10th International Symposium on Advanced Optical Manufacturing and Testing Technologies: Intelligent Sensing Technologies and Applications*, edited by Xiong Li, Yadong Jiang, Xiaoliang Ma, Tao Zhu, Bo Qi, Proc. of SPIE 12075, Seven-digit Article CID Number (DD/MM/YYYY); (DOI URL).

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

ISBN: 9781510650251
ISBN: 9781510650268 (electronic)

Published by
SPIE
P.O. Box 10, Bellingham, Washington 98227-0010 USA
Telephone +1 360 676 3290 (Pacific Time)
SPIE.org
Copyright © 2021 Society of Photo-Optical Instrumentation Engineers (SPIE).

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 fees. To obtain permission to use and share articles in this volume, visit Copyright Clearance Center 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.

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
SPIDigitalLibrary.org

Paper Numbering: A unique citation identifier (CID) number is assigned to each article in the Proceedings of SPIE 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

INTELLIGENT SENSING TECHNOLOGIES AND APPLICATIONS

12075 02	Interested region selection and super-resolution reconstruction of depth image for scanning lidar [12075-1]
12075 03	P3HT/surfactant blend films in organic thin-film transistors for high-performance NO₂ detection [12075-14]
12075 04	Research on fast and accurate acquisition method of decay time constant [12075-2]
12075 05	Design of the active cooling focal plane component for the space astronomy telescope [12075-28]
12075 06	Contrast enhancement of polarization-sensitive optical coherence tomography skin images [12075-27]
12075 07	The spectral diagnosis of a plasma synthetic jet actuator [12075-19]
12075 08	Research on line-of-sight stabilization control for servomechanism tracking system based on moving platform using sensor fusion technology [12075-15]
12075 09	Detecting circulating tumor cells via laser scanning [12075-23]
12075 0A	The application of infrared thermal imager in the detection of combustion characteristics of blasting fuse [12075-21]
12075 0B	A novel ultrafast interrogation method of FBG sensors [12075-16]
12075 0C	Design of high-performance ternary ammonia gas sensors based on Au NPs hybrid PANI-TiO₂ nanocomposites on flexible polyimide substrate [12075-22]
12075 0D	3D reconstruction of HDR surfaces with adaptive speckle projection [12075-5]
12075 0E	High precision detection method of methane in extreme environment based on TDLAS [12075-18]
12075 0F	Application of optical coherence tomography for morphological change of Staphylococcus during reproduction [12075-10]
12075 0G	A scheme for trace gas detection using infrared optical feedback cavity enhanced spectroscopy [12075-30]
12075 0H	Ultrafast contactless sensing with remotely placed optical fiber sensors based on in-fiber grating [12075-24]

12075 0I	Construction of human motion optical capture system [12075-9]
12075 0J	Two-parameter distributed fiber optical sensor for measurement of suspension bridge cables [12075-8]
12075 0K	Position prediction of the oyster adductor muscle based on YOLOv3 algorithm [12075-12]
12075 0L	System design of spectral coincidence detection of UV imager for power detection [12075-55]
12075 0M	Super-resolution imaging lidar based on Fourier ptychography [12075-7]
12075 0N	Displacement sensing based on intensity detection by a SNAP-taper coupling system [12075-17]
12075 0O	Novel pressure sensors based on polymer film with surface microstructures [12075-25]
12075 0P	Convolutional neural networks with coherent nanophotonic circuits [12075-11]