



Promotion of Young Scientists within the Field of Ultra-Precise Surface Engineering

## 12<sup>th</sup> High-Level Expert Meeting Asphere Metrology on Joint Investigations



Kompetenzzentrum  
Ultrapräzise  
Oberflächen-  
bearbeitung e.V.

Digital Event

15 – 16 March 2022

### Key Dates

### Organizational Details

#### YSA 2022

We are offering the Young Scientist Award for the third time in 2022. Young scientists (up to age 30) within the field of ultra-precise surface engineering will present their work with a short presentation and during a poster session. After the poster sessions it is up to you: elect the candidate of your choice! The award ceremony will take place on March 16.

### Digital Space

In addition to the main meeting room, where the program takes place, this digital format offers retreats for you and your discussion partners:

1. rooms for short joint breaks and discussion groups;
2. a room for industrial exhibitions;
3. a room for the YSA poster sessions;
4. a space to discuss the direction of future HLEMs.

#### Programme Committee

Jean-Michel Asfour; DIOPTIC GmbH,  
Andreas Beutler; Mahr GmbH  
Ines Fortmeier; PTB  
Thomas Franz; NTG GmbH & Co. KG  
Frank Löffler; CC UPOB e.V.  
Rudolf Meeß; CC UPOB e.V.  
Oltmann Riemer; Leibniz-Institut (IWT)  
Michael Schulz; PTB

Measurement Schedule	Dates
Application for measurements	is opened
Start of measurements	1 Juli 2021
Deadline for submission of author and title	30 October 2021
Deadline for performing measurements	15 December 2021
Deadline to submit your measured data for comparison	2 weeks after the end of your measurement period

#### Deadlines for Non-Measurement Contributions

Abstracts	30 October 2021
Registration for Industrial Exhibition	1 March 2022

The places are assigned according to the principle: first come first serve.

#### Participation Schedule

Registration Start	1 Juli 2021
Registration Deadline	1 March 2022

Date	15 – 16 March 2022
Language	English
Registration	by letter, fax or e-mail using the registration form available at <a href="http://www.upob.de">www.upob.de</a> . You will receive a confirmation notice.
Accommodation	<a href="http://www.upob.de/Veranstaltungen">www.upob.de/Veranstaltungen</a>
Technical Check, Setup & Testing	14 March 2022, 10:00–11:00 and 15:30–16:30

#### Attendance fee

Lecturers	€ 225 (1 person)
Members	€ 225
Non-members	€ 625

Please pay in advance after you have received the invoice.

#### Contact

CC UPOB e.V. c/o PTB  
Bundesallee 100 | 38116 Braunschweig  
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Fax: +49 (0)531 592 - 695131  
[info@upob.de](mailto:info@upob.de)  
[www.upob.de](http://www.upob.de)

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15 – 16 March 2022  
Online Only







## Background

Thanks to the high-quality HLEM measurement comparisons as well as the excellent professional exchange among experts, asphere measurement technology has become more and more comparable and precise. A great added value even for top manufacturers of measurement technology, who were able to achieve further progress despite the high level. Measurement technology users have learned a great deal about the various systems and their potential and benefited greatly from our series of events.

We will continue to meet this high standard at our next High Level Expert Meeting (HLEM). In addition to the important measurement comparisons that take place prior to the event, new accompanying topics such as the coating of lenses and optical surfaces are planned.

The award of the 4th Young Scientist Award (YSA) and an exhibition of the participating companies will round off the program.

**! WOULD YOU LIKE TO PARTICIPATE?  
THEN PLEASE  
REGISTER NOW!**

## Programme

15 March 2021

**8:45** Opening of the Meeting  
Room and Technical Check

**9:30** Welcome to HLEM 2021  
Conference Opening,  
Overview and Outlook  
*Frank Löffler, CC UPOB e.V., Germany*

YSA 2022 –  
Young Scientist Award 2022  
*Introduction and Short Lectures of  
Nominated Young Scientists,  
Moderation by Chair, Andreas Beutler,  
Mahr GmbH, Germany, and  
nominated speakers from  
different institutions*

Introduction to HLEM 2022 –  
Short Overview on Samples and  
Background of Measurements  
*Jean-Michel Asfour, DIOPTIC GmbH,  
Germany*

**Session**  
Measurement Technologies  
and Results

Capabilities of Point Scanning  
Techniques and Non-Null  
Interferometry for the  
Measurement of Complex Optics  
*Nils Geib; Mahr GmbH, Germany*

**11:00 Refreshment Break  
Breakout Rooms – YSA Poster &  
Technical Exhibition**

Non-Contact 3D Form  
Measurement of Large Optics  
by a Scanning Point  
Multi-Wavelength Interferometer  
*Marc Wendel; Taylor Hobson; Germany*

New Features for the NMF  
Platform Range of Machines  
*Rens Henselmans; Dutch United Instru-  
ments; The Netherlands*

Further Developments in Shape  
and Centration Measurement  
on Aspheres with New V-SPOT  
Technology  
*Engelbert Hofbauer and Ronald Kometer;  
Hofbauer-Optik Mess- und Prüftechnik;  
Germany*

**13:10 Lunch Break  
Breakout Rooms – YSA Poster &  
Technical Exhibition**

Panasonic UA3P: UPOB Sample  
Results – Technical News About  
the UA3P System  
*Reinhard Windemuth; Panasonic Connect  
Europe GmbH, Germany*

Misalignment in Asphere and  
Freeform Metrology  
*Antonia Gronle; University Stuttgart - ITO;  
Germany*

Asphere and Free-Form  
Measurement Comparison  
*Ines Fortmeier, Physikalisch-Technische  
Bundesanstalt, Germany*

Discussion on Comparison and  
Summary  
*Session Chair*

**15:45** Closing of First Day  
*Session Chair*

## Programme Next Day

**8:45** Opening of the Meeting  
Room and Technical Check

**Session**  
Coating of Aspheres

**9:35** Coating of Optical  
Components by Help of  
a Digital Twin  
*Chris Britze; Fraunhofer IST, Germany*

The Dielectrically Coated HAPLS  
Petawatt Laser Beam Transport  
Optics of ELI Beamlines  
*Stefan Borneis; Institute of Physics of  
the ASCR, ELI Beamlines Project; Czech  
Republic and GSI Helmholtzzentrum für  
Schwerionenforschung GmbH, Germany*

After each lecture is the opportunity for a short discussion. Please visit [www.upob.de](http://www.upob.de), you will receive detailed information about each session as well as last minute information relating this event.

## Programme

16 March 2021

Conformal Coating with Atomic  
Layer Deposition  
*Tobias Graumann; Fraunhofer IST, Germany*

**10:50 Refreshment Break  
Breakout Rooms – YSA Poster &  
Technical Exhibition**

**Session**  
Additional Topics

Measurement of Inner Centration  
of an Asphere with CGH  
Compared to the Optical  
Profilometer LuphoScan  
*Jean-Michel Asfour; Dioptric GmbH,  
Germany*

Active Display Registration in  
Phase Measuring Deflectometry  
*Yann Sperling; BIAS - Bremer Institut für  
angewandte Strahltechnik GmbH, Germany*

Project 'Free-Form Measurement':  
Standardized Measurement  
Procedures for Asphere Testing  
Using Pointwise Measurement  
Techniques  
*Technische Universität Braunschweig*

**12:50 Lunch Break  
Breakout Rooms – YSA Poster  
& Technical Exhibition**

Flexible Interferometric Form  
Measurement with Large  
Illumination Apertures Using  
Multiple Aperture  
Shear- Interferometry  
*Andre Fabian Müller; BIAS - Bremer Institut  
für angewandte Strahltechnik GmbH,  
Germany*

YSA 2022 – Young Scientist Award  
**Ceremony**  
*Moderation by Andreas Beutler;  
Mahr GmbH; Germany*

Summary and Final Discussion  
*Session Chair*

Conference Closing and Outlook  
*Session Chair*

**15:00** End of Event

## HLEM Lenses

**#5.1 Precision Cylinder**  
HLEM 2018/19/21/22 –  
sample #5 part 1  
provided by Berliner  
Glas

#6.1

**Convex Toroid**  
HLEM 2018/19/21/22 –  
sample #6 part 1 provided  
by Physikalisch-Technische  
Bundesanstalt  
marker manufactured by NTG

**#3.3 Asphere –  
Metal Optics**  
HLEM 2021/22 –  
sample #3 part 3  
provided by LT Ultra

**Double-sided Asphere**  
HLEM 2021/22 –  
sample #9 part 1  
for determining  
the inner  
centration

#9.1