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Press Release

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LASER World of PHOTONICS 2017

Entering new dimensions of industrial production with Photonics 4.0

Laser technology and modern sensors are paving the way to digital production. Thanks to Photonics 4.0 simulation, digital design and real production processes are growing ever closer together. During the leading world trade fair [LASER World of PHOTONICS](#) in Munich from June 26–29, 2017, leading manufacturers and research institutes will present tailor-made solutions for tomorrow's networked and highly automated world of production.

Light is the most important tool in the 21st century. In semiconductor factories UV lasers and [high-performance optics](#) are ensuring increasingly more efficient and cheaper microprocessors. The broadband Internet would be inconceivable without optical data transmission. Cost-efficient, perfect miniaturization is only feasible with accurate measuring and inspection systems. The three cornerstones of Industry 4.0 are thus defined: Inexpensive processors, efficient data networks and precise process monitoring. At its core, Industry 4.0 is therefore Photonics 4.0.

From digitally controlled laser processes...

However, photonics is not only the basis of networked production, it is also the driving force to an increasing extent. In particular, precisely applied and digitally controlled laser technology is now absolutely essential. Lasers [drill](#), [cut](#), [solder](#),

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[weld](#), and [perforate](#). They [harden](#) steel and process [metals](#), [plastics](#), [glass](#), [diamonds](#), wood and ceramics , and many other materials with extreme precision.

The concentrated light works without contact. It therefore does not introduce any mechanical forces into the processes and, conversely, is not affected by wear and tear. Other advantages of laser technology include its high degree of flexibility and speed. However, the greatest potential for digital production is cold material processing using ultrashort laser pulses.

... to digital production

Modern ultrashort pulse lasers have frequencies up to the megahertz range together with high pulse energies. Metals and many other materials can therefore almost be removed atom by atom. Heat influx into the workpiece is minimal. Unwanted melts and material splatters no longer occur. Translated to the digital production world of Industry 4.0, this means the following: Material processing pixel by pixel. Simulations and digital design match real processes more precisely than ever before. “We talk about digital processing because lasers carry out previously simulated processing exactly in digital process chains,” said Prof. Andreas Ostendorf, the long-standing President of the Scientific Association for Laser Technology (WLT), recently in the [LASER World of PHOTONICS Newsletter](#).

Entirely new paths to three-dimensional processing

A second photonics mega trend is also leading directly to digital production. Additive manufacturing; i.e. tool-free application and removal of metal or plastic components using 3-D printing and [laser deposit welding processes](#). Lasers translate digital design data into real components in this case.

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A large number of players from this young technology sector will present a wide range of processes during LASER World of Photonics 2017 in Munich from June 26–29, 2017: Miniaturized metal printing, micro processes for additive processing of glass and other transparent materials, manufacturing of 3-D micro and nano structures made of photosensitive materials or laser melting processes for steel, cobalt-chromium and precious metals such as gold and silver. During the trade fair not only leading manufacturers and [solution providers](#) will present their latest innovations. The Application Panels *Laser and Optics* in Hall B3 and *Industrial Laser Applications* (Hall A3), as well as the Lasers in Manufacturing Conference [LiM 2017](#) during the WORLD of PHOTONICS [Congress](#) will also focus on light as a production factor, as well as the 340 exhibitors who have their focus on this topic.

LASER World of PHOTONICS

The LASER World of PHOTONICS is the world's leading platform of the laser and photonics industry. World of Photonics Congress, Europe's largest photonics congress, will be taking place in parallel with the trade fair. The program comprises five scientific conferences of leading global organizations. Supplementing this Messe München will be offering practical lectures on the applications of photonics ("Application Panels"). The combination of trade fair and congress brings together research and application, thereby promoting the use and continued development of optical technologies. In 2015 the trade fair set an exhibitor record with 1,227 exhibitors from 42 countries. A total of 31,279 trade visitors from 72 countries entered the Messe München site. In 2015 the World of Photonics Congress registered 5,600 participants with an offering of more than 2,700 lectures and presentations including poster presentations.

The LASER World of PHOTONICS has been organized every two years by Messe München since 1973; the next event will take place in Munich from June 26-29, 2017, the next World of Photonics Congress will take place in parallel from June 25-29, 2017 in the ICM - International Congress Center Munich. www.world-of-photonics.com/index-2.html

The LASER World of PHOTONICS global network

LASER World of PHOTONICS has developed an international trade fair network. LASER World of PHOTONICS in Munich is the world's leading platform of the laser and photonics industry. World of Photonics Congress is Europe's largest photonics congress. LASER World of PHOTONICS CHINA and LASER World of PHOTONICS INDIA are leading regional trade fairs for laser and

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optical technologies and are staged annually in China (Shanghai) and India (alternating between Bangalore and New Delhi). With a total of 2,168 exhibitors and more than 83,000 visitors in Munich, China and India, Messe München is the world's leading trade fair organizer for lasers and photonics.

Messe München

Messe München is one of the world's leading trade-show companies. It organizes some 40 trade shows for capital and consumer goods and key high-tech industries in Munich and abroad. Each year more than 30,000 exhibitors and some two million visitors take part in events held at the Messe München trade-fair center, the ICM – Internationales Congress Center München and the MOC Veranstaltungszentrum München. In addition, Messe München organizes trade shows in China, India, Turkey, South Africa and Russia. Messe München has a global business presence with affiliates in Europe, Asia and Africa and more than 60 foreign representatives serving more than 100 countries.

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