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Front Matter: Volume 10819

, "Front Matter: Volume 10819," Proc. SPIE 10819, Optical Metrology and Inspection for Industrial Applications V, 1081901 (14 December 2018); doi: 10.1117/12.2521846

SPIE.

Event: SPIE/COS Photonics Asia, 2018, Beijing, China

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Optical Metrology and Inspection for Industrial Applications V

**Sen Han
Toru Yoshizawa
Song Zhang**
Editors

**11–13 October 2018
Beijing, China**

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Volume 10819

Proceedings of SPIE 0277-786X, V. 10819

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

Optical Metrology and Inspection for Industrial Applications V, edited by Sen Han,
Toru Yoshizawa, Song Zhang, Proc. of SPIE Vol. 10819, 1081901 · © 2018 SPIE
CCC code: 0277-786X/18/\$18 · doi: 10.1117/12.2521846

Proc. of SPIE Vol. 10819 1081901-1

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Please use the following format to cite material from these proceedings:

Author(s), "Title of Paper," in *Optical Metrology and Inspection for Industrial Applications V*, edited by Sen Han, Toru Yoshizawa, Song Zhang, Proceedings of SPIE Vol. 10819 (SPIE, Bellingham, WA, 2018) Seven-digit Article CID Number.

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

ISBN: 9781510622364
ISBN: 9781510622371 (electronic)

Published by

SPIE

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

vii	<i>Authors</i>
xi	<i>Symposium Committees</i>
xv	<i>Conference Committee</i>
xvii	<i>Introduction</i>

SESSION 1 OPTICAL METROLOGY METHODS I

10819 03	A new phase unwrapping method for phase shifting profilometry with object in motion [10819-3]
10819 04	Modulated rubidium-caesium laser system with dual wavelengths [10819-4]

SESSION 2 OPTICAL METROLOGY METHODS II

10819 07	Direct phase determination using simple phase lock loop for heterodyne displacement-measuring interferometers [10819-9]
10819 08	Robustness evaluation of the non-contact inner diameter measuring device with micrometer order accuracy [10819-10]
10819 09	Polarization aberration measurement of lithographic tools [10819-11]

SESSION 3 OPTICAL METROLOGY METHODS III

10819 0C	Phase determination method for sinusoidal frequency/phase modulation displacement measuring interferometer [10819-15]
10819 0D	3D label free bio-transfer standards [10819-16]
10819 0E	2D refractive index field measurements in air in different pressure scenarios [10819-17]

SESSION 4 OPTICAL METROLOGY METHODS IV

- 10819 OG **High-speed 3D shape measurement using composite structured-light patterns and multiview system (Invited Paper)** [10819-19]
- 10819 OH **Fast 3D foot modeling based on simulated laser speckle projection stereo and silhouette** [10819-21]
- 10819 OI **3D reconstruction of particle agglomerates using multiple scanning electron microscope stereo-pair images** [10819-22]
- 10819 OJ **Semiconductor wafer surface defect inspection algorithm based on multi-frame differential image summation** [10819-23]

SESSION 5 OPTICAL METROLOGY METHODS V

- 10819 OK **Dimensional measurement of internal profile using the optical caliper (Invited Paper)** [10819-24]
- 10819 OL **AM0 performance measurement of triple-junction GaInP/InGaAs/Ge solar cells by a compound light source** [10819-25]
- 10819 OM **Compact lateral shearing interferometer based on circular modified Hartmann mask** [10819-26]
- 10819 ON **Advanced signal processing in a white-light scanning interferometer for exact surface profile measurement** [10819-27]
- 10819 OO **Automatic control of LED light source for wafer height leveling in electron beam imaging systems** [10819-28]
- 10819 OP **Development of high accuracy in-situ measurement system for spectral reflectance of thermal control coatings** [10819-29]

SESSION 6 OPTICAL METROLOGY APPLICATIONS I

- 10819 OQ **Robotic visual servoing using fringe projection profilometry (Invited Paper)** [10819-30]
- 10819 OR **Extraction of properties of individual component for the retarder-linear diattenuator-retarder system and its application** [10819-31]
- 10819 OS **Rotation axis estimation for the derotator calibration with machine vision measurement of the auxiliary laser** [10819-32]
- 10819 OT **Robust direct vision-based pose tracking using normalized mutual information** [10819-33]

SESSION 7 OPTICAL METROLOGY APPLICATIONS II

- 10819 0V **Digital sinusoidal fringe generation with defocusing for profilometry: exponential binary vs squared binary patterns** [10819-35]
- 10819 0W **Holistic dimensional measurement of sheet-bulk metal formed parts** [10819-36]
- 10819 0X **Application of hyperspectral imaging on aircraft damage inspection** [10819-37]
- 10819 0Y **Novel methods for inspection of damage on airframes** [10819-39]
- 10819 0Z **Quantitative measurement of embedding depth of internal defect using phase-shifting dual-observation digital shearography** [10819-40]

SESSION 8 OPTICAL METROLOGY APPLICATIONS III

- 10819 10 **Damping measurement using laser self-mixing interference with spectrum analysis** [10819-41]
- 10819 11 **Cylindrical surface measurement** [10819-42]
- 10819 12 **Precision measurement of specular spherical surfaces based on monoscopic phase measuring deflectometry** [10819-43]
- 10819 15 **850nm gain-switched pulse laser and its application in photon counting OTDR** [10819-46]

POSTER SESSION

- 10819 16 **Ambient aerosols identification based on polarization indices during a field test** [10819-38]
- 10819 17 **Multi-ring artifact for performance evaluation experiments on probing system combinations** [10819-47]
- 10819 18 **A timeline-based sampling method applied in National Institute of Metrology primary standard goniophotometer** [10819-48]
- 10819 19 **Pose calibration of two cameras with non-overlapped field of view** [10819-49]
- 10819 1C **Optical model of hyperparaboloid mirror surface measurement based on PMD method** [10819-52]
- 10819 1E **Extraction of surface topography features of optical elements by contourlet transform** [10819-54]
- 10819 1F **Selection of frequency domain filter based on match of different location-specific points** [10819-55]

10819 1I	Quantitative reconstruction of 3D flow density fields by a direct computerized tomography method of BOS [10819-58]
10819 1J	An improved SFS method for civil aviation engine 3D borescope inspection [10819-59]
10819 1K	A turbulence image restoration algorithm for subpixel position of location holes on nuclear fuel assemblies [10819-60]
10819 1L	An image enhancement method for visual inspection of nuclear fuel assemblies [10819-61]
10819 1M	Fourier transform profilometry based on convolution neural network [10819-62]
10819 1N	Quantitative measurement of colored-fringe background oriented schlieren based on three-step phase shifting [10819-63]
10819 1O	Accuracy evaluations of axial localisation algorithms in confocal microscopy [10819-64]
10819 1P	Calibration of monochromator wavelength based on continuous spectrum light source and Fourier transform spectroradiometer [10819-65]
10819 1Q	UV laser wavelength standard based on frequency doubling of He-Ne laser at 632.8 nm [10819-66]
10819 1R	Surface measurement of axicon lens based on polarization phase-shifting interferometry [10819-67]
10819 1S	System development for morphological feature extraction and weight detection of melon seeds [10819-68]
10819 1T	Recovering camera response function for structural light reconstruction [10819-69]
10819 1U	Spectral-domain optical coherence tomography for conformal coating thickness measurement on printed circuit board [10819-70]
10819 1W	Improving the measurement accuracy of structured light 3D measurement system based on evaluating reliability of stripe center locating results [10819-72]
10819 1X	Contour positioning method for irregularly shaped workpiece applied to machine vision [10819-73]
10819 1Z	Method for calibrating transmitted wavefront at any wavelength by refractive index formula [10819-75]

Authors

Numbers in the index correspond to the last two digits of the seven-digit citation identifier (CID) article numbering system used in Proceedings of SPIE. The first five digits reflect the volume number. Base 36 numbering is employed for the last two digits and indicates the order of articles within the volume. Numbers start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B...0Z, followed by 10-1Z, 20-2Z, etc.

Aketagawa, Masato, 07, 0C, 1F	He, Yonghong, 16
Alghazi, Abai, 04	Higuchi, Masato, 07, 0C
Altmann, Bettina, 0S	Hu, Jingpei, 1R
An, Guofei, 04	Hu, Yanmin, 1J
Artigas, Roger, 0D	Huang, Huijie, 1R
Bai, Yang, 1W	Huang, Jinbao, 1E
Beermann, Rüdiger, 0E	Huang, Wencai, 10
Bermudez, Carlos, 0D	Huang, Xin, 11
Cai, Chuan, 0L	Järvinen, Miikka, 0D
Cai, He, 04	Jia, Jun, 1J
Cai, Shan, 1Q	Jia, Zhaoyi, 03
Chen, Chao, 1C	Jiang, Kai, 1S
Chen, Hanqiao, 10	Jiang, Lin, 18
Chen, JianJun, 1E	Jiang, Shanping, 0P
Chen, Qian, 0G	Jin, Lianhua, 0K, 0R
Chen, Sirui, 16	Kamagata, Abel, 0M, 0V
Chen, Wenjun, 1K	Kanazawa, Naobumi, 0K
Chen, Xinjian, 1U	Kassamakov, Ivan, 0D
Chen, Zhaogen, 1U	Köstner, Markus, 0E
Chen, Zhe, 0Q	Kondoh, Eiichi, 0K, 0R
Cheng, Xiaosheng, 1T	Kowa, Hiroyuki, 0R
Choi, Samuel, 0N	Leng, Wei, 0P
Cui, Haihua, 1T	Li, Bin, 15
Dai, Kang, 04	Li, Cuiling, 1S
Deng, Guangwei, 15	Li, Gongfa, 09
Ding, Yueqing, 17	Li, Hao, 15
Duan, Yuyan, 0J	Li, Hongsong, 0P
Duong, Quang-Anh, 07	Li, Jie, 0M
Enoki, Kenta, 1F	Li, Lin, 1P
Fen, Teng, 10	Li, LinFu, 1E
Feng, Guojin, 1P	Li, Shaoliang, 12
Feng, Qingchun, 1S	Li, Shiguang, 0O
Feng, Shijie, 0G	Li, Sikun, 0V
Gan, Haiyong, 1P	Li, Wei, 1X
Gao, Nan, 19	Li, Xinni, 1S
Gao, Xiaoting, 0J	Li, Yunpeng, 0H
Ge, Baozhen, 0H	Li, Zhaojie, 1T
Gelloz, Bernard, 0K, 0R	Li, Zhenhua, 1I, 1M, 1N
Gu, Guoqing, 0Z	Liao, Wenhe, 1T
Gui, Yingyi, 1P	Liu, Hui, 18
Guo, Chenxu, 0O	Liu, Linbo, 1U
Guo, Wenjiang, 0Y	Lu, Lei, 03
Guo, Yongxing, 09	Luan, Yinsen, 03
Hæggström, Edward, 0D	Luo, Hang, 0T
Han, Juhong, 04	Luo, Songjie, 0N
Han, Sen, 11, 1Z	Lyu, Yi, 1J
Hausotte, Tino, 0W	Ma, Hui, 16
He, Anzhi, 1I, 1M, 1N	Ma, Long, 1J
He, Yingwei, 0L, 1P	Ma, Tao, 1C

Ma, Yandy, 0X
 Mannion, Anthony J. P., 0X, 0Y
 Martinez, Pol, 0D
 Meng, Haifeng, 0L
 Metzner, Sebastian, 0W
 Mitsunari, Toshiyasu, 08
 Miyatsu, Nobuto, 0K
 Mo, Jianhua, 1U
 Nguyen, Thanh-Dong, 07
 Niu, Zhenqi, 12
 Nolvi, Anton, 0D
 Nozawa, Itta, 08
 Nulahemaiti, Niyaziali, 04
 O'Brien, Stephen, 0X, 0Y
 Okamoto, Yuji, 08
 Pape, Christian, 0S, 0T
 Pei, Xin, 1J
 Peng, Changzhe, 0M, 0V
 Pi, Yiqiang, 0O
 Pu, Jixiong, 0N
 Qian, Jin, 1Q
 Qiu, Chengchun, 0Z
 Qiu, Kun, 15
 Qiu, Lirong, 1O
 Qu, Xiangju, 1I, 1M, 1N
 Quentin, Lorenz, 0E
 Rao, Gang, 0Q
 Reithmeier, Eduard, 0E, 0I, 0S, 0T
 Ru, Qiaoqiao, 1C
 Sandler, Niklas, 0D
 Sasaki, Osami, 0N
 Shao, Rongjun, 1O
 Shao, Xiao, 1U
 Sheng, Ranran, 1L
 Shi, Chunying, 1Q
 Song, Haizhi, 15
 Song, Jian, 1S
 Song, Yang, 1I, 1M, 1N
 Su, Ying, 18
 Sun, Hao, 11
 Sun, Xiaohong, 1W
 Suzuki, Takamasa, 0N
 Tang, Feng, 0M
 Tao, Bo, 09
 Tao, Lei, 17
 Tao, Tianyang, 0G
 Tian, Qingguo, 0H, 0J
 Tian, Wei, 1T
 Töberg, Stefan, 0I
 Vainikka, Tuomas, 0D
 Viitala, Tapani, 0D
 Wang, Changsi, 1P
 Wang, Danyi, 0P
 Wang, Fang, 11
 Wang, Hanping, 1Q
 Wang, Haoyu, 1Z
 Wang, Jianbo, 1Q
 Wang, Long, 17
 Wang, Quanzhao, 1Z
 Wang, Rui, 10
 Wang, Shunyan, 04
 Wang, Xiangzhao, 0M, 0V
 Wang, Xiu, 1S
 Wang, Yixuan, 1X
 Wang, You, 04, 15
 Wang, Yun, 1O
 Wang, Yunxiang, 15
 Wang, Zhao, 1W
 Wei, Dong, 07, 0C, 1F
 Wei, Zhangfan, 1R
 Wu, Peng, 11
 Wu, Zhipeng, 0O
 Xi, Jiangtao, 03
 Xia, Min, 1X
 Xiao, Shuqi, 0J
 Xiao, Sixuan, 0O
 Xie, Dongdong, 0O
 Xiong, Limin, 0L, 1P
 Xiong, Yanbin, 10
 Xu, Guizhong, 0Z
 Xu, Jian, 17
 Xu, Jing, 0Q
 Xu, Shuang, 09
 Xu, Xing, 0Z
 Xu, Xueyang, 12
 Xue, Qi, 1W
 Yamazaki, Kazunori, 08
 Yan, Jingyun, 18
 Yan, Sitao, 19
 Yang, Huiru, 10
 Yang, Linhua, 0P
 Yang, Yinghao, 0O
 Ye, Huiying, 1W
 Yin, Cong, 1Q
 Yin, Wei, 0G
 Yin, Yongkai, 0S
 Yoshizawa, Toru, 0K
 Yu, Qiang, 04
 Yu, Xiaojun, 1U
 Yu, Yan, 17
 Yuan, Qiao, 1R
 Zeng, Aijun, 1R
 Zeng, Nan, 16
 Zhan, Dongjian, 16
 Zhang, Bifeng, 0L
 Zhang, Bolun, 0P
 Zhang, Fei, 0Z
 Zhang, Fugen, 0H
 Zhang, Jing, 0O
 Zhang, Junchao, 0L, 1P
 Zhang, Lei, 1I
 Zhang, Pengsong, 0P
 Zhang, Qiyuan, 1Z
 Zhang, Ruiming, 15
 Zhang, Ruirui, 1O
 Zhang, Wei, 04
 Zhang, Xiangchao, 12

Zhang, Xiaodi, 1T
Zhang, Zonghua, 19
Zhao, Wanliang, 12
Zhao, Weiqian, 1O
Zhao, Weiqiang, 18
Zhen, Zhang, 1K, 1L
Zheng, Zheng, 1K, 1L
Zhou, Heng, 15
Zhou, Qiang, 15
Zhou, Sen, 17
Zhou, Taogeng, 1P
Zhou, Wanxin, 0J
Zhou, Wenwei, 1M
Zhu, Chunhua, 03
Zhu, Yifan, 12
Zhu, Yingwei, 1N
Zuo, Chao, 0G

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Toru Yoshizawa, Tokyo University of Agriculture and Technology (Japan)
- 3 Optical Metrology Methods III
Sen Han, University of Shanghai for Science and Technology (China)
Xiangchao Zhang, Fudan University (China)
- 4 Optical Metrology Methods IV
Song Zhang, Purdue University (United States)
Jin Xu, Tsinghua University (China)
- 5 Optical Metrology Methods V
Toru Yoshizawa, Tokyo University of Agriculture and Technology (Japan)
Shuang Xu, Wuhan University of Science and Technology (China)
- 6 Optical Metrology Applications I
Song Zhang, Purdue University (United States)
Nan Zeng, Graduate School at Shenzhen, Tsinghua University (China)
- 7 Optical Metrology Applications II
Chao Zuo, Nanjing University of Science and Technology (China)
Hua Liu, Luoyang Institute of Electro-Optical Equipment (China)
- 8 Optical Metrology Applications III
Yukitoshi Otani, Utsunomiya University (Japan)

Introduction

This is the proceedings of the conference on Optical Metrology and Inspection for Industrial Applications V that was held as part of SPIE/COS Photonics Asia (in Beijing, China, 11–13 October 2018). 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 requirements from the absolute measurement of ultra-smooth flatness, industry realized high-speed and downsized measurement systems, and advances in machine/robot vision have provided smart algorithm systems, new lighting systems, and better ways of data transfer.

Non-contact methods based on optical interference and imaging principles have seen wide use in the optical/mechanical engineering, semi-conductor/LED and electronics industry, and also made advances in traditional manufacturing areas such as automotive and aerospace manufacturing. These methods are also being used for surface shape and defect 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 methods, applications and inspections as they are applied in various industries.

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

In addition to optical interference principles and techniques, imaging methods and phase-shifting 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 2020, more papers are expected to be presented in those areas as well.

**Sen Han
Toru Yoshizawa
Song Zhang**