

## Dimensional Optical Metrology and Inspection for Practical Applications VII

Wednesday - Thursday 18 - 19 April 2018

### Conference Sessions At A Glance

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Poster Session

- 1: Optical Metrology Analysis
- 2: Optical Metrology Methods I
- 3: Optical Metrology Methods II
- 4: Optical Metrology Applications
- 5: Additive Methods for Micro Electronic or Flexible Features
- 6: Advanced Additive Manufacturing Methods

### Important Dates

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 Abstract Due:  
 9 October 2017

 Author Notification:  
 11 December 2017  
 Notifications will be sent no later than 12/15/17

 Manuscript Due Date:  
 21 March 2018

### Conference Committee

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#### Conference Chairs

[Kevin G. Harding](#), Optical Metrology Solutions (United States)  
[Song Zhang](#), Purdue Univ. (United States)

#### Program Committee

[Motoharu Fujiigaki](#), Univ. of Fukui (Japan)  
[Khaled J. Habib](#), Kuwait Institute for Scientific Research (Kuwait)  
[Damien P. Kelly](#), Technische Univ. Ilmenau (Germany)  
[Peter Kühmstedt](#), Fraunhofer-Institut für Angewandte Optik und Feinmechanik (Germany)  
[Beiwen Li](#), Iowa State Univ. (United States)

Program Committee continued...

[Rongguang Liang](#), College of Optical Sciences, The Univ. of Arizona (United States)  
[Georges T. Nehmetallah](#), The Catholic Univ. of America (United States)  
[Gunther Notni](#), Fraunhofer-Institut für Angewandte Optik und Feinmechanik (Germany)  
[Lei Tian](#), Boston Univ. (United States)  
[Joseph D. Tobiasson](#), Micro Encoder Inc. (United States)  
 Zhaoyang Wang, The Catholic Univ. of America (United States)  
 Jiangtao Xi, Univ. of Wollongong (Australia)

**TUESDAY 17 APRIL**
[Show All Abstracts](#)

### Session PTue: Poster Session

Tuesday 17 April 2018

6:00 PM - 8:00 PM

Location: Ballroom Level, Osceola Ballroom C

All symposium attendees – You are invited to attend the evening Interactive Poster Session to view the high-quality posters and engage the authors in discussion. Enjoy light refreshments while networking with colleagues in your field. Authors may set up their posters between 10:00 am and 5:00 pm the day of their poster session. Special daytime previewing prior to the session from 10:00 am to 5:00 pm. Attendees are required to wear their conference registration badges to access the Osceola Ballroom to view the posters.

Posters that are not set up by the 5:00 pm cut-off time will be considered no-shows, and their manuscripts may not be published. Poster authors should accompany their posters from 6:00 to 8:00 pm to answer questions from attendees. All posters and other materials must be removed no later than 8:30 pm. Any posters or materials left behind at the close of the poster session will be considered unwanted and will be discarded. SPIE assumes no responsibility for posters left up after the end of each poster session.

**WEDNESDAY 18 APRIL**
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### Session 1: Optical Metrology Analysis

Wednesday 18 April 2018

8:00 AM - 10:00 AM

Location: Ballroom Level, Tampa 3


 Session Chair: [Song Zhang](#), Purdue Univ. (United States)

#### 2D and 3D computational optical imaging using deep convolutional neural networks (DCNNs)

Paper 10667-1

Time: 8:00 AM - 8:20 AM


Author(s): Thanh C. Nguyen, George Nehmetallah, The Catholic Univ. of America (United States)

[Add To My Schedule](#) **Correction of errors in the phase maps recovered by temporal phase unwrapping for fringe projection profilometry (Canceled)**

Paper 10667-2  
Time: 8:20 AM - 8:40 AM  
Author(s):

**3D shape measurement by thermal fringe projection: optimization of infrared (IR) projection parameters**


Paper 10667-3  
Time: 8:40 AM - 9:00 AM  
Author(s): Martin Landmann, Friedrich-Schiller-Univ. Jena (Germany); Stefan Heist, Friedrich-Schiller-Univ. Jena (Germany), Fraunhofer-Institut für Angewandte Optik und Feinmechanik (Germany); Anika Brahm, Simon Schindwolf, Peter Kühmstedt, Fraunhofer-Institut für Angewandte Optik und Feinmechanik (Germany); Gunther Notni, Fraunhofer-Institut für Angewandte Optik und Feinmechanik (Germany), Univ. of Technology (Germany)

[Add To My Schedule](#) **A new method for separating the speckle pattern embedded into fringe patterns for fringe projection profilometry (Canceled)**


Paper 10667-4  
Time: 9:00 AM - 9:20 AM  
Author(s):

**High performance, low latency 3D sensor network for live full object reconstruction (Conference Presentation)**

Paper 10667-5  
Time: 9:20 AM - 9:40 AM  
Author(s): Christoph Munkelt, Matthias Heinze, Fraunhofer-Institut für Angewandte Optik und Feinmechanik (Germany); Tobias Zimmermann, Friedrich-Schiller-Univ. Jena (Germany), Fraunhofer-Institut für Angewandte Optik und Feinmechanik (Germany); Peter Kühmstedt, Fraunhofer-Institut für Angewandte Optik und Feinmechanik (Germany)

[Add To My Schedule](#) **Motion-induced error compensation for 3D shape measurement with phase shifting technique**

Paper 10667-6  
Time: 9:40 AM - 10:00 AM  
Author(s): Ziping Liu, Song Zhang, Purdue Univ. (United States)

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**Coffee Break and Dedicated Exhibition Time 10:00 AM - 11:00 AM**

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## Session 2: Optical Metrology Methods I

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Wednesday 18 April 2018  
11:00 AM - 12:10 PM  
Location: Ballroom Level, Tampa 3

Session Chair: Maik Rosenberger, Technische Univ. Ilmenau (Germany)


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**A novel method for 3D shape measurement of objects in motion (Invited Paper) (Canceled)**


Paper 10667-7  
Time: 11:00 AM - 11:30 AM  
Author(s):

**3D Optical metrology: An overview for 2018**


Paper 10667-29  
Time: 11:00 AM - 11:30 AM  
Author(s): Kevin G. Harding, Optical Metrology Solutions (United States)

[Add To My Schedule](#) **Optimal carrier frequency selection for high-speed 3D shape measurement with double-pattern pulse width modulation techniques**

Paper 10667-8  
Time: 11:30 AM - 11:50 AM  
Author(s): Yajun Wang, Wuhan University (China); Song Zhang, Purdue Univ. (United States)

[Add To My Schedule](#) **High-speed 3D shape measurement by GOBO projection of aperiodic sinusoidal fringes: a performance analysis**

Paper 10667-9  
Time: 11:50 AM - 12:10 PM  
Author(s): Stefan Heist, Fraunhofer-Institut für Angewandte Optik und Feinmechanik (Germany); Patrick Dietrich, Martin Landmann, Friedrich-Schiller-Univ. Jena (Germany), Fraunhofer-Institut für Angewandte Optik und Feinmechanik (Germany); Peter Kühmstedt, Fraunhofer-Institut für Angewandte Optik und Feinmechanik (Germany); Gunther Notni, Fraunhofer-Institut für Angewandte Optik und Feinmechanik (Germany), Technische Univ. Ilmenau (Germany)

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**Lunch/Exhibition Break 12:10 PM - 1:40 PM**

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## Session 3: Optical Metrology Methods II

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Wednesday 18 April 2018

1:40 PM - 3:10 PM

Location: Ballroom Level, Tampa 3

Session Chair: [Kevin G. Harding](#), Optical Metrology Solutions (United States)


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**Recent research on high-resolution 3D range geometry compression** *(Invited Paper)*

Paper 10667-10

Time: 1:40 PM - 2:10 PM


Author(s): Song Zhang, Purdue Univ. (United States)

[Add To My Schedule](#) **3D shape measurement of glass and transparent plastics with a thermal 3D system in the mid-wave infrared**

Paper 10667-11

Time: 2:10 PM - 2:30 PM


Author(s): Anika Brahm, Simon Schindwolf, Martin Landmann, Stefan Heist, Peter Kühmstedt, Fraunhofer-Institut für Angewandte Optik und Feinmechanik (Germany); Gunther Notni, Fraunhofer-Institut für Angewandte Optik und Feinmechanik (Germany), Technische Univ. Ilmenau (Germany)

[Add To My Schedule](#) **Improved line of light measurements on shiny and transparent surfaces**

Paper 10667-12

Time: 2:30 PM - 2:50 PM


Author(s): Kevin G. Harding, Optical Metrology Solutions (United States)

[Add To My Schedule](#) **Generation and evaluation of hyperspectral 3D surface models based on a structured light system with hyperspectral snapshot mosaic sensors**

Paper 10667-13

Time: 2:50 PM - 3:10 PM

Author(s): Stefan Heist, Friedrich-Schiller-Univ. Jena (Germany); Chen Zhang, Technische Univ. Ilmenau (Germany); Karl Reichwald, Technische Univ. Ilmenau (Germany), Fraunhofer-Institut für Angewandte Optik und Feinmechanik (Germany); Peter Kühmstedt, Fraunhofer-Institut für Angewandte Optik und Feinmechanik (Germany); Gunther Notni, Fraunhofer-Institut für Angewandte Optik und Feinmechanik (Germany), Technische Univ. Ilmenau (Germany)

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**Coffee Break 3:10 PM - 3:40 PM**

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## Session 4: Optical Metrology Applications

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Wednesday 18 April 2018

3:40 PM - 5:00 PM

Location: Ballroom Level, Tampa 3

Session Chair: [Song Zhang](#), Purdue Univ. (United States)


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**Superfast, high-resolution dynamic 3D strain measurement of robotic flapping wings**

Paper 10667-14

Time: 3:40 PM - 4:00 PM


Author(s): Beiwen Li, Iowa State Univ. of Science and Technology (United States)

[Add To My Schedule](#) **Measurement of creep strain in polymers by means of electronic speckle pattern shearing interferometry**

Paper 10667-15

Time: 4:00 PM - 4:20 PM


Author(s): Juan Benito Pascual Francisco, Orlando Susarrey Huerta, Alexandre V. Michtchenko, Omar Barragán-Pérez, Instituto Politécnico Nacional (Mexico)

[Add To My Schedule](#) **Hand portable 3D mapper applied to pit quantification on aerospace parts**

Paper 10667-16

Time: 4:20 PM - 4:40 PM

Author(s): Erik Novak, Shawn McDermid, 4D Technology Corp. (United States); Kevin G. Harding, Optical Metrology Solutions (United States)

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**THURSDAY 19 APRIL**[Show All Abstracts](#)

## Session 5: Additive Methods for Micro Electronic or Flexible Features

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Thursday 19 April 2018

9:00 AM - 10:00 AM

Location: Ballroom Level, Tampa 3

Session Chair: [Kevin G. Harding](#), Optical Metrology Solutions (United States)


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### Error mapping method for multi-axis additive manufacturing system

Paper 10667-17

Time: 9:00 AM - 9:20 AM

Author(s): Rajesh Ramamurthy, Vadim Bromberg, Timothy Fiorillo, GE Global Research (United States); Kevin G. Harding, Optical Metrology Solutions (United States)


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### Silver nanoparticle electro spray laser deposition for additive manufacturing of microlayers on rigid or flexible substrates

Paper 10667-19

Time: 9:40 AM - 10:00 AM

Author(s): Eduardo Castillo Orozco, Ranganathan Kumar, Aravinda Kar, Univ. of Central Florida (United States)

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**Coffee Break 10:00 AM - 10:30 AM**

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## Session 6: Advanced Additive Manufacturing Methods

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Thursday 19 April 2018

10:30 AM - 11:10 AM

Location: Ballroom Level, Tampa 3

Session Chair: [Kevin G. Harding](#), Optical Metrology Solutions (United States)

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### Additive manufacturing of lightweight mirrors (Conference Presentation)

Paper 10667-22

Time: 10:30 AM - 10:50 AM

Author(s): Nikola Dudukovic, Wen Chen, Bryan D. Moran, William A. Steele, Eric B. Duoss, Christopher M. Spadaccini, Tayyab I. Suratwala, Rebecca Dylla-Spears, Lawrence Livermore National Lab. (United States)


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### Structured light as an enhancement tool for low contrast features in additive manufacturing

Paper 10667-23

Time: 10:50 AM - 11:10 AM

Author(s): Kevin G. Harding, Optical Metrology Solutions (United States)

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