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PHOTONICS

Messe München,
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22 - 25 June 2015

Welcome to **Laser Focus** magazine from **optics.org**. In this exclusive publication you'll find some of the latest news on the big names in materials processing, lasers and photonics applications as well as a round-up on some of the latest products available at the show.

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Looking for a job? Timmo Mappes, Director of Microscopic Imaging at **ZEISS** Corporate Research & Technology gives us his 10 point plan on how to get hired. – page 15

All change at **Rofin Sinar** as Günther Braun steps down as CEO. – page 30

Plus news on **Jenoptik**, **GSI**, **Trumpf** and a host of other news stories from the world's leading laser manufacturers.

If you've got a story to tell or want to promote your latest products or news, contact a member of the **optics.org** team.

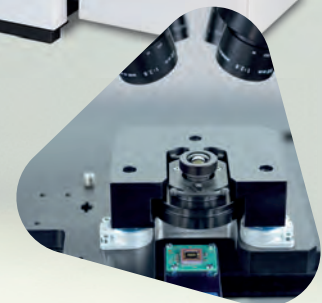
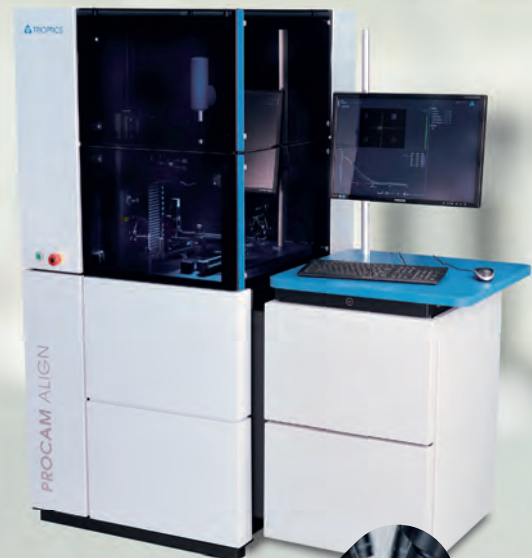
There are 2 more magazines published in 2015 including the **optics.org Product Focus** for both the **Optics+Photonics** (San Diego, CA) and **Optifab** (Rochester, NY) exhibitions.

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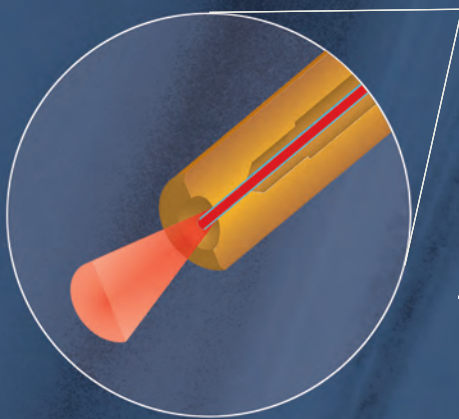
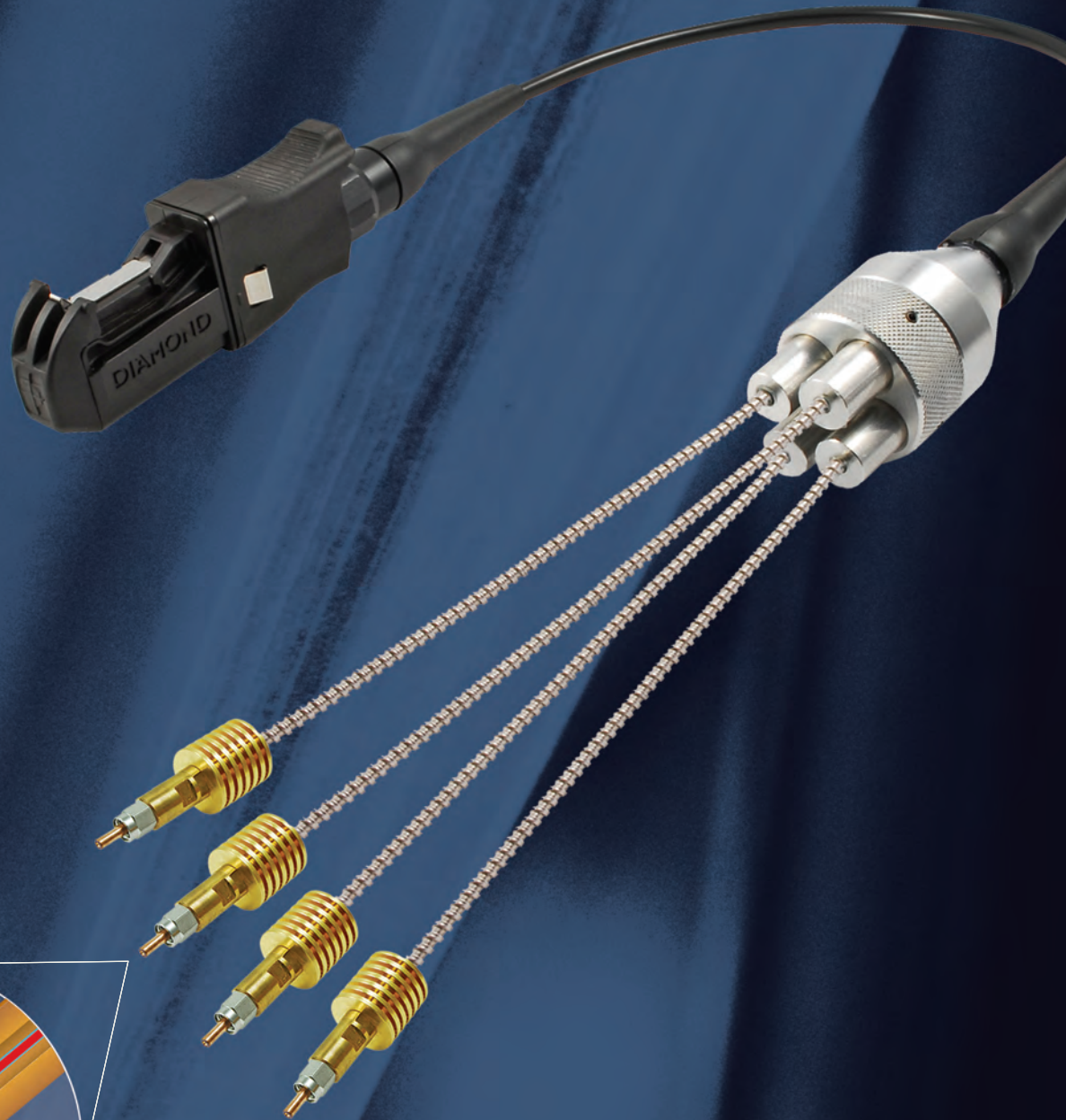


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LASER World of PHOTONICS

fairs in Munich. As trade organizers we want to be pioneers and a source of stimulus. Transferring this concept to other Messe München events will further strengthen Bavaria as a technology location."

Prize details - updated 8 April

The Photonics Award 2015 will reward the best product innovations in two categories. The prize pool has a total value of €50,000 including cash, exhibition space, visibility, marketing and business support.

Photonics Technology Award

1st Place

- €5,000 grant
- Free exhibition stand at Startup World 2015
- Comprehensive marketing package provided by AZO and Messe München
- Pitch at Awards Ceremony at LASER Forum
- Coaching and business support

2nd and 3rd Places

- Free exhibition stand at Startup World 2015
- Pitch at Awards Ceremony at LASER Forum
- Coaching and business support

3D Printing Award

1st Place

- €5,000 grant
- Free exhibition stand at Startup World 2015
- Comprehensive marketing package provided by AZO and Messe München
- Pitch at Awards Ceremony at LASER Forum
- Coaching and business support

2nd and 3rd Places

- Free exhibition stand at Startup World 2015
- Pitch at Awards Ceremony at LASER Forum
- Coaching and business support

<http://optics.org/news/6/3/48>

Laser World of Photonics launches 'Start-up World'

Dedicated new company zone plus €50,000 prize competition at Munich expo aims to be "innovation platform" for young photonics companies.

A new addition to this year's Laser World of Photonics will be a dedicated marketplace for "young up-and-coming companies". The Laser expo will take place in Munich, Germany, between 22-25 June at the usual Messe München venue.

The new exhibition area, which will be called Start-up World, is being created in collaboration with nearby hi-tech aerospace hub Anwendungszentrum GmbH Oberpfaffenhofen (AZO).

Prizes, which include financial awards, exhibition opportunities and marketing support (see below), will be awarded to the best ideas from the photonics competition. The jury chairman and sponsor of the initiative is Falk Strascheg, a successful company founder and experienced venture capitalist.

The proposed photonics competition being organized as part of Start-up World covers the entire range of optical technologies in two categories. Besides a general category including all aspects of the optical technologies sector, there is also 3D printing with its own dedicated prize category. The competition is open to national and international technology sector start-up companies that are not more than five years old.

The prerequisite is the presentation of products or prototypes ready for market, which are on the verge of, or are in, the market implementation phase. The registration deadline for potential entrants and partners is 7 April–10 May. Registration information is here.

'Superlative network'

A jury of experts is being appointed to select the winners. Falk Strascheg will chair the jury and support the initiative as its patron.

Laser WOP commented, "Strascheg possesses the best possible credentials for this role: as a successful company founder and very experienced venture capitalist, he is intimately acquainted with the specifics of the photonics industry and boasts a superlative investor network."

Falk Strascheg said he welcomes this new assignment and emphasized the importance of the start-up platform: "After the founding phase, market access is a critical milestone for young companies. Laser World of Photonics is the ideal platform for such companies to develop an industry network and attract potential investors.

"Start-up companies are an important source of innovative ideas. There is a real transfer of knowledge on platforms such as these. Established photonics industry players also have the opportunity to meet highly talented, potential employees."

Dr. Reinhard Pfeiffer, Deputy CEO, Messe München, is expecting Start-up World to be beneficial for partners, sponsors and the wider industrial community in Bavaria and beyond: "We first unveiled the start-up format at Munich's Automatica show in 2014.

"Our objective now is to increase the innovative capability of technology trade

Laser sales up solidly at GSI

Carbon dioxide and fiber lasers each contribute to a 7% increase in revenues in US firm's latest fiscal year.

The laser products division of GSI Group has reported a solid increase in its sales for 2014, with revenues growing 6.7 per cent over the 2013 figure to \$177.7 million.

Despite GSI's strategic move into medical technologies over the past couple of years, the laser division remains its largest in terms of revenues. And although the general trend is strongly towards using fiber lasers for industrial applications, CEO John Roush told an investor call to discuss the latest quarterly results that the company was seeing strong demand for carbon dioxide sources.

"We're seeing strong CO₂ laser demand in marking and coding applications driven by the ongoing shift from inkjet to laser markings in food and beverage and pharmaceutical processing plants," Roush said. "We're also seeing increased CO₂ laser opportunities in new applications for us such as organic material processing for smartphones, apparel and sporting goods."

GSI's fiber laser activity remains small in comparison to the likes of IPG Photonics and Rofin-Sinar, but Roush reported that the sub-division was now operating profitably, with sales up 50 per cent on 2013.

"The current management team has done a strong job of ramping up the business while selectively pursuing the right growth opportunities for us in this increasingly competitive space," the CEO said.

The increase in revenues for GSI's laser division also came in spite of the sale of its "Continuum" scientific laser brand to France-based Amplitude for \$6.5 million in July last year.

Laser Quantum income boost

GSI also holds a substantial equity position in Laser Quantum – owning 41 per cent of the UK-headquartered business as of December 31. According to GSI's latest 10-K annual filing with the US Securities & Exchange Commission (SEC), in 2014 Laser Quantum delivered a net income of \$6.6 million on annual sales of \$23 million – both figures up strongly on 2013.

That provided GSI with an additional \$1 million of income in the closing quarter of the year, helping to offset the net loss of \$34.2 million that the US firm posted for the same period. However, that quarterly loss figure includes a \$41.4 million non-cash charge relating to the acquisition of medical displays company NDS Surgical Imaging back in January 2013.

Meanwhile GSI's precision motion division, which includes the MicroE and Westwind

applications as our optical encoders," he said.

Overall, the company is expecting to post another solid increase in annual revenues this year, and is targeting a figure of \$380 million after taking into account the negative effects of recent changes in currency exchange rates.

"I am very pleased with our strong finish to 2014," Roush said. "By leveraging the

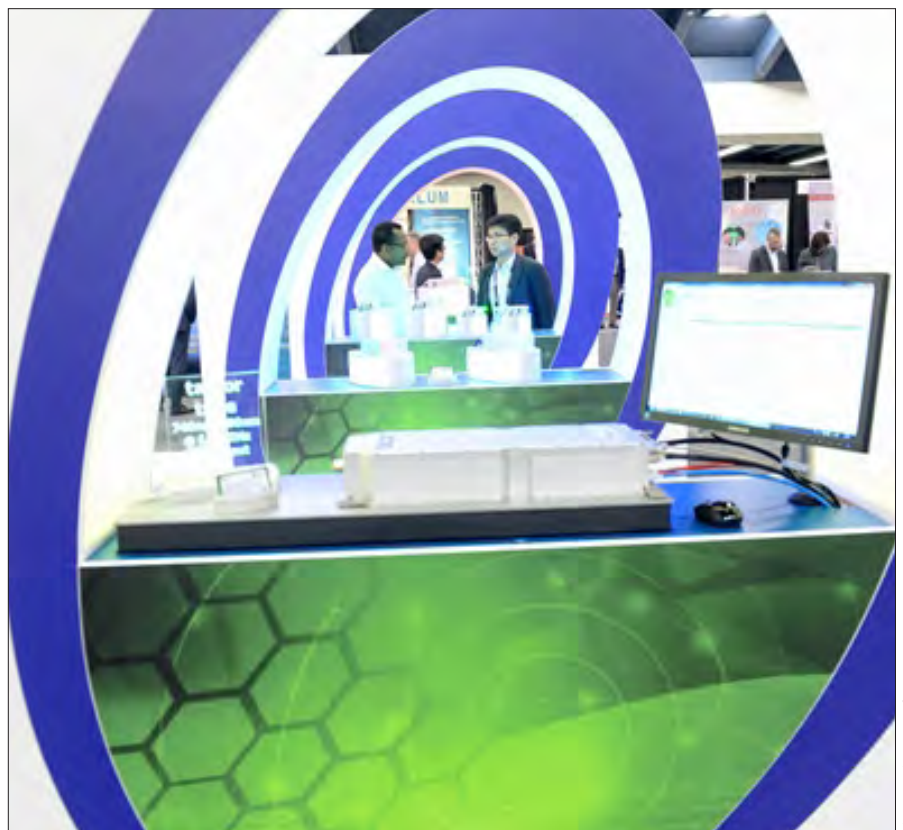


Photo: Trish Tunney for SPIE.

Laser Quantum's booth at the recent Photonics West 2015 exhibition. GSI owns a 41% equity stake in the UK-headquartered laser company.

brands (Cambridge Technology is part of GSI's laser products business)*, generated \$64.8 million in revenues during 2014, up nearly 8 per cent on 2013. That increase was driven primarily by stronger sales of optical encoders, Roush reported, highlighting applications in 3D scanning and robotics.

GSI has just completed the \$30 million cash acquisition of California-based Applimotion, which Roush says fits closely with its optical encoder activities. "In many cases, Applimotion products are used by the same customers in the same

success of our productivity initiatives and investing in new products for both advanced industrial and medical applications, we believe we are well positioned to deliver profitable revenue growth in 2015."

GSI's Nasdaq-listed stock appeared relatively unmoved by the latest update, with the company maintaining a market capitalization of around \$420 million.

<http://optics.org/news/6/3/11>

Sponsored Editorial

Femtosecond optics

Altechna

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At Altechna we specialize not only in laser optics but also in femtosecond optics. Since the very beginning of the company in 1996 we have accumulated a large deal of experience helping our customers to tame sub-picosecond pulses.

The market for femtosecond optics has grown over the decades since the introduction of first sub-picosecond lasers in 1990s but it still remains quite small compared to longer pulse or CW lasers and all the optics available for such lasers. Conventional optics and coatings will inevitably end up by either distorting the temporal characteristics of the pulse, being damaged by high peak power of the pulse, or both.

Optical materials possess a specific quality when the phase velocity of light inside the material dependent on the frequency (or wavelength), or equivalently when the group velocity depends on the frequency. This is called chromatic dispersion or group-velocity dispersion (GVD). The latter is measured in units of s^2/m or fs^2/mm . It's most convenient to define GVD for optical materials (glasses, fibers etc) in order to evaluate how much your pulse will stretch or compress by using different thickness/length of material. For optical components an alternative measure called the group delay dispersion (GDD) is used. GDD characterizes dispersion for the optical whole component without the need to take thickness/length into consideration.

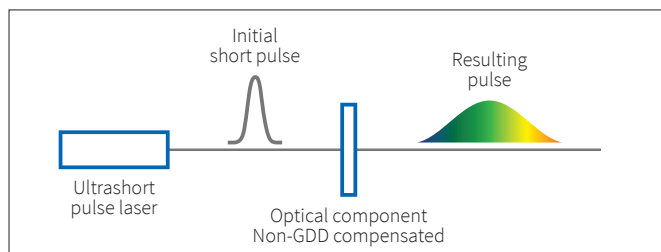


Figure 1. Schematic representation of ultrashort pulse spreading after a non-GDD compensated optical component is introduced to the setup.

GDD is usually an unwanted effect because stretched ultrashort pulse will lose its two main properties: it will no longer be ultrashort and its peak power will distribute within the stretched pulse (please refer to figure 1). Usually, the only case where pulse stretching is a sought-after effect is in ultrashort pulse amplifiers which stretch the pulse, amplify it and compress it again.

Ultrafast optics – what is out there?

As mentioned in the very beginning of this article, femtosecond optics market is not so big compared to market for longer pulse or CW optics. Nevertheless, there are a few solutions out there to deal with femtosecond pulses.

Altechna offers the following optical components to deal with most activities related to ultrashort phenomena.

1. Generation of ultrashort pulses
 - a. Yb:KYW/KGW crystals
 - b. Ti:Sapphire crystals
2. Maintaining temporal properties of the pulse:
 - a. Low GDD mirrors
 - b. Ultrafast thin film polarizers
 - c. Watt Pilot - Motorized Attenuator, Ultrafast Version
 - d. Reflective beam expander
3. Compensating stretched pulse:
 - a. Gires-Tournois Interferometer (GTI) mirrors
4. Stretching the pulse
 - a. Brewster angle dispersing prisms

Needless to say, these optical components not only femtosecond friendly they are also optimized for high peak powers and are available at Altechna.

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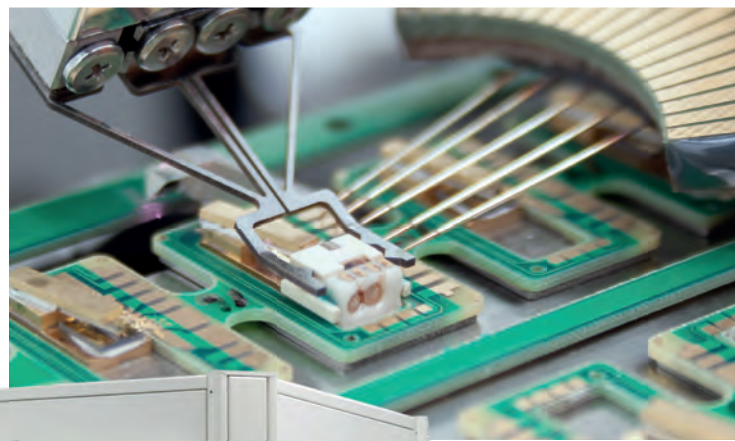
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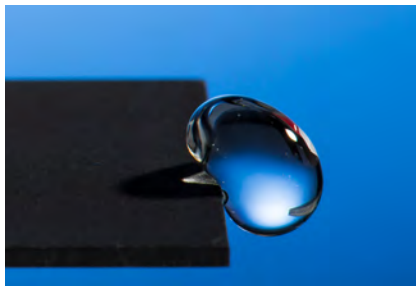
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Laser processing creates 'super-hydrophobic' metals

Scientists at University of Rochester say properties promise better solar panels, sanitation and rust-free metals.

Scientists at the University of Rochester, NY, USA, have used lasers to transform metals into extremely water repellent ("super-hydrophobic") materials without the need for temporary coatings. Super-hydrophobic materials are desirable applications such as rust prevention, anti-icing, or even in sanitation uses. However, as Rochester's Chunlei Guo explains, most current hydrophobic materials rely on chemical coatings.

In a paper published in the *Journal of Applied Physics*, Guo and his colleague at the University's Institute of Optics, Anatoliy Vorobyev, describe a laser-processing technique that creates an intricate pattern of micro- and nanoscale structures, giving the remarkable properties.



Photos: J. Adam Fenster, University of Rochester.

Water just bounces off hydrophobic, laser-treated metal surface.

Permanently hydrophobic

Guo states that this technique can create multifunctional surfaces that are not only super-hydrophobic but also highly-absorbent optically. "One of the big advantages of this process is that the structures we create are intrinsically part of the metal's surface - so they won't rub off. It is these patterns that make the metals repel water.

"The material is so strongly water-repellent, the water actually bounces off. Then it lands on the surface again, and bounces off again, then it will just roll off the surface," said Guo, professor of optics in the University's Hajim School of Engineering and Applied Sciences. "The whole process takes less than a second."

The materials Guo has created are much more slippery than Teflon—a common hydrophobic material that often coats nonstick frying pans. Unlike Guo's laser-treated metals, the Teflon kitchen tools are not super-hydrophobic. The difference is that to make water roll off a Teflon-coated material, it needs to be tilted at nearly 70 degrees before the water begins to slide, whereas water slides off Guo's metals at a tilt angle of less than five degrees.



Professor Chunlei Guo (l) with Anatoliy Vorobyev, of Rochester's Institute of Optics.

As the water bounces off the super-hydrophobic surfaces, it also collects dust particles and takes them along for the ride. To test this self-cleaning property, Guo and his team took ordinary dust from a vacuum cleaner and dumped it onto the treated surface. Roughly half of the dust particles were removed with just three drops of water. It took only a dozen drops to leave the surface spotless. Better yet, it remains completely dry.

Funding from Bill Gates

Guo is excited by potential applications of super-hydrophobic materials in developing countries. It is this potential that has piqued the interest of the Bill and Melinda Gates Foundation, which has supported the work.

"In these regions, collecting rain water is vital and using super-hydrophobic materials could increase the efficiency without the need to use large funnels with high-pitched angles to prevent water from sticking to the surface," says Guo. "A second application could be creating latrines that are cleaner and healthier to use."



Easy-clean: Potential applications include low-maintenance sanitaryware.

Latrines are a challenge to keep clean in places with little water. By incorporating super-hydrophobic materials, a latrine could remain clean without the need for water flushing.

But challenges still remain to be addressed before these applications can become a reality, Guo states. It currently takes an hour to pattern a 1 inch by 1 inch metal sample, and scaling up this process would be necessary before

it can be deployed in developing countries. The researchers are also looking into ways of applying the technique to other, non-metal materials.

How they did it

In the study, the *Journal of Applied Physics* reports, the research team used an amplified Ti:sapphire laser system that generates 65fs pulses with a central wavelength of 800nm and at a maximum pulse repetition rate of 1 kHz. The laser beam is focused onto the sample surface by a lens onto a sample mounted on a translation stage.

"The study samples are platinum, titanium, and brass. Each sample is textured with an array of parallel microgrooves covered by extensive nanostructures. The platinum sample is processed at laser fluence of 9.8J/cm². The titanium sample is processed at laser fluence of 7.6J/cm².

"Brass is processed at laser fluence of 3.9J/cm². The orientation of microgrooves is controlled by the scan direction. A scanning electron microscope and a 3D laser-scanning microscope examine the surface structures. Superhydrophobic properties are studied by measuring both water contact angle and the surface tilt angle for water sliding.

"The self-cleaning properties are studied with real-life dust particles collected from a vacuum cleaner. For cleaning, the researchers use rolling and falling water drops. The rolling drops with nearly zero kinetic energy are produced by pipetting water drops near the sample surface, while the falling drops are produced by pipetting drops at a height of 3–8cm above the sample surface."

Guo is keen to stress that this same technique can give rise to multifunctional metals. Metals are naturally excellent reflectors of light. That's why they appear to have a shiny luster. Turning them black can therefore make them very efficient at absorbing light. The combination of light-absorbing properties with making metals water repellent could lead to more efficient solar absorbers – which would neither rust nor need much cleaning.

Guo and Vorobyev's work is described in the following University of Rochester video: https://www.youtube.com/watch?v=FLegmQ8_dHg

<http://optics.org/news/6/1/33>

Sponsored Editorial

CDA – We inspire and manufacture value!

Optoelectronic components and microfunctional optofluidic devices in plastic

CDA GmbH (Suhl, Germany) is an established manufacturer of custom components and solutions in plastic. CDA's technology portfolio includes polymer optical elements and arrays for use in optoelectronics, automotive (HUD), virtual reality (VR) and 3D sensing applications. Portfolio for microfluidic structures include channels, pillars, functionalized surfaces sometimes



combined with conductive polymer printing for the use in point-of-care, diagnostics, environmental monitoring and forensic screening applications.

Optical elements

Individual elements can comprise diffraction-limited refractive structures or diffractive

structures optimized to provide the best efficiency for the intended application. Custom designed products include:

- DOEs (binary and multilevel)
- gratings, line generators, etc.
- collimators, Fresnel lenses, custom lens arrays
- diffusers and mirrors
- optical encoders

A recent development is the ability to stack multiple optical layers in order to further customize performance.

Optical Module Assembly

CDA offers optical module design, prototyping and high volume assembly. These small integrated packages require often high precision alignment between light source and optics as well as proper packaging material for high reliability and maximum performance.

Microfluidic structures for <lab-on-a-chip>

CDA additionally provides the integration of microfluidic structures into compact and

sensitive devices, (lab-on-a-chip). Such devices are becoming increasingly important where chemical, electrical and/or optical properties need to be tested on a small scale. Tried and tested structures and options include:

- channels for separation and mixing
- hydrophobic and hydrophilic surfaces
- combining these with microoptics and printed electronics

Appropriate devices lend themselves well to high levels of parallelization, thus reducing costs, but their manufacture does require a fully integrated process chain and command of several cutting-edge microfabrication technologies.

Manufacturing services

According to Pia Harju, Business Development Manager at CDA, "The opportunities for both microoptical elements and for integrated devices are truly global. Our manufacturing services – design, prototyping, assembly and mass production – are designed to benefit our customers' global strategy."

Contact

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JDSU on track with business split

New 'Lumentum' company looks to Laser 2000 to expand fiber laser customer base beyond Amada.

The optical components and lasers division at JDSU – soon to become a separate company known as “Lumentum” – has reported a slowdown in sales of high-power fiber lasers.

At \$195.2 million, divisional revenues were up very slightly compared with a year ago, but that masked a 20 per cent sequential decline in commercial laser sales, to \$31.5 million.

Alan Lowe, who currently heads up the division and is set to become Lumentum's CEO when the JDSU split takes place later this year, attributed the decline to a seasonal slowdown in a quarter that included the Chinese New Year, as well as what he believes is a temporary slump in sales of high-power fiber lasers.

“Third quarter fiber laser revenue was just under \$10 million, following three consecutive record quarters,” he told an investor conference call. “Fiber laser sales were down due to customer inventory management.”

However, he reckons that sales of fiber lasers will bounce back towards the end of calendar 2015, as Lumentum looks to sell the “Corelight” products recently launched at the Photonics West exhibition beyond development partner Amada, and starts to feel the benefits of a new partnership with Laser 2000.

Laser 2000 distribution deal

JDSU signed an exclusive deal with the Munich, Germany, distributor in April, and when questioned about that agreement by investors Lowe said:

“This puts a lot more feet on the street [sic], knocking on doors and opening up opportunities for us to sell fiber lasers outside of our main partner. That's the primary reason for the agreement with Laser 2000. They're a good group of people and they have a sales force that's already out knocking on doors.”

Lowe added that JDSU's new kilowatt-class direct-diode and high-power fiber lasers should complement the firm's existing

products in the “macro” segment of the laser materials processing market.

“We still don't have revenues outside of our main customer, Amada,” he said. “[But] we have a whole portfolio of products that we announced at Photonics West that I think over the next year or so we should be able to add to our customer base.” Regarding



Photo: Matthew Peach.

Launched at Photonics West in February this year, JDSU is hoping that its “Corelight” laser platform will help it generate fiber laser sales beyond key development partner Amada. JDSU recently signed an exclusive distribution deal with Munich-based Laser 2000 to provide its kW class fiber laser and kW class direct-diode laser products throughout Europe.

some of the other lasers in the JDSU portfolio, aimed at “micro” scale materials processing applications, he said:

“Higher-power versions of our Q-switched solid state and ultrafast lasers specifically designed for OEM machine tool applications are being designed into our customers' tools now. Manufacturing these lasers using our low-cost contract manufacturing model positions us well in the micro material processing market.”

Overall, he is expecting the commercial lasers division to grow at an average rate of around 5 per cent each year following the Lumentum separation – although revenues from high-power fiber lasers, direct-diode sources, and ultrafast lasers should expand at more like 15 per cent.

Gesture sensing migrates to PCs

However, Lumentum's overall sales will remain dominated by products destined for applications in various forms of optical communications. These came in at \$163.7 million in the latest quarter – exactly the same figure reported in May last year.

Among the major variables in that part of the Lumentum mix are sales of devices used in 3D sensing applications. And although they have declined to a low point in recent months, Lowe is hopeful that new deployments in high-end PC applications will help to spark wider uptake.

“We expect 3D sensing revenue to gradually recover as we have started to shift production units for new PCs and other electronics device applications,” he said. “We believe this business could strengthen further over the longer-term as more consumer electronic devices increasingly incorporate 3D sensing capabilities.”

When questioned about that, JDSU's CEO Tom Waechter declined to say whether or not JDSU was working with Intel on those PC applications, but noted:

“[The] PC applications that we're participating on are typically high end today. When or if that transfers down into the mid-range or the \$599 PC, that's really where the sweet spot is. We're not there yet, [but] I would say that when that happens we should be able to see that business pick up dramatically.”

At the Consumer Electronics Show (CES) in Las Vegas earlier this year, Intel's CEO Brian Krzanich said in a keynote talk that 2015 would go down as a turning point in the history of consumer electronics - thanks in part to 3D and gesture sensing based on photonics:

“We're going from a two-dimensional world to a three-dimensional world,” he said. “This additional dimension will change how we experience computing. We've given the PC eyes and ears.”

Central to his thesis were both the gesture-controlled devices enabled by the optical technologies and sensors in platforms like RealSense – which can see and understand depth, allowing the focus of a photo to be altered after it is captured - and wearable technologies like wristbands and fingertip pulse oximeters.

<http://optics.org/news/6/5/3>

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Diamond SA

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Femtosecond pulses can be picked from the train at up to 1 MHz rate using pulse picker UP1 and digital synchronization and delay pulse generator - pMaster 4.0H. Generator synchronizes laser operating at up to 100 MHz rate with Pockels cell driver and triggers it to launch $\lambda/4$ operation of Pockels cell.

Further laser pulses employing double pass scheme with switched polarization are redirected from the train using high damage threshold and high contrast ratio thin film laser polarizers provided by EKSMA Optics.

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The alternative to laser LED pattern projector from EFFILUX

Without any laser safety class, the new EFFI-Lase 2.0 can be used for applications like 3D triangulation, positioning and stereo vision, through the projection of lines, grids, point clouds, circles or crosses.

Further benefits are: No speckle, High resolution, long lifetime, all wavelengths.

In addition to the new EFFI-Lase, FRAMOS presents its extensive portfolio of imaging components including the GigE camera series from SMARTEK Vision, high-speed camera HS-2000 from Emergent Vision and CoaxLink frame grabbers from Euresys.

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82024 Taufkirchen, Germany
www.frames.com
sales@frames.com
Tel: +49.89.710667-0
Fax: +49.89.710667-66

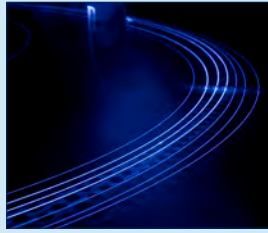
Fraunhofer IOF

Visit us at Hall B3, Booth #341

R&D in fiber laser technology

Fiber laser systems can be scaled towards new output parameters required by various applications.

Often, such a scaling can only be realized by novel ideas and components along the process chain of fiber technology. The Fraunhofer IOF Jena provides such an infrastructure to do research and developments together with partners from university research to industry. It provides the necessary technology development ranging from design, customized fiber components up to prototype laser designs.

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Duma Optronics

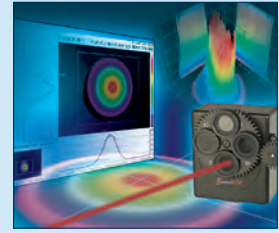
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Duma Wide spectral range laser beam profiler

Duma Optronics offers a proprietary sensor technology, for laser beam profiling in the range of 190nm to 1600nm. BeamOn WSR is based on a sensor head without distorting coatings.

High-sensitive device with USB2.0 interface, performs wide spectral range measurements including: beam profile, beam size, position and power. Various applications will benefit from this new technology, such as medical, industrial and military.

Combining the WSR technology with innovative beam sampling technique allows measurements of lasers with power levels from μ W to kWatts, as well as measuring dual wavelengths simultaneously for alignment purposes.

**Contact Details**

Duma Optronics
www.duma.co.il
sales@duma.co.il

CINOGY Technologies GmbH

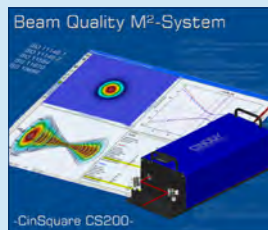
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Beam Quality M² Analysis System - CinSquare

CINOGY's CinSquare is a compact and fully automated tool to measure the beam quality of cw and pulsed laser systems from 320nm to 1320nm for up to 50W input power.

The CinSquare system is characterized by an easy operation, short measurement time (<2 minutes / 30s - fast scan) and highest accuracy. Its robustness and reliability ensures continuous operation in different applications.

According to ISO 11146-1/2 the system measures the beam caustic and determines M², K, BPP, waist position and diameter, divergence, etc.

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info@cinogy.com

Tel: +49 5527 8483770

Fianium Ltd

Visit us at Hall B2, Booth #426

New WhiteLase SC-400-20 sets new standard for white light lasers

Fianium are delighted to announce the WhiteLase™ SC-400-20 supercontinuum fiber laser. The system provides the highest available power, more than 20 Watts, combined with a blue-enhanced spectrum starting from below 400nm.

With the addition of a filter, the laser becomes the ultimate tunable light source providing over 50mW from 405nm to beyond 2000nm. With picosecond pulses at megahertz repetition rates, applications include steady state and lifetime measurements in spectroscopy and imaging.

The WhiteLase SC-400-20 was winner of the 2015 Prism Award for Innovation.

**Contact Details**

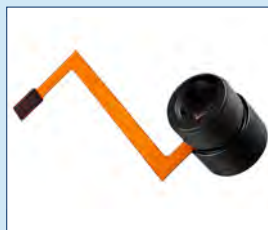
Fianium Ltd
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info@fianium.com
Tel: +44 23 80 458 776

Varioptic - a Business Unit of Parrot Visit us at Hall B1, Booth #223**NEW! Autofocus module for Microscopy**

This compact Autofocus objective is dedicated to microscopy applications and includes the popular Arctic 316 Liquid Lens.

With a magnification from X2 to X5, a typical focus range up to 1.7mm for a working distance of 5 to 7mm, it can refocus fast, with no mechanical movement! It allows to build very easily AutoFocus microscopes, for applications such a life science or industrial inspection.

A Caspian Microscopy Development kit is now available, including X2, X3, X5 extension rings, power supply and an Auto Focus Microscope module.

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France

www.varioptic.com

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eagleyard Photonics

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NEW STYLE

eagleyard's 780nm and 852nm DFB laser diodes start off the advancement.

The hermetically sealed standard butterfly housing provides a collimated beam with a circular profile.

This laser diode can be conveniently integrated in any system, especially for Rb and Cs spectroscopy – straightforward.

**Contact Details**

eagleyard Photonics GmbH
Rudower Chaussee 29
12489 Berlin, Germany
www.eagleyard.com
info@eagleyard.com
Tel: +49-30-6392-4520
Fax: +49-30-6392-4529

Frankfurt Laser Company Visit us at Hall B2, Booth #401**FLC presents Lasers from Necsel**

Green Lasers from Necsel (USA) deliver high powers of up to 3W from a package with a footprint of just 20mm x 34mm. The lasers use a patented technology to create wavelengths from 529nm to 555nm previously unavailable in the industry. Besides Green – **Red, Blue and combined RGB lasers** are available. The RGB Matrix Lasers are offered with 250 lumen and 700 lumen brightness and are coupled into a 400 micron core fiber.

Application:

- Biomedical
- Illumination
- Industrial
- Pumping

**Contact Details**

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D-61381 Friedrichsdorf, Germany
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- Lens alignment and assembly < 2 µm
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- All accessories and upgrades are of modular design and fully integrated into the software

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Frankfurt Laser Company Visit us at Hall B2, Booth #401**FLC presents Pulse Laser Diodes from Shimadzu**

The **Shimadzu** Narrow-spectrum Fiber Coupled Pulse Laser Diodes are offered with wavelengths of **1030nm and 1064nm** and the peak power at the **fiber end is up to 100mW**.

With a linewidth of just 100pm these diodes are ideal for the use as seed lasers.

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Delta Optical Thin Film A/S

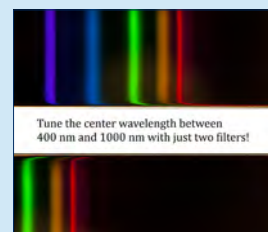
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Delta Optical Thin Film A/S**The best ever linear variable VIS/NIR band pass filters (400 nm – 1000 nm)**

Until recently, tuneable optical filters did not display sufficient quality to be used for advanced fluorescence applications – those days are over now!

With high transmission, steep edges and high blocking outside the transmission range, DELTA's ultra-hard coated, durable Linear Variable Filters can provide the same performance as conventional optical filters.

We can help you to improve your optical system. We invite you to discuss optical filters or complete optical systems with us!



Tune the center wavelength between 400 nm and 1000 nm with just two filters!

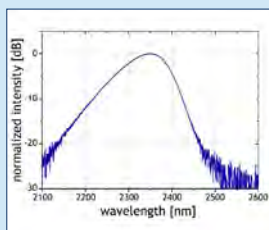
Contact Details

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info@deltaopticalthinfilm.com
Tel: +45 70 70 71 46

Frankfurt Laser Company Visit us at Hall B2, Booth #401**Superluminescent Diodes**

FLC offers a great variety of **Superluminescent Diodes** with wavelengths between **680nm to 6000nm**.

These diodes are excellently suitable for the use in OCT, Bragg Grating Sensors, Fiber Sensors, Optical Measurement Instruments and many more.

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Leader in Optical Filter Solutions

IRIDIAN provides optical thin film filter solutions and coating services to a wide variety of industrial and research sectors.

The company is a leading global supplier for applications in telecommunications, spectroscopy (Raman, fluorescence, flow cytometry), lasers, biomedical imaging and sensing, display and entertainment (glasses for 3D cinema, display coatings). Our optical filters and coatings cover the spectrum from prototype development to volume production offering the highest levels of performance and durability at competitive prices.

New products: High laser damaged dichroic filters, MWIR filters, Multi-spectral arrays

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Schäfter+Kirchhoff GmbH Visit us at Hall B2, Booth #102

Lasers for Nanometrology

The laser diode beam sources of type 51 nano have reduced power noise (<0.1% RMS), reduced coherence length (<300µm), and low speckle contrast. Applications include AFM or use as pilot lasers during alignment tasks.

An optional additional Faraday isolator in types 51 nanoFI ensures avoiding any disturbances caused by back reflected light.

The lasers 51 nano are available for wavelengths in the range of 405nm to 1080nm and output powers up to 30mW. They are fiber-coupled into a singlemode or polarization-maintaining fibers and have a Gaussian intensity distribution.



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22525 Hamburg, Germany
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info@SuKHamburg.de

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Polarization Analyzer for fiber optics and free beam applications

The polarization analyzer series SK010PA is a compact, comprehensive, universal USB2.0 measurement and test system for free beam applications and laser beam sources with polarization-maintaining fiber optics.

Alignments and measurements are performed rapidly. A real-time interactive display shows the state of polarization on a Poincaré sphere as well as the degree of polarization. Special routines that determine polarization extinction ratio of fiber-coupled sources allow the evaluation of the alignment of polarization-maintaining fibers.

The polarization analyzer is available for various wavelength ranges (370-1600 nm).



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USB 3.0 Line Scan Camera

The range of the USB 3.0 Superspeed line scan cameras includes monochrome, color or TDI sensors with 512 to 8160 pixels (monochrome) or up to 3x 7600 pixels (RGB).

Pixel frequencies of up to 200 MHz allow for high speed high resolution image acquisition for scan and measurement applications. Using connectors with screw locks and the robust casing ensures full suitability for industrial applications.

The standardized USB 3.0 interface makes these cameras very easy to integrate into existing systems, while ensuring low system costs.



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Ophir Spiricon Europe GmbH

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High Power Non-Contact Industrial Beam Monitoring

High power lasers are difficult to profile by conventional techniques. Ophir-Spiricon's BeamWatch® is the first industrial beam monitoring system to quickly and accurately measure focus spot shift, waist width, and M2 for high power YAG, fiber, and diode lasers without contacting the laser beam.

Designed for material processing applications to 100kW and higher, BeamWatch measures focus spots down to 80µm.

2D viewing allows determination of roundness.



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(00800 67447678)

Ophir Spiricon Europe GmbH

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OEM Beam Profiling Camera for 2D/3D Views

Lasers are increasingly embedded in systems where traditional technologies can't keep pace with miniaturization.

Ophir-Spiricon's Pyrocam IIIHR is a beam profiling camera designed for dynamic alignment and proper operation in OEM applications. Sensitive 160x160 pixel image array profiles beams to 1/2-inch (12.8 mm) without need for reduction optics.

Provides 2D/3D viewing of DUV, Far-IR, THz sources. Includes an interface to GigE (Gigabit Ethernet) cameras for high-speed applications.



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Laser Sensors Measure Power/Position/Size

Ophir's R&D 100 award-winning BeamTrack™ Power-Position-Size Laser Sensors are thermal detectors (40mW to 250W) with multiple measurement functions in one, compact device.

They measure Power, Energy, Beam Position, Beam Size, Centering, and Beam Wander. Sensors are available in aperture sizes from 12mm to 50mm. Broadband absorbers measure spectral range from 150nm to 20µm.

Watch the BeamTrack VIDEO and download the WHITE PAPER, "How to Select Power/Energy Sensors."



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SCHOTT AG

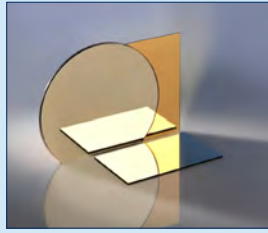
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Complete range of highly sophisticated interference filters

SCHOTT develops and manufactures customized high-quality interference filters for use in high-end applications in research and industry.

The company's strengths lie in designing sophisticated filters for new applications. Passage and blocking of wavelength regions can be realized to suit customer demands exactly and offer extremely low tolerances.

The filters are used for astronomy (i.e. the new JAST/T80 Telescope in Spain, and the spectrum ranges from sophisticated fluorescence filters and Raman filters for medical diagnostics to coatings for high-performance laser applications.

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SCHOTT AG

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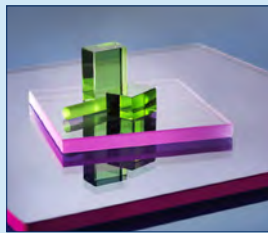
One-stop-shop for active and passive optical laser components

SCHOTT offers a full range of coated materials for use in laser applications.

With over 50 years of experience in developing laser glass and new processing techniques, the company ensures that glass, processing method and coating are optimally matched to meet even the most sophisticated customer demands.

SCHOTT now offers its active and passive glass components with an extremely high laser damage threshold.

This technology is available for all components from the most basic optical mirror to active media.

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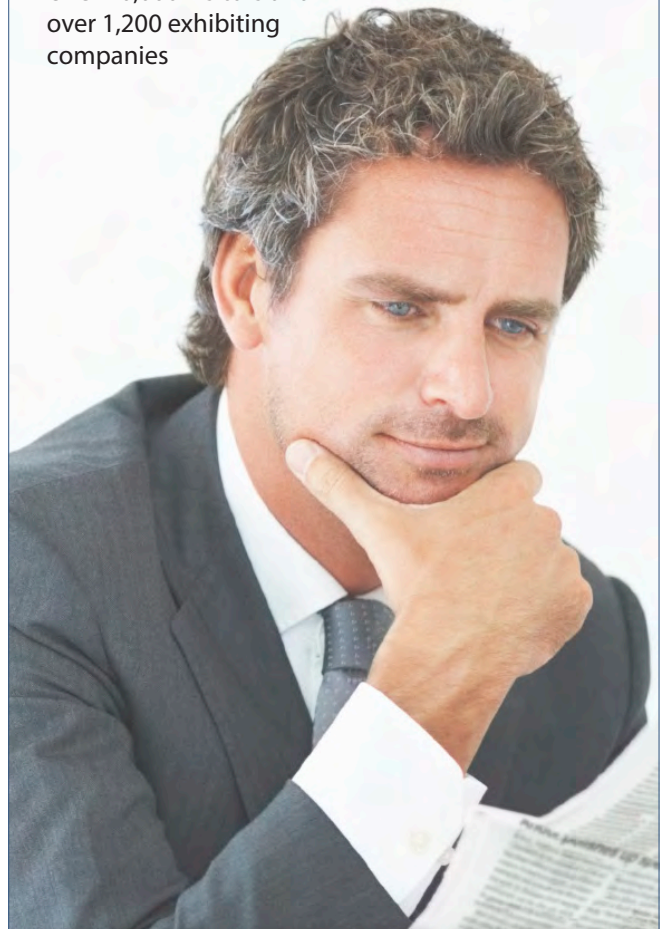
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jobs market
and career guide

The International Trade Fair for Optical Technologies in Munich – Components, Systems and Applications: A source of momentum with a broad spectrum.



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Getting a job in Photonics today

2015 has already proven to be a positive year for European Photonics.

Not least because of the increased coverage of light based sciences thanks to the International Year of Light celebrations, but also with news of significant investment having been secured for photonics based research initiatives and specialist research hubs.

Reports from the recent Photonics 21 meeting in Brussels tell of further growth and support for the EU's Research and Innovation program, Horizon 2020 - which places photonics as one of the key enabling technologies within the European economic plan. The recent Juncker Investment package of €315 billion to drive industrial output from within Europe further supports this plan of research for value creation.

Last year the global photonics industry was said to be valued at €300 billion and is forecast to double by 2020; as an increasing number of critical technologies owe their development to advancements made in photonics.

In Europe today, the photonics market has a value of around €70 billion and has created more than 350,000 jobs.

This is by all accounts, a good time to be joining the workforce of an exciting and growing industry. But what does this mean for Masters Students and those concluding their PhD? Those who now face the move into the photonics job market.

continued on next page



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Getting a job in Photonics today

Optics.org spoke with Director of Microscopic Imaging at ZEISS Corporate Research & Technology, Dr. Timo Mappes, to get some industry advice on getting a job in the current market.

Here are Dr. Mappes' Top 10 tips for Masters and PhD students on getting a job in the photonics industry...

1. More than just technology...

A solid physical and technological background is a basic requirement, but it is not enough to qualify for a job today. You will need a good number of other skills and competences to convince a future employer in the interview – and even more so with your performance in your future job.

2. Business background

A lot of universities offer possibilities to acquire at least some very basic knowledge on business aspects – take the chance and attend those courses. Most students will initially complain they don't have the time to do so. Often it is only retrospectively that they realize they had plenty of time to receive this teaching for free. Don't be among those who regret not having used this opportunity whilst at university.

3. Project management

You will work on your master-thesis, or on your PhD thesis project. Work in industry is based on projects. Try to get in touch with simple project planning tools like Gantt charts - already at the university - you will realize it makes life easier and your thesis project more efficient. In addition, this will make for an easier transition into industry.

4. Interdisciplinary teams

Different disciplines have different languages – an "experiment" is something entirely different for a physicist and for a person in developmental biology. Try to learn to benefit from being able to communicate with people on different levels and with different backgrounds – that is what life is like in project teams afterwards.



5. Application pull

Be aware of who needs the technology, the device or study you are developing in your thesis project. What is its application? And could you tune it a tiny bit to make it so much more useful?

6. Looking over the fence

Responsible, forward-thinking employees are the key to success. If you get the opportunity, be proactive in student organizations; learn how to organize meetings or even small conferences. Be engaged in social activities.

7. KPIs

Key Performance Indicators (KPI) are essential in evaluating the quality of an industrial unit – the same rule applies to academia, only the KPIs differ. Thus, you might face the question in your interview "how have you contributed to those academic KPIs? Namely, to publications, teaching, acquiring funds etc..." Make sure you are prepared for this and are proactive during your academic career.

8. Sustainability

Experiments have to work at least once in academia, but whatever you develop in industry has to be reliable. Be aware of this.

9. Communicating Knowledge

At university there are many ways to learn how to improve your communication skills – use this knowledge focused environment and try to apply what you've learned as often as possible. You will need it for an industrial career even more than for an academic one. Your ability to summarize the key points, to present complex content to your boss, your colleagues or co-workers in a dialogue, a presentation, or a report will make the difference.

10. Authenticity

For the job interview itself, be polite, dress appropriately and prepare yourself as you expect the interviewer to be prepared for you. But most of all: Be yourself – highlight your strengths but don't pretend to be more or different than what and who you are. It is all about your personality and your competence.

For optics and photonics jobs from leading companies in the optics and photonics community, please visit the [optics.org jobs board](https://optics.org/jobs) at <https://optics.org/jobs>

PD Dr. -Ing. Timo Mappes is Director of Microscopic Imaging at ZEISS Corporate Research & Technology

Henry Tipping is a contributor to optics.org



Vacancies

Fibercore is a market leader in the field of 'Specialty' optical fibers. Originally a technology spin-out from the University of Southampton and now celebrating over 30 years in business, we export more than 95% of our production to around 50 countries worldwide.

Our innovative products are used in a diverse range of industrial sectors including aerospace, telecommunications, energy and fundamental research – and have been deployed quite literally from Southampton to Mars! We are expanding our Development function and have two vacancies at our Southampton facility:

Senior Process and Development Engineer

The main focus of this role will be to enhance our product portfolio for highly specialised markets. It will involve not only identifying process improvements to existing products but also the development of new fibers from an innovative technical concept through to standard production.

The role will include:

- Preparing technical reports
- Developing fabrication recipes
- Preform manufacture
- Managing, planning and reporting on product development

Given the highly specialised nature of this vacancy, we are looking for someone who is fully conversant with MCVD preform fabrication and tower drawing, both from a theoretical and a practical perspective. If you have a good university degree in engineering or science and a minimum of three years' experience in an engineering function within fiber manufacture, we would be very interested in hearing from you.

Senior Project Leader and Development Engineer

The main purpose of this role is to provide technical support for both existing products and for new designs, taking responsibility for managing, planning and reporting on development projects from feasibility to completion, ensuring objectives are met within budget and completed on time.

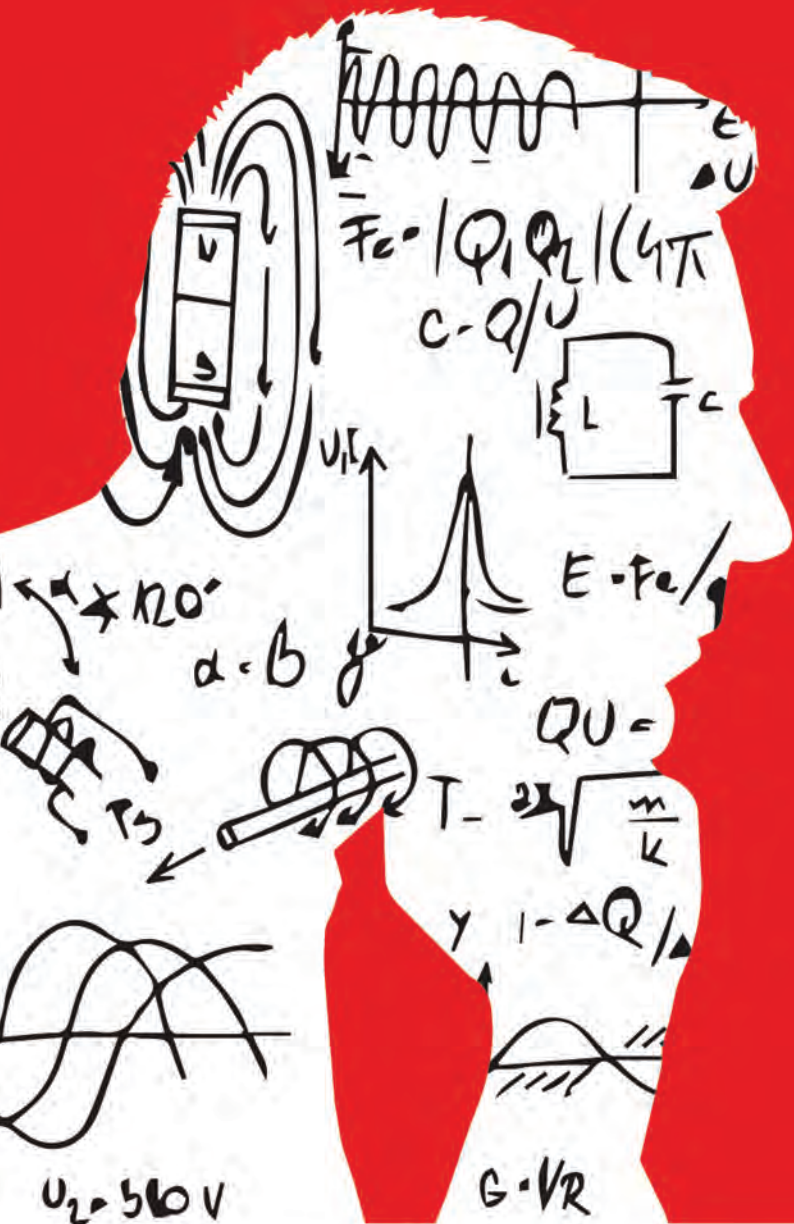
The role will include:

- Actively implementing experiments to expand our technical capabilities and expertise
- Analysing results from development fiber characterisation
- Preparing and writing new proposals for R&D work and/or grant-funded projects, both UK and EU
- Preparing technical reports and scientific articles for publication and presentation

If you have a good university degree in engineering or physics and a minimum of five years' experience in optical fiber plus project management in a commercial environment, please do get in touch.

If you are interested in either role, please send your CV and cover letter to hr@fibercore.com
Further details can be found on fibercore.com/careers

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IPG targets laser paint-stripping

Fiber laser company senses opportunities emerging in new applications beyond cutting and welding.

After reporting yet another surge in both sales and income, IPG Photonics CEO Valentin Gapontsev said that new uses for fiber lasers beyond the traditional areas of materials processing were emerging.

At just under \$199 million for the first three months of 2015, the Oxford, Massachusetts, company's quarterly revenues met earlier expectations, and were up 17 per cent on the same period last year – despite some unhelpful foreign exchange trends.

Gapontsev described that and a 29 per cent increase in quarterly net income to \$57.4 million as a "terrific" start to the year, with the company continuing to pile up cash. It now holds more than half a billion dollars on its balance sheet, alongside negligible debts.

Among the emerging application areas is laser paint-stripping of aircraft and ships, an idea that IPG has previously worked on in collaboration with the US Air Force. But with no existing vendors currently capable of supplying and supporting such equipment, IPG looks set to solve that problem itself.

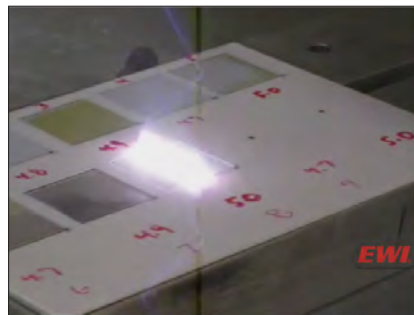
Gapontsev, who said that the market for such systems looks to be worth hundreds of millions of dollars in the US alone, explained that fiber lasers could greatly simplify the process of removing paint. Following a decade-long period of development, the technology is set to move into a genuinely commercial phase.

The CEO added: "Now, the long-term project is turning from qualification to mass production. Recently we received a request from a leading customer to become a key supplier of complete systems. We're looking at it very seriously. It's a complex system but we are ready to take responsibility."

One recent move that may help IPG to put together more systems was the \$5 million acquisition of a controlling stake in a Belarusian firm specializing in tools and controls for multi-dimensional, high-power laser systems.

Cutting gets bigger in Japan

A highlight in the latest quarter was a marked uptick in adoption of fiber lasers bound by cutting equipment vendors in Japan, who are starting to catch up with rivals in Europe. Gapontsev told investors that IPG had capitalized on this switch, with sales to Japanese cutting OEM customers up nearly 40 per cent in the quarter.



Edison Welding video screen grab: stripping paint with a Q-switched laser.

He also suggested that IPG may be about to muscle in various other important laser applications, including that of using ultraviolet (UV) sources to anneal electronic backplanes in displays production.

At the moment, excimer lasers are used for that processing step, but Gapontsev believes that fiber sources may start to replace the gas sources – just as they have displaced carbon dioxide lasers for metal cutting and welding.

The CEO said: "We have [achieved] very good results in the development of new technology for annealing silicon polycrystal films on the basis of our high-power UV fiber lasers, which we believe has a good chance to replace the present excimer laser technology in OLED display manufacturing."

Other applications beyond the core cutting and welding areas that IPG is eyeing include cinema projection, for which the company says it has developed a speckle-free red/green/blue fiber laser technology, and lidar sensors based around fiber lasers for driver-free vehicles.

No China crisis

Meanwhile in China, where there are wider macroeconomic concerns as the country's rate of economic growth has slowed to its lowest level in 20 years – a mere 7 per cent – IPG's CFO Tim Mammen told an investor conference call that sales of fiber lasers were broadly unaffected.

He believes that this is because China's government wants the country to become a location for advanced manufacturing as well as the production of high-volume goods, and this means more lasers for manufacturing in general.

In fact, IPG's sales in China increased 23 per cent year-to-year in the latest quarter, as the company works closely with its customers there to develop applications such as an advanced welding process that could replace the use of rivets in aerospace structures.

Looking to the current quarter, Mammen and Gapontsev said that they were expecting another jump in sales to around \$220 million, with plenty of headroom to further grow fiber laser uptake in the traditional areas of cutting, welding and fine processing. Mammen said he believed that less than half of the cutting market had been penetrated thus far by fiber lasers.

"Our order flow and book-to-bill remain at strong levels in our three main geographies and we expect that to continue in the near term," Gapontsev said. "We remain focused on gaining share in our established materials processing applications, developing new product applications that will expand our available market and applying our lasers in large scale and novel applications beyond our core applications in materials processing."

- Despite that positive sentiment from IPG's management, the company's stock price slipped a couple of percentage points – although at just under \$93 on the Nasdaq exchange on April 28th, it continues to trade at levels close to an all-time high, valuing IPG at close to \$5 billion.

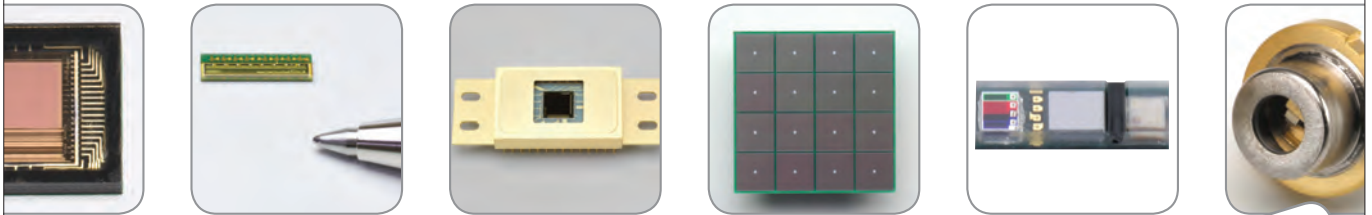
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Rofin on the up as fiber laser sales rise

Introduction of latest generation of fiber lasers based on more cost-effective modules helps boost profit margins.

Industrial laser firm Rofin-Sinar has reported a sharp increase in both orders and profits in its latest financial quarter.

The company's stock price rose in value by more than 10 per cent as the results were made public, indicating that investors were taken by surprise with the positive outlook presented by CEO Günther Braun and his team.

"Our second quarter results confirm that our strategic and technological initiatives are growing our business and improving profitability," he said. "Net income and earnings per share nearly doubled year-over-year and we see further improvements in the gross margin as well as positive effects from our operating expenses cost controls."

The CEO pointed out that Rofin's long-standing efforts to improve the design of its kilowatt-scale fiber laser products was now starting to bear fruit. Its third generation of high-power lasers feature more cost-effective module design, translating to higher profits for Rofin.

And with the company also starting to use much more of its home-grown laser diode chips to drive those fiber lasers, profit margins should continue on their upward trajectory.

Revenues in the latest quarter were helped by strong sales level into the automotive sector, Braun added, along with robust demand from customers in the machine tool, medical device and semiconductor sectors. Even the long-dormant solar sector showed some signs of life, he said, with a large order from a major Chinese PV manufacturer.

Fiber lasers in demand

At \$122.7 million, Rofin's total sales for the quarter were actually down 5 per cent on the same period last year. But that figure was still within the expected range – despite some negative currency effects – and orders of \$141 million indicate that the remainder of 2015 is looking strong for the company.

According to Braun, the company booked a record number of orders for its high-power fiber lasers in the March quarter, while Rofin's new "Filer" ultrafast process technology for cutting brittle materials like glass also attracted some attention from a potentially major customer.

"Another highlight in bookings was high order intake during the quarter from the solar industry, in particular from China, where we see potential for additional orders in the coming months," the CEO said. He added that a backlog of \$160 million at the end of March represented one of the highest such figures in the company's history, while order entry in the quarter included 130 requests for high-power fiber lasers.

All those positive developments mean that Braun and colleagues have increased their earnings target for the year ending September 30, with net income profitability expected to tick up to 8 per cent of revenues, assuming that sales estimates are met.

The strong order patterns mean that despite the adverse effect of the relatively strong US dollar, the Rofin team is maintaining its revenue



Photo: Rofin-Sinar.

Launched in February this year, Rofin's third-generation fiber laser modules offer more compact power, meaning that a single unit can produce up to 2 kW output. That is both aiding sales and boosting the company's own profits.

guidance of between \$515 million and \$535 million for the full year. With sales for the first half of the year having now reached \$245 million, the second half should show a big increase in revenues as more high-power fiber lasers are shipped.

Braun said that most of that fiber laser growth was coming from cutting OEMs, with contributions from welding and 3D manufacturing applications also increasing. Rofin is now able to offer fiber lasers with up to 2 kilowatt output based on a single high-power module, seen as a particularly attractive option for volume customers in China.

The CEO also hinted at growing demand from the military sector, where high-efficiency fiber lasers are key building blocks in the emerging field of directed-energy weapons.

<http://optics.org/news/6/5/10/rofinMay2015>

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Jenoptik clarifies details of divisional reorganization

Diverse laser and photonics technology company to refocus divisions on markets - but no job cuts or closures are planned.

Jenoptik is planning a reorganization within its divisional structure, the existing model of which was established at the beginning of 2008. In a statement made in April to optics.org, the company contradicted various press and news agency reports from earlier in the month, which suggested that Jenoptik was planning to close its laser business.

an organizational change, which is part of the consistent development of Jenoptik." Furthermore, Jenoptik asserted that there will be no downsizing of staff as a direct result of the reorganization.

Michael Mertin, Jenoptik President & CEO, commented, "We consider this change as the next step in our growth strategy. Instead of focusing on technologies, we will align ourselves more closely with our target markets and with the global megatrends that drive growth in these markets, such as semiconductor equipment, automotive and medical technology industries. This development will help us position our products and solutions even closer to our customers. Implementation of this change is planned to start in mid-2015."

Market focus

Asked about the likely details of structural changes, the company commented, "We will implement changes in the three divisions: Lasers & Material Processing, Optical Systems, and Industrial Metrology, to better meet demands from target markets.

"Details of this realignment are currently being defined by the Executive Board, including the new CFO Hans-Dieter Schumacher, in cooperation with the management and the Group Works Council. There will be no downsizing of staff as a direct result of this reorganization."

The company also clarified another issue, raised in various German media reports, about the implications of the recent sale of significant Jenoptik shareholding by ECE Industriebeteiligungen, and whether this could mean changes to the company's future business direction.



Photo: Jenoptik

Jenoptik is to reorganize its divisional structure.

The Jenoptik statement said, "After the sale of the shares formerly held by ECE Industriebeteiligungen GmbH, our freefloat rose to 89 percent, thus improving the tradability of the share. The change in the shareholder structure does not affect Jenoptik's business plans or roadmaps. We have changed our portfolio over the course of [recent] years, we have slimmed our product lines according to our core competences.

"The roadmaps for the development of the whole Jenoptik Group are adapted to market needs and in accordance with our strategic orientation. We will continue to develop Jenoptik with respect to target markets so that we can meet customer demand with the best expertise possible. We will continue to fulfill our contracts."

2015: Jenoptik expecting sales boost

In December 2014, optics.org reported Jenoptik's forecast that the company would see a "substantial sales improvement" during 2015, including the fruits of a delayed major international defense technology project originally scheduled for 2014.

<http://optics.org/news/6/4/10>



Mertin: "No job cuts, no closures."

Instead, the company said it intends to "realign existing Jenoptik divisions more closely with target markets in order to better meet customer demand from these markets." The company's key markets include: semiconductor equipment manufacturing, automotive and associated suppliers, medical technology, and defense and aerospace.

The statement added, "In total, there will still be five divisions in the Jenoptik Group. We will not close down divisions or sell business parts. The realignment is simply

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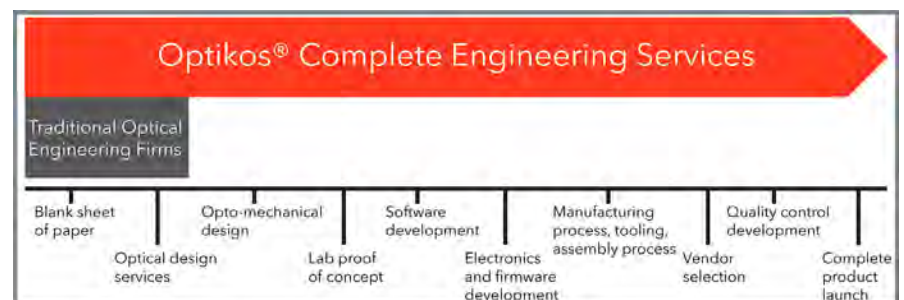
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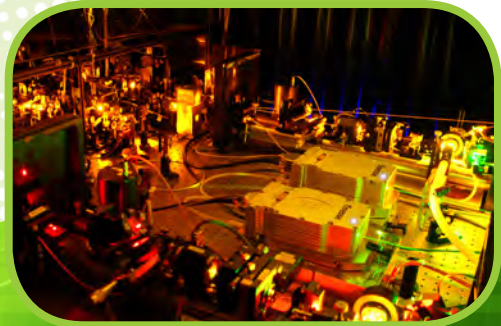
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Trumpf buys JK Lasers from GSI Group for \$31.5m

Laser giant Trumpf's subsidiary SPI Lasers takes on GSI's UK offshoot, a specialist in industrial and fiber lasers.

GSI Group, a developer of photonics components and subsystems for the medical equipment and industrial technology markets, has sold its JK Lasers subsidiary to SPI Lasers, Southampton, UK, a subsidiary of industrial lasers and toolmaking giant Trumpf, for approximately \$31.5 million in cash.

JK Lasers - with almost 100 employees and annual sales of €17.6 million - develops and manufactures industrial lasers, including industrial fiber lasers for cutting, welding, drilling, and additive manufacturing functions in material processing applications. The business is headquartered in Rugby,

UK, and employs approximately 100 people worldwide.

John Roush, CEO of GSI Group, commented, "We decided to sell JK Lasers for an attractive valuation in order to redeploy the capital to invest in our growth strategies of building world class franchises in our core businesses, such as laser scanning and beam delivery, low power CO₂ lasers, medical technologies and precision motion products. Our focus will be on both organic growth through differentiated new products, and acquisitions that improve our capabilities in target applications."

The sale is expected to improve GSI's adjusted gross profit margins by approximately 1%. The JK Lasers sale does not qualify for discontinued operations accounting treatment. However, the Company plans to provide non-GAAP reconciliations that will exclude the results of JK Lasers for both 2014 and 2015.

The JK Lasers business generated approximately \$22 million in sales in 2014, but did not have a material impact to GSI group's profitability in 2014. GSI group said it expects to record a pre-tax gain on the sale of approximately \$17 million to \$20 million, and expects cash proceeds of roughly \$26 million to \$28 million, excluding tax and transaction-related costs. GSI Group does not expect the sale to have a material impact to its 2015 non-GAAP earnings per share from continuing operations or adjusted earnings.

In March, optics.org reported that GSI Group's latest annual sales had been \$364.7 million in 2014, which was up 15% on its 2013 figures; carbon dioxide and fiber lasers had each contributed to the increase in revenues in US firm's performance. And in July 2014, France-based sister companies Amplitude Technologies and Amplitude Systèmes together acquired GSI Group's Continuum scientific laser business.

<http://optics.org/news/6/4/22>

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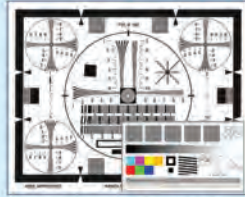
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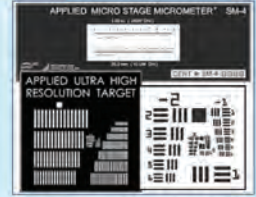
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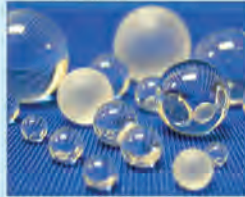
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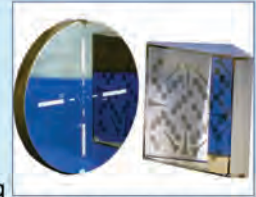
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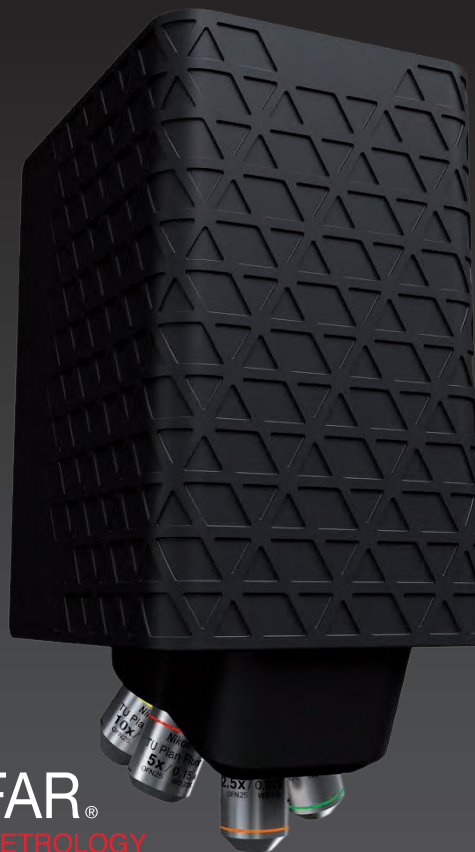
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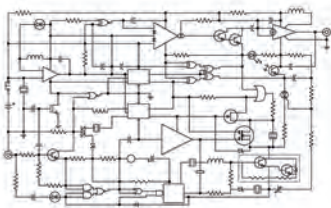
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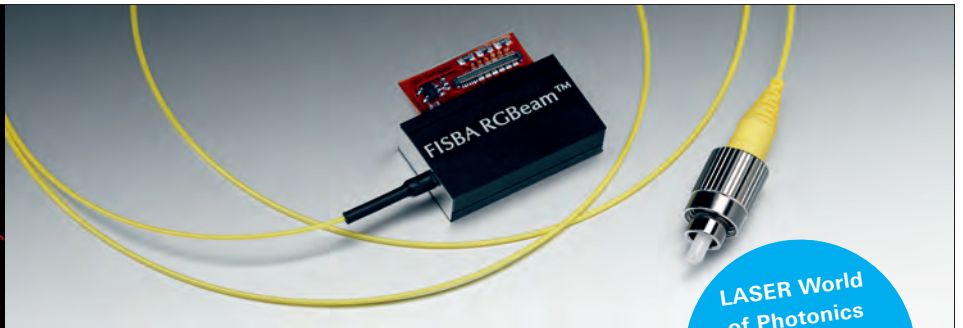
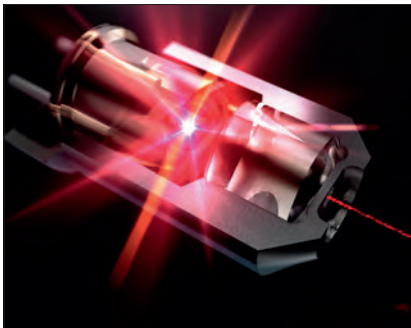


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Rofin-Sinar reveals CEO switch

Günther Braun stepping down after 26 years at the industrial laser firm, and a decade as its CEO.

Rofin-Sinar, the Nasdaq-listed industrial laser company with twin headquarters in the US and Germany, has appointed a new CEO to lead the firm.



Photo: Rofin-Sinar.

Günther Braun has worked at Rofin-Sinar for 26 years, playing a key role in the company's Nasdaq IPO back in 1996 before stepping up from CFO to lead the company in 2005, when former CEO and current chairman Peter Wirth suffered a stroke.

Thomas Merk, currently chief operating officer of the company's laser micro and marking division, will replace long-time incumbent Günther Braun at the start of July. Although the 57-year-old Braun will stay with the company during the transition period, the switch comes almost exactly ten years after he was appointed CEO and president – and a remarkable 26 years after he first joined Rofin.

Merk is also a long-time executive, joining the firm in 2000 and serving as managing director of Rofin-Basel Lasertech before stepping up to become COO of Rofin's "micro" group in 2005 and adding the laser marking business to his portfolio the following year.

Peter Wirth, chairman of the Rofin-Sinar board of directors, said of the impending

change: "We are now entering a new phase of the company's development and we will continue to focus on innovation while taking a firm, bottom-line approach that will accelerate our competitive advantage and build value in this market.

"We have chosen Thomas to be our new CEO because of his contributions and demonstrated leadership. He has deep experience in the laser industry, business vision and financial acumen."

Third-gen fiber modules key

One of the key trends in the laser materials processing sector is the emergence of fiber lasers, which are challenging more traditional gas and solid-state laser sources in virtually every application area.

Rofin-Sinar has to some degree been playing catch-up with the fiber laser specialist IPG Photonics, but over the past couple of years has begun to see the fruits of its development work in this area. Now able to produce much more powerful, compact and cost-effective fiber laser modules, and with fast-growing use of its internally sourced laser diodes, the company is able to compete more effectively with IPG.

Last month, Longbow Research analyst Mark Douglass reported that Rofin was gaining "significant traction" with its third-generation designs, with orders and sales growing extremely quickly. "[Rofin] had orders for 130-plus high power units in [its fiscal second quarter] and sounds confident that it can ship its target 300 units in [fiscal year 2015]," he wrote in a research note.

Douglass added that while the widespread investment by automotive manufacturers was positive for a variety of industrial laser applications, Rofin

might even start to realize some growth at the expense of IPG Photonics if it continues to perform well.

"Not content to rest on its laurels, [Rofin] has more technology innovations that should continue to drive down its high power fiber laser costs, knowing it has very strong competition," reported the analyst.

Customer reach

Paying tribute to Braun in a company release, Wirth said: "During his tenure, he made a considerable contribution towards strengthening Rofin's strategic position and has led the company through many phases of technological innovation, most recently the successful introduction of our third generation of high-power fiber lasers."

In the ten years since Braun took over the helm – initially on an interim basis after prior CEO Wirth suffered a stroke in early 2005 – the company's annual sales have risen from \$322.6 million (fiscal 2004) to \$530.1 million in fiscal year 2014. For the current year, Braun and colleagues are expecting to post sales of around the same level, despite the adverse currency effects of the strong US dollar.

However, those figures mask something of a roller-coaster ride in between, with then-record sales of \$575.3 million in 2008 followed by a slump to \$349.6 million the following year, in the wake of the global financial crisis, before bouncing back to \$597.8 million in fiscal 2011.

The outgoing CEO said of his time in charge: "It was a great pleasure to manage the fortunes of Rofin for such a long time, and I wish Thomas all success in the leadership of Rofin."

53-year-old Merk added: "I am excited to lead [Rofin] in its next chapter of growth and development. As the company with one of the greatest customer reaches in the industry and a strong product portfolio that includes some of the most advanced fiber-laser technology as well as a wide ultra-short-pulse laser portfolio in the market, there is significant opportunity ahead to drive growth and further margin improvement."

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