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Front Matter: Volume 9276

, "Front Matter: Volume 9276," Proc. SPIE 9276, Optical Metrology and Inspection for Industrial Applications III, 927601 (18 December 2014); doi: 10.1117/12.2181473

SPIE.

Event: SPIE/COS Photonics Asia, 2014, Beijing, China

PROCEEDINGS OF SPIE

Optical Metrology and Inspection for Industrial Applications III

Sen Han
Toru Yoshizawa
Song Zhang
Editors

9–11 October 2014
Beijing, China

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Volume 9276

Proceedings of SPIE 0277-786X, V. 9276

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

Optical Metrology and Inspection for Industrial Applications III, edited by Sen Han, Toru Yoshizawa, Song Zhang,
Proc. of SPIE Vol. 9276, 927601 • © 2014 SPIE • CCC code: 0277-786X/14/\$18 • doi: 10.1117/12.2181473

Proc. of SPIE Vol. 9276 927601-1

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.

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Author(s), "Title of Paper," in *Optical Metrology and Inspection for Industrial Applications III*, edited by Sen Han, Toru Yoshizawa, Song Zhang, Proceedings of SPIE Vol. 9276 (SPIE, Bellingham, WA, 2014) Article CID Number.

ISSN: 0277-786X

ISBN: 9781628413496

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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Introduction

This is the proceedings of the conference on Optical Metrology and Inspection for Industrial Applications III that was held as part of SPIE/COS Photonics Asia (in Beijing, China, 9–11 October 2014). This conference focuses on methods, analysis, and applications of optical metrology and inspection that have been applied to various industries with a particular emphasis on the manufacturing industry. The field of optical metrology and inspection has rapidly grown to wide acceptance for many industrial applications. For example, the requirement from industry realized high-speed and downsized measurement systems, and advances in machine/robot vision have provided compact and smart camera systems, new lighting systems, and better ways of data transfer.

Non-contact methods based on optical imaging principles have been seen wide use in the mechanical engineering and electronics industry, and also made advances in traditional manufacturing areas such as automotive and aerospace manufacturing. These methods are also being used for defect and flaw inspection, and precision measurements. Recent computing power has made analysis methods such as phase-shifting a viable tool for fast on-line inspection for process control and metrology applications. This conference is intended to address the latest advances and future developments in the areas of optical metrology and inspection as they are applied to practical applications in various industries.

In these proceedings, papers submitted to the conference are presented in the following eight sessions: Optical Metrology Methods I to VI and Optical Metrology Applications I and II, and one Poster Session.

In addition to optical principles and techniques, imaging methods and analysis techniques have also become more and more popular in practical applications due to rapid advanced computational processing methods, camera systems and device technologies including various optoelectrical elements and devices. In the next conference scheduled in 2016, more papers are expected to be presented in those areas as well.

**Sen Han
Toru Yoshizawa
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