

PROCEEDINGS OF SPIE

# ***Interferometry XV: Applications***

**Cosme Furlong  
Christophe Gorecki  
Erik L. Novak**  
*Editors*

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# Contents

vii *Conference Committee*

---

## SESSION 1 NDT AND SUBNANO-METROLOGY

---

- 7791 02 **Optical metrology and optical non-destructive testing from the perspective of object characteristics (Invited Paper)** [7791-01]  
R. B. Bergmann, T. Bothe, C. Falldorf, P. Huke, M. Kalms, C. von Kopylow, Bremer Institut für angewandte Strahltechnik (Germany)
- 7791 03 **Design, technology, and signal processing for DOE-based microinterferometer array applied in new generation M(O)EMS test equipment** [7791-02]  
M. Kujawinska, M. Jóźwik, A. Styk, Warsaw Univ. of Technology (Poland); U. Zeitner, Fraunhofer-Institut für Angewandte Optik und Feinmechanik (Germany); A. Røyset, SINTEF (Norway); S. Beer, CSEM SA (Switzerland); R. Moosburger, Heliotis Inc. (Switzerland); C. Gorecki, FEMTO, CNRS, Univ. de Franche-Comté (France); K. Gastinger, SINTEF (Norway)
- 7791 04 **Reliability study of AIN-driven microcantilevers based on interferometric measurements of their static and dynamic behaviours** [7791-03]  
C. Gorecki, FEMTO, CNRS, Univ. de Franche-Comté (France); K. Krupa, FEMTO, CNRS, Univ. de Franche-Comté (France) and Warsaw Univ. of Technology (Poland); R. Jóźwicki, M. Joźwik, Warsaw Univ. of Technology (Poland)
- 7791 05 **Optical homodyne common-path grating interferometer with sub-nanometer displacement resolution** [7791-04]  
C.-C. Wu, C.-Y. Cheng, Z.-Y. Yang, Tamkang Univ. (Taiwan)

---

## SESSION 2 SHAPE AND DEFORMATION MEASUREMENTS

---

- 7791 06 **An instrument for inspecting aspheric optical surfaces and components** [7791-05]  
J. S. Jo, J. D. Trolinger, A. K. Lal, MetroLaser, Inc. (United States)
- 7791 07 **Using a Savart plate in optical metrology** [7791-06]  
P. Blain, F. Michel, Y. Renotte, S. Habraken, Univ. de Liège (Belgium)
- 7791 09 **Simulation and experimental study of flexible electret-based loudspeaker vibration modes by electronic speckle pattern interferometry** [7791-08]  
Y.-C. Chen, T.-H. Chen, C.-J. Chien, W.-C. Chang, C.-C. Cheng, W.-C. Ko, National Taiwan Univ. (Taiwan); K.-C. Wu, National Taiwan Univ. (Taiwan) and National Applied Research Labs. (Taiwan); C.-K. Lee, National Taiwan Univ. (Taiwan) and Industrial Technology Research Institute (Taiwan)
- 7791 0A **Two-dimensional refractive index distribution measurement of a GRIN lens** [7791-09]  
H. C. Hsieh, Y. L. Chen, W. T. Wu, W. Y. Chang, D. C. Su, National Chiao Tung Univ. (Taiwan)

---

**SESSION 3 MEASUREMENT OF DYNAMIC EVENTS**

---

- 7791 0B **Design and applications of a high-speed Doppler imaging vibrometer (Invited Paper)** [7791-10]  
J. Kilpatrick, A. Apostol, V. Markov, MetroLaser, Inc. (United States)
- 7791 0C **Preliminary results of tympanic membrane displacements using non-invasive optical methods** [7791-11]  
M. d. S. Hernández-Montes, S. Muñoz Solís, F. Mendoza Santoyo, Ctr. de Investigaciones en Óptica, A.C. (Mexico)
- 7791 0D **Design of a positioning system for a holographic otoscope** [7791-12]  
I. Dobrev, J. M. Flores Moreno, C. Furlong, E. J. Harrington, Worcester Polytechnic Institute (United States); J. J. Rosowski, C. Scarpino, Massachusetts Eye and Ear Infirmary (United States)
- 7791 0E **Non-invasive monitoring for living cell culture with lensless Fourier transform digital holography microscopy** [7791-13]  
Y. Wang, D. Wang, J. Zhao, Y. Li, P. Meng, Y. Wan, Z. Jiang, Beijing Univ. of Technology (China)

---

**SESSION 4 NOVEL APPLICATIONS**

---

- 7791 0F **Range imaging for measuring streambed topography** [7791-14]  
T. K. Kohoutek, ETH Zürich (Switzerland); M. Nitsche, Swiss Federal Research Institute WSL (Switzerland)
- 7791 0G **Performance evaluation of a radial in-plane digital speckle pattern interferometer using a diffractive optical element for residual stress measurement** [7791-15]  
A. Albertazzi, Jr., M. R. Viotti, W. A. Kapp, Univ. Federal de Santa Catarina (Brazil)
- 7791 0H **Integrated interferometer for monitoring three-dimensional vibrations in high-power laser system** [7791-16]  
X. Zhang, W. Huang, D. Liu, Y. Zhang, Y. Zhang, J. Zhu, Shanghai Institute of Optics and Fine Mechanics (China)

---

**SESSION 5 OPTICAL METROLOGY SYSTEMS**

---

- 7791 0I **An assistance system for the selection of sensors in multi-scale measurement systems** [7791-18]  
A. Burla, T. Haist, W. Lyda, W. Osten, Univ. Stuttgart (Germany)
- 7791 0J **Development of an optoelectronic holographic platform for otolaryngology applications** [7791-19]  
E. Harrington, I. Dobrev, N. Bapat, J. M. Flores, Worcester Polytechnic Institute (United States); C. Furlong, Worcester Polytechnic Institute (United States) and Massachusetts Eye and Ear Infirmary (United States); J. Rosowski, J. T. Cheng, C. Scarpino, M. Ravicz, Massachusetts Eye and Ear Infirmary (United States)

- 7791 OK **Simulation of an interferometric computed tomography system for intraocular lenses** [7791-20]  
T. J. Tayag, Texas Christian Univ. (United States); B. L. Bachim, Univ. of Texas Southwestern Medical Ctr. at Dallas (United States)

---

**POSTER SESSION**

---

- 7791 OL **Multipoint gap measurement by low coherence tandem interferometry** [7791-23]  
S.-H. Lu, C.-Y. Chang, Feng Chia Univ. (Taiwan); C.-F. Kao, MingDao Univ. (Taiwan)
- 7791 OM **The key technologies research on the large field-of-view and high-resolution optical synthesis telescope** [7791-24]  
H. Wang, Q. Luo, Y. Zhu, W. Ma, Y. Zhang, Nanjing Univ. of Aeronautics and Astronautics (China); G. Y. Tian, Nanjing Univ. of Aeronautics and Astronautics (China) and Newcastle Univ. upon Tyne (United Kingdom)
- 7791 ON **Interferometric nanocomparator for calibrating precision displacement sensors** [7791-25]  
M. Cizek, Z. Buchta, B. Mikel, J. Lazar, O. Cip, Institute of Scientific Instruments of the ASCR, v.v.i. (Czech Republic)
- 7791 OO **Laser Doppler rotating disk speed imaging using a CMOS image sensor** [7791-26]  
J.-W. Choi, Honam Univ. (Korea, Republic of)
- 7791 OP **Research of disturbance detection based on a novel double Sagnac distributed fiber-optic sensor** [7791-27]  
H. Xu, Y. Zhang, Y. Feng, D. Zhao, Fudan Univ. (China)
- 7791 OQ **Application of fiber optic interferometer system in flyer plates velocity measuring** [7791-28]  
Y. Feng, H. Wu, H. Xu, D. Zhao, Fudan Univ. (China)
- 7791 OR **Integration of a fiber interferometer with a MEMS probe station** [7791-30]  
T. J. Tayag, Texas Christian Univ. (United States); T. Htun, TriQuint Semiconductor, Inc. (United States); E. S. Kolesar, Texas Christian Univ. (United States)

*Author Index*



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**John Watson**, University of Aberdeen (United Kingdom)

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**Cosme Furlong**, Worcester Polytechnic Institute (United States)  
**Christophe Gorecki**, Université de Franche-Comté (France)  
**Erik L. Novak**, Veeco Instruments Inc. (United States)
- 2 Shape and Deformation Measurements  
**Armando Albertazzi Gonçalves, Jr.**, Universidade Federal de Santa Catarina (Brazil)
- 3 Measurement of Dynamic Events  
**Ralf B. Bergmann**, Bremer Institut für angewandte Strahltechnik (Germany)
- 4 Novel Applications  
**James M. Kilpatrick**, MetroLaser, Inc. (United States)
- 5 Optical Metrology Systems  
**Cosme Furlong**, Worcester Polytechnic Institute (United States)  
**Christophe Gorecki**, Université de Franche-Comté (France)  
**Erik L. Novak**, Veeco Instruments Inc. (United States)

## Introduction

The growing demand for accurate and repeatable measurements of increasingly complex devices, especially in the semiconductor and MEMS industries as well as in the bio and outer space sciences, has driven the field of optical metrology to develop innovative methodologies capable of providing fast, precise, real-time assessments of components. While the range of techniques and technologies in interferometry is already vast, researchers strive to find solutions to new challenges that help make invisible things visible and to extend our vision further into outer space as well as into the nano-world and into the biological and medical fields.

Interferometry XV, which is a continuation of the Interferometry series, consists of two complementary conferences, one dedicated to Techniques and Analysis and the other to Applications. These two conferences present recent developments in analyses and techniques that use principles of interferometry to achieve highly precise measurements of different objects and their application to a wide range of systems. The proceedings of the two conferences comprising Interferometry XV are published in two separate volumes as Interferometry XV: Techniques and Analysis (SPIE Proceedings 7790) and Interferometry XV: Applications (SPIE Proceedings 7791).

This volume contains the proceedings of Interferometry XV: Applications, and consists of 25 papers: 2 invited, 16 contributed, and 7 posters. These papers address some of the pertinent work and illustrate the current status of developments in this field. They were grouped into five technical sessions: NDT and Subnano-Metrology; Shape and Deformation Measurements; Measurement of Dynamic Events; Novel Applications, and Optical Metrology Systems.

The two invited speakers set a high standard for the tone of the conference: Ralf B. Bergmann, who reviews developments relating to optical metrology and optical non-destructive testing from the perspective of object characteristics, and James M. Kilpatrick who discusses advances in the design and applications of a high-speed Doppler imaging vibrometer.

Contributions by all of the authors clearly show that interferometric methodologies are not merely laboratory curiosities, but that they have become accepted tools for obtaining solutions to a wide range of today's applications.

We thank SPIE, the program committee, the authors, and everyone attending this fifteenth Interferometry conference. SPIE continues to provide a forum for the exchange of ideas and dissemination of the latest research in interferometry and related fields. As a community, we come together at conferences such as this one to share not only our work, but also our professional vision. We reacquaint

ourselves with old friends and meet new colleagues. The value of these conferences comes from both the professional insight we gain and the relationships we foster.

Thank you very much for your participation!

**Cosme Furlong**  
**Christophe Gorecki**  
**Erik L. Novak**