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Optical Metrology and Inspection for Industrial Applications II

Kevin G. Harding
Peisen S. Huang
Toru Yoshizawa
Editors

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Introduction

This is the proceedings of the Conference on Optical Metrology and Inspection for Industrial Applications II that was held as part of SPIE/COS Photonics Asia (in Beijing, China, on 5-7 November 2012). This conference focuses on methods, analysis, and applications of optical metrology and inspection as applied to various industries with particular emphasis on manufacturing. The field of optical metrology and inspection has grown to wide acceptance for many applications in industries. For example, the advances in machine/robot vision have provided compact, smart camera systems, new cameras and lighting systems, and better ways of communicating with the outside world. In dimensional metrology, two and three-dimensional methods have seen wide use in the electronics industry, but have also made advances in traditional manufacturing areas such as automotive and aerospace manufacturing. These methods are being used for defect inspection, precision measurements, and the detection of flaws. Modern 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 inspection and metrology as they are applied to practical applications of industry.

In these proceedings, papers submitted to the conference are presented in the following sessions: Metrology modeling and simulation, Metrology calibration, Metrology applications, 3D methods, and NDT methods. In addition to optical principles and techniques, imaging methods have also become more and more popular in practical applications due to rapid advance of processing techniques and various optoelectrical devices.

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