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W3+ Fair Wetzlar 2022 - Product Preview

Hamburg, June 16, 2022. Four weeks before the opening of the W3+ Fair 2022 in Wetzlar (w3-fair.com), exhibitors are providing initial insights into which highlights and innovations they will be presenting in the fields of optics, photonics, electronics and mechanics from July 6 to 7. Many of the innovations create the basis for competitive products and solutions for many different application areas.

IBC Wälzlager GmbH: Non-corroding roller carriage system

The trade fair highlight of IBC Wälzlager GmbH is its innovative stainless steel INOX-Runner roller carriage system. It has been developed for all applications in which optimum corrosion protection is a top priority. Typical end-uses are in, for example, the food and beverage industry, medical technology, laboratory equipment and even maritime applications. INOX-Runner is dirt-resistant and can be used for low-temperature as well as high-temperature applications.

DIOPTIC GmbH: Automated inspection of optical surfaces

The ARGOS matrix 200 is a system for the automated defect inspection of optical surfaces. It reliably detects scratches, holes, edge chips and coating defects down to a size of 1 μ m. The tested components are evaluated according to ISO 10110-7 or customer specifications. In addition, ARGOS matrix 200 also provides detailed documentation of the surface quality based on objective and reproducible results.

IMT Masken und Teilungen AG: Micrometre and submicrometre structures in and on glass

IMT's core expertise lies in microtechnology, and it offers customer-specific solutions for micrometre and submicrometre structures on and in glass. Its broad process portfolio is based on semiconductor technology. IMT combines photolithography, optical coating technology and glass processing to manufacture high-precision and high-accuracy structures on customer-specific glass substrates. Possible areas of application include calibration reference structures, reticles and aperture plates, as well as diffractive elements and microfluidic components – almost anything where customer-specific microstructures can be used on and in the glass.

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Janitza electronics GmbH: Actively shaping the energy transition

At its stand this year, Janitza electronics GmbH is demonstrating innovative solutions for actively shaping the energy transition. For example, the UMG 96 PQ-L modular power analyser, for recording energy flows, is a significant step forward in making power grids more transparent. In the field of energy monitoring, the new GridVis® offers a solution for displaying and visualising energy data simply, quickly and transparently. In addition, Janitza is also exhibiting its new load management solution consisting of the new PROCONT system and the accompanying measurement technology.

Jenny Science AG with a world first

Swiss industrial automation specialist Jenny Science AG is bringing a genuine world first to W3+ Fair, which allows a linear motor axis to be connected directly to the PLC for the first time. INTAX®, the world's first highly integrated linear motor axis, removes the need for a servo-controller and control cabinet wiring. The PLC can be connected directly to the INTAX® axis with the Ethernet bus and it can start moving immediately with no reference run. This makes the construction of machines and devices more compact and lighter and saves on development time.

nortus Optronic: D7 interferometer

Interferometry is the first choice when it comes to measuring surfaces with high precision. nortus Optronic is presenting the D7 interferometer, a system that represents an innovative milestone in the field of interferometric measurement technology. It is a compact, user-friendly PSPDI system with an accuracy of lambda/1000 or 0.6 nm, which sets new standards in the field of interferometry.

SIOS Messtechnik GmbH: Measurement technology expertise

True to its motto, "Precision in Measurement", SIOS develops and manufactures high-quality precision measuring systems, interferometric measuring devices and stabilised He-Ne lasers for use in industry and science. The SIOS experts are real specialists in the field of high-precision length, angle, vibration, straightness, temperature, and force measurement. The products are used in applications where it is necessary to record exact measurement results with the highest resolution and low measurement uncertainty. Quality-oriented companies from all over the world trust in the solutions from this Top 100 Innovator 2022.

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TRIOPTICS – OptiSurf® LTM: the non-contact centre thickness measurement system

Since March, TRIOPTICS has been offering its services as an expanded competence and training centre at its new location in Wetzlar, which covers more than 700 m². Here, an air-conditioned workshop allows small-scale contract manufacturing for the centre turning of mounted optical assemblies. The showroom displays well-known and new products from the company's wide-ranging product portfolio. These include OptiSurf® LTM, the non-contact centre thickness measurement system. With its new LensGage attachment, measurements can now be made without having any knowledge of the lens material.

SCHUNK ADHESO with bio-inspired gripper technology

SCHUNK ADHESO bio-inspired gripper technology enables the gentle and residue-free handling of the most sensitive parts, opening up a wide range of new applications. Individually adapted plastic pads made of special polymers on the grippers reproduce the fine hair structure on the feet of geckos. This allows a wide variety of parts to be gripped and held securely without external energy. The gentle and low-noise adhesive technology does not require compressed air, a vacuum or electricity.

Befort Wetzlar OD GmbH: Centenary

The family-owned company Befort Wetzlar OD GmbH is celebrating its 100th anniversary this year. As one of the leading companies for customerspecific opto-mechanical components and assemblies, Befort Wetzlar develops, manufactures, and assembles precision optical products for specialist applications: from individual lenses to seamless system integration, and from special optics to complex opto-mechanical assemblies of the highest quality. In addition to its expertise in the manufacturing of optical products and spherical and plane optics, Befort Wetzlar is also a coating and precision engineering specialist.

Carl Zeiss Sports Optics - innovative optics for hunting

Founded in 1846 as an optical workshop, ZEISS is now a globally active and innovative manufacturer in the fields of photography, cinematography, wildlife observation, hunting and sport shooting. Constant further developments and exciting innovations provide customers worldwide with unique experiences. Most recently, ZEISS presented a particularly

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lightweight pair of binoculars (ZEISS SFL 40) and innovative thermal imaging optics (ZEISS DTI 3 and DTC 3) for hunting. The portfolio is rounded off by digital applications (the ZEISS Hunting App) and active support for young hunters with the Waidgefährte programme.

ACKTAR: Deep black coatings for measurement systems

For reliable signal acquisition, even with interference such as stray light and reflections, the deep black Acktar coatings absorb unwanted stray light and noise caused by direct or reflected light in optical systems. AcktarBlack maximises signal acquisition accuracy and measurement performance. Even on dark, reflective or translucent surfaces, the signal quality is excellent for making reliable measurements. Acktar products are particularly suitable for system manufacturers who place a strong emphasis on the precision, quality, and reliability of their measuring systems.

Schneider Digital: Virtual reality in CAx applications

With the VR PluraView Monitor, the term "3D CAD" now takes on a completely new meaning for CAx, construction and design. The innovative VR system makes working in virtual reality environments and stereoscopic visualisation in construction and design a reality. The new VR PluraView will be shown by Schneider Digital in Wetzlar and is a passive virtual reality stereo monitor. As a fully-fledged VR/AR desktop system, it is based on the successful 3D PluraView monitor from Schneider Digital. Equipped with a high-tech tracking system, the VR PluraView now allows interaction with 3D stereo models and content across all axes.

3DDrucker.de: Additive manufacturing made easy

At the 3DDrucker.de stand, visitors to W3+ Fair will not only find information about the FDM and PolyJet 3D printing processes, but the company will also provide information about innovations in the field of series production using powder and DLP techniques. Here, world market leader Stratasys, of which 3DDrucker.de is a platinum partner with over 15 years of experience in additive manufacturing, has added three new 3D printing technology areas in the last year. In Wetzlar, it will be demonstrated how additive manufacturing can be used to produce injection moulds and tools more quickly and cost-effectively.

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HETEROMERGE: Multi-material 3D printing

Fast and convenient multi-material 3D printing on two-photon laser lithography systems: substrate-independent, wafer level, with no size restrictions. HETEROMERGE enables for the first time

- Multi-material prints with the highest resolution (up to 150nm) on typical substrates used in microsystem manufacturing for passive and active structures.
- Automated changes of material to shorten working times and avoid error-prone manual operations.
- The highest realignment accuracy (up to 10nm) of the print head after changes of material for a continuous print image during the changeover between materials.

Nijdra Group - planning and development

The Nijdra Group has had a cooperation partnership with the German engineering service provider B&W Engineering und Datensysteme GmbH since 2020. The aim of this cooperation partnership is to be able to offer customers a complete package, from product development to production and logistics. In this specific case, it involved the development of a calibration system or optomechatronic adjustment module for medical precision microscopes. The feedback from the management of B&W regarding the approach of the Nijdra Group is extremely positive: "You did a really great job with the assembly of the prototypes, and I would also like to thank you for your commitment and the high-quality work you did in a short space of time!"

Steinmeyer Mechatronik - customised positioning systems

As a specialist for customer-specific specialist solutions, Steinmeyer Mechatronik has many years of expertise in the development of customised positioning systems and creates assemblies that are precisely tailored to customer requirements. Applications in the fields of life science and research place the highest demands on precision and stability. With its new sample manipulator for use in analysis, Steinmeyer Mechatronik fully meets these requirements. Also present at W3+Fair in Wetzlar will be a transmitted-light XY stage for screening tasks and a focus linear axis, which Steinmeyer Mechatronik has developed especially for demanding, lowemission applications in clean rooms under vacuum and high vacuum.

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bwh Spezialkoffer GmbH: Making an impression with its own case solution

The specialists at bwh Spezialkoffer GmbH demonstrate that the development of customised specialist cases can also quickly become affordable for smaller companies, using as an example a small but industry-leading manufacturer of high-quality gas sampling and gas measuring systems at stand E13 at W3+ Fair in Wetzlar. Its customers include experts, engineering companies, testing laboratories and specialist departments of industrial companies that sample and measure gases and airborne pollutants. With the bwh special case manufacturing, a case has been developed from which work can be carried out directly. It is suitable for construction sites, optimally protects the sensitive measuring technology inside and allows the accessories to be stored in a space-saving manner.

Polytec: White-light interferometer for examining the finest structures

Advances in microsystems technology and microelectronics are increasing the demand for measuring structural details, for example for characterising channel depths and edge profiles on a lab-on-a-chip, for measuring step heights, coplanarity and other packaging parameters, or for characterising MEMS based on their 3D structural profiles and derived surface parameters. Polytec is showcasing the TopMap Micro. View+, a high-resolution microscope-based white-light interferometer for such applications, at its stand in Wetzlar. As well as height measurements, it also provides colour information (RGB) from the measurement object, which simplifies defect classification.

ELI BEAMLINES – Laser Research Centre

The ELI Beamlines Facility is a leading laser research centre and part of ELI (Extreme Light Infrastructure) pan-European Research Infrastructure hosting the world's most intense lasers. ELI provides unique tools of support for scientific excellence in Europe. ELI Beamlines developed and operates four leading edge high-power femtosecond laser systems and offers to its users unique femtosecond sources of X-rays and accelerated particles. These beamlines enable pioneering research not only in physics and material science, but also in life science, laboratory astrophysics, and chemistry with strong application potential.

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TNO - Centre for Optics Manufacturing

The TNO Centre for Optics Manufacturing produces complex, metal-based reflective optics utilizing Single Point Diamond Turning, MRF-polishing and Coating. TNO also offers MRF-polishing services for semi-finished glass-type products. The focus lies on free form optics and our generic manufacturing and measurement capabilities are targeted to prototyping, breadboarding, one-off's and small series. In an N-Tec Talk titled: Manufacturing metal free form mirrors by SPDT and MRF, a perspective of single digit nanometer surface form accuracy, Dr. ir. André Hoogstrate, will discuss TNOs latest developments.

You can find pictures of the products here

Further information at w3-fair.com

The W3+ Fair at a glance:

- W3+ Fair Wetzlar 2022 (only 30 min. away from Frankfurt International Airport)
- 6 + 7 July 2022, Buderus Arena Wetzlar
- Tickets: 25 Euro/ 40 Euro

About the W3+ Fair

The event traces its roots back to an industry imitative organised in Wetzlar and Mittelhessen, and its objective is to interlink the four sectors of optics, photonics, electronics and mechanics. The aim is that new interfaces and points of contact will pave the way for forward-looking technologies. The trade fair debuted at the Rittal Arena in Wetzlar in February 2014. The W3+ Fair is organised by the Hamburg-based company, FLEET Events (www.fleet-events.de). In September 2019, the W3+ Fair Rheintal celebrated its premiere in the transnational region of Austria, Switzerland, Liechtenstein and Germany, with EPIC, Swissphotonics and Photonics Austria as its Gold Partners.

About Fleet Events

Fleet Events GmbH, based in Hamburg, is one of Germany's leading private trade fair and conference organisers. In cooperation with its subsidiaries Fleet Education Events and CE Chefs Events, the company, set up in 2006, designs and stages consumer and business events such as Babini (previously Babywelt), Eat&Style and Heldenmarkt, professional events such as Chef-Sache, W3+ Fair and Photonics+, as well as the educational conferences DSLK, ÖSLK, DKLK, ÖKLK, HRocks and DILK. Fleet Events has developed, through its subsidiary Fleet X, its own online event platform using Xircus, allowing it now to offer online and/or hybrid events too. Overall, Fleet Events organises nowadays more than 50 major events a year, both

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live and online. This company with more than 60 employees is run by shareholders Dr Thomas Köhl and Christoph Rénevier.

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