

22 September 2016

New developments in measurement techniques for aspheres

Invitation to an experts' meeting which will be held by the Nanotechnology Competence Center *Kompetenzzentrum Ultrapräzise Oberflächenbearbeitung* (CC UPOB) in March 2017



Various aspheres (photo: CC UPOB)

Whether we are dealing with space telescopes whose lens systems have to be accurate to the nanometer despite their large dimensions or with cell phone cameras or endoscopes, aspheres are used in innumerable highly sensitive technical applications. On the one hand, these optical components must be increasingly small and efficient since the products they are fitted into are tending to become ever smaller; on the other hand, the quality requirements are constantly increasing. Aspheres are complex optical surfaces which it is extremely demanding to measure accurately.

Despite increasingly improving measurement techniques, there may still be large deviations

when comparing them with one another. It is therefore all the more valuable that experts – developers, manufacturers and users – have been consulting each other and exchanging their experiences for several years. The internationally well-established forum for such an exchange, the 8th *High Level Expert Meeting Asphere Metrology*, which has existed since 2010, is meeting again on 14-15 March 2017 at the Physikalisch-Technische Bundesanstalt (PTB) in Braunschweig. This meeting is organized by the *Kompetenzzentrum Ultrapräzise Oberflächenbearbeitung* (CC UPOB e. V.) which is based at PTB's site in Braunschweig and has now published its first message concerning this event with its call for papers which you can find at www.upob.de. The deadline for submitting your abstracts is 15 October 2016.

This is the meeting that no-one in this field can afford to miss. It is attended by all leading manufacturers and users of aspheres and measurement technology for aspheres. They know just how valuable this highly successful series of meetings is, for which CC UPOB was awarded a prize as early as 2012. With this prize, the Parliamentary State Secretary at the Federal Ministry of Economics and Technology expressed his sincere appreciation of CC UPOB's effective networking activities.

The 8th *High Level Expert Meeting Asphere Metrology (HLEM)*, which will, again, be accompanied by an industrial exhibition, aims to reflect the state of the art in the field and to present new developments and measurement procedures. A round robin comparison will, once again, be in the focus of the 9th *HLEM Asphere Metrology* in the spring of 2018. Hereby, all participants will measure different types of aspheres to be able to eventually compare and contrast them objectively with one another. This comparison is always carried out anonymously. It does not aim to assess or classify the capabilities of the different companies and their measurement procedures, but simply to further development in the field of aspheres in general. The meeting has therefore been very popular with industry in the past few

years, both for the comparison of measurement results and for the presentation of the latest developments as planned for the upcoming event. If you are interested, please register as soon as possible. The deadline for submitting your abstracts is 15 October 2016.

The organizers of the Competence Center *Ultrapräzise Oberflächenbearbeitung* have set a new focus for the 9th *HLEM Asphere Metrology* in the spring of 2018: Measurements and measurement procedures for small lenses, i.e. for aspherical micro-lens systems, as this field has experienced tremendous growth in the past few years. Apart from this, the thematic range addressed will be diversified, just like the wide and diverse market of aspherical and freeform lens systems.

es/ptb

Key areas of the 8th HLEM 2017 program

- new measurement methods for aspherical, freeform and cylindrical lenses
- measurement procedures for small precision lenses (e.g. in endoscopes, cell phones, sensors, etc.)
- in-situ measurement procedures for complex UP production lines for aspherical or freeform surfaces
- clamping techniques for measurements in the production of aspherical lenses
- standardization of the mathematical description of aspherical and freeform surfaces
- measurement of the aspherical surfaces of press molds for glass and plastic lenses
- influence of the coating on the measurement of aspherical and freeform lenses
- other topics related to the measurement and/or the production of aspheres and freeforms

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