

INVITATION

April 23th - April 24th 2024

11th European Seminar on Precision Optics Manufacturing



WELCOME

11th European Seminar on Precision Optics Manufacturing



EUROPEAN UNION
Investing in our Future
European Regional
Development Fund

11th European Seminar on Precision Optics Manufacturing, April 23th - 24th 2024
Deggendorf Institute of Technology
Technology Campus Teisnach Optics, Germany

Main topics

- Manufacturing and measurement of optics from mm- to m-range and optical systems: Processes for grinding, polishing, centering, assembly, handling, surface modification, cleaning and coating of optics
- Standards in optics manufacturing. Design of optics, error budgeting, fusion of optical and mechanical design, strategies for optical design within mechanical tolerances. Optical design SW: experiences, current developments, license models & alternatives
- Advanced and next generation technologies in high precision manufacturing: Ultraprecision machining, kinetic abrasive polishing, additive manufacturing, molding, new and special materials, next generation of giant optics manufacturing and testing
- Smart fusion of manufacturing and measurement of optics: Lessons learned in industry and research institutes in environment, media control, process stability, measurement, data handling and data mining
- Internet of things: Data handling and security within the value chain from optical design to manufacturing process, optical systems and their integrity and vulnerabilities

Conference language:

English

We are looking forward to meeting you at the 11th European Seminar on Precision Optics Manufacturing.

Yours sincerely,

Prof. Dr. Peter Sperber

Prof. Dr. Gerald Fütterer



PROGRAMME 1ST DAY

11th European Seminar on Precision Optics Manufacturing

Chairs: Dr. Oliver Föhnle, OST Eastern Switzerland University of Applied Sciences
Prof. Dr. Gerald Fütterer, DIT
Prof. Dr. Ing. Christine Wünsche, DIT
Prof. Dr. Helge Thieß, DIT

1ST DAY, TUESDAY, APRIL 23TH 2024

9:30 CHECK-IN

10:15 WELCOME

10:30 KEYNOTE

On the characterization of ultra-precise X-ray optical elements by means of ex-situ and at-wave-length metrology

Frank Siewert, Group leader Optical Metrology, Helmholtz Zentrum Berlin, D

11:10 SESSION 1 - METROLOGY

Round-robin test of Subsurface Damage characterization in Zerodur® using non-destructive optical coherence tomography

Samson Frank, Ernst-Abbe University of Applied Sciences Jena, D

Reticles in autocollimators: change in image quality due to changed coherence properties

Dr. Gerald Fütterer, Degendorf Institute of Technology, D

12:00 LUNCH

13:00 SESSION 2 - PLASMA BASED PROCESSES

New Reactive Ion Etching Process with Faraday Cage for Nanostructuring of Curved Optical Surfaces

P. L. Frenzel, University of Applied Science Zwickau, D

Ultra-precise processing of technical glasses by combining atmospheric pressure plasma jet and laser

Robert Heinke, Leibniz Institute of Surface Engineering (IOM), D

Characterization of manufacturing-induced microcracks in optical components

Heike Müller, Leibniz Institute of Surface Engineering (IOM), D

PROGRAMME 1ST + 2ND DAY

11th European Seminar on Precision Optics Manufacturing

Atmospheric pressure dielectric barrier discharge plasma-enhanced optical contact bonding of different types of optical glasses

Josefine Neumann, University of Applied Sciences and Arts Göttingen, D

14:30 COFFEE BREAK

15:30 SESSION 3 - SIMULATION AND APPLICATIONS

Flexibility analysis on precision glass molding by finite element method simulation

Carlos Marin Tovar, Fraunhofer Institute of Production Technology IPT, D

Light scattering sensors for in-line roughness and defect assessment of optical components

Marius Wyltschew, Fraunhofer Institute for Applied Optics and Precision Engineering IOF, D

Interferometrical thickness measurement device with nanometer uncertainty

Michael Kühnel, SIOS Messtechnik GmbH, D

16:30 LAB TOUR AND POSTER SESSION

18:30 GET2GETHER - BAVARIAN EVENING

2ND DAY, WEDNESDAY, APRIL 24TH 2024

9:00 SESSION 4 - GRINDING

Experimental approach to temperature measurement in the contact zone when grinding brittle-hard materials

Ghanshyam Babariya, Deggendorf Institute of Technology, D

Optimization of the surface quality of brittle-hard materials in CNC grinding processes based on vibration and topography analyses and the use of machine learning.

Marcel Binder, Ernst-Abbe University of Applied Sciences Jena, D

Opto-Mechanical Design and Assembling of Micro-Optical Component and Systems

Dirk Hauschild, Focuslight Inc., D

Cutting Behavior and Surface Defects in Ultra Precision Grinding of Glassy Carbon

Kirk Jahnel, Fraunhofer Institute of Production Technology IPT, D



PROGRAMME 2ND DAY

11th European Seminar on Precision Optics Manufacturing

10:30 **COFFEE BREAK**

11:00 **SESSION 5 - POLISHING AND AUTOMATIZATION**

Novel laser-based manufacturing chain for wafer-level mini-optics

David Bischof, OST-Ostschweizer Fachhochschule, CH

Impact of Preheating Conditions on Form Deviation During Laser Polishing of N-BK7 Glass

Manuel Jung, Fraunhofer Institute for Laser Technology ILT, D

Superfine magnetic-abrasive polishing

Dr.-Ing. Mikalai Khomich, POLIMAG, BLR

Feasibility of manufacturing microstructures on non-planar surfaces with UV curable resin using a 6-DOF inkjet printing system

Christoph Reck, Aalen University of Applied Sciences, D

Setting up an industrial robot for automated overarm polishing

Simon Killinger, Deggendorf Institute of Technology, D

12:40 **LUNCH**

13:30 **LAB TOUR AND DEMONSTRATION OF THE ROBOT CELL**

15:00 **END OF THE SEMINAR**