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Lasers Shape a New Future for Additive Manufacturing of Metal Parts

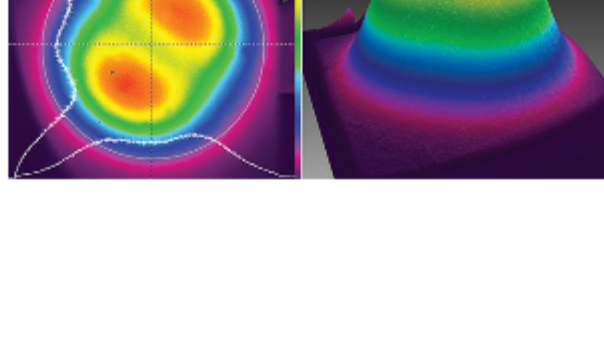
Aerospace and automotive manufacturers initially adopted additive manufacturing (AM) methods as a means to rapidly prototype new parts or to fabricate more complex or consolidated components in a single step. They applied additive manufacturing to polymers, then composites, and eventually to more challenging materials such as metals and ceramics.



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Beam Profiling Evolves to Keep Lasers in Line with New Applications

Lasers provide many different industries with greater efficiency, less waste, and higher precision, but they are not always as easy to fix as the machines they replace. A blunted drill bit is easier to observe and replace than an underperforming laser beam is to detect and correct. Fortunately, as laser technology has evolved, so have a variety of technologies that measure, monitor, and help to optimize the power, shape, and energy of a laser beam.



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Photonics Brightens the Future for Augmented Reality

Out in the Gulf of Mexico, an offshore oil rig experiences a critical mechanical failure. The engineers with the expertise to fix the problem are back on the mainland, and flying them to the site on short notice would be costly and logistically difficult. But what if these experts could remotely guide the rig's mechanical crew through the repairs without leaving home?



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.: Featured Products & Services



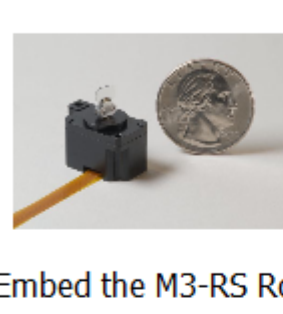
[LAZERMasteR® LZM-125A+ Splicing System](#)

AFL
AFL's LAZERMasteR LZM-125A+ Splicing System is a glass processor and fiber

ablation machine that uses a CO2 laser heat source to perform splicing, tapering, lensing, or other glass shaping operations with glass diameters of 2.0 mm or less.

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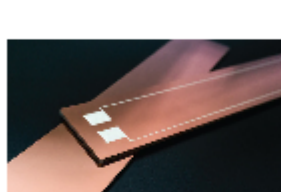
[Laser Alignment for DNA Sequencing](#)

New Scale Technologies Inc.

Embed the M3-RS Rotary Microstage in Next-Gen Sequencing instruments. Achieve precise laser alignment in lanes, channels, or nanowells. High repeatability and accuracy, no thermal drift. Built-in 3.3V controller (I2C or SPI) – no separate electronics needed - minimizes size and time to market.

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Materion Balzers Optics

Materion Balzers Optics lidar cover windows will provide excellent protection for lidar sensors. Our coating technology enables the highest optical and durability performances. We provide customized color solutions and the best transmittance solutions for large AOI applications with integrated anti-fog and easy-to-clean solutions.

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[TracePro 2022.6](#)

Lambda Research Corporation

Lambda Research Corp. is proud to announce the release of TracePro 2022.6, the latest release of its award-winning TracePro optical design and analysis program. TracePro is intuitive and easy to use in a wide variety of applications including illumination, display design, stray light analysis, biomedical, aerospace, and many others.

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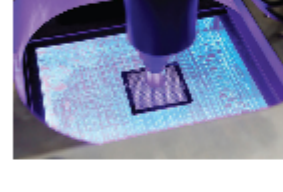


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Armadillo SIA offers a comprehensive line of optical fibers, cables, bifurcated assemblies, patch cords, bundles, and more — all custom designed to your specifications. Assemblies can be made from any of our high-quality fibers and your choice of sheathing, cabling, and jacketing. In addition, we offer all standard connectors or custom-designed ferrules to suit applications from deep UV to MIR.

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Applied Image Inc.

Precision-imaged optical components, calibration standards, and photomasks for various industries and applications. Standard and custom products to test, calibrate, align, control, or measure the performance of imaging systems or as OEM components within imaging, inspection, or measurement systems.

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[Priority Gratings in a Week](#)

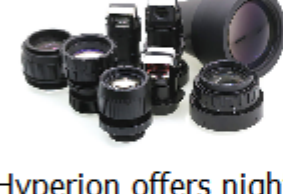
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Our ultrafast and volume-sensitive replication capacity allows rapid delivery of any of our 400+ grating designs without sacrificing

performance and accuracy. Get the results you need for fast/early design when you replicate onto carefully selected and pre-aligned integral system components.

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Hyperion Optics USA

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[Computational Photonics with Microsoft® Excel®](#)

Photonics Media

This book shows how Excel — readily available on almost every computer — can be used to study photonics

problems and to design, analyze, and optimize photonics applications.

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[Custom Optical Flow Cell](#)

Spectrocell Inc.

This unique cell is a challenge for most but not for us at Spectrocell. Because of its use in a high-radiation environment, this cell required special construction using fused silica with minimal metallic impurities.

In addition to that, it required a 0.35-mm window, no distortions, and a 2-mm thermowell sitting at the top of the optical section of the cell.

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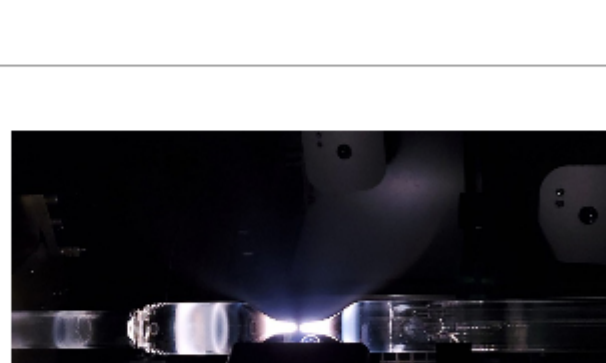
WORLD OF QUANTUM

.: In Case You Missed It

Microsoft Acquires Hollow-Core Fiber Innovator Lumenisity

Microsoft has acquired Lumenisity Ltd., a supplier of next-generation hollow-core fiber (HCF) solutions. The acquisition will expand Microsoft's ability to further optimize its global cloud infrastructure and serve customers with strict latency and security requirements.

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Liquid Crystal Metasurface-Based Spectropolarimeter Cuts Complexity

Researchers led by professor Yuanmu Yang from the State Key Laboratory of Precision Measurement Technology and Instruments, Department of Precision Instruments, Tsinghua University have developed a near-infrared spectropolarimeter based on an electrically tunable liquid crystal metasurface. The team demonstrated an approach to achieve simultaneous polarization and spectral measurements through the tunable metasurface, with high-quality-factor guided-mode resonances combined with a computational reconstruction algorithm.

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Lockheed Martin and Israel's RAFAEL Collaborate on Laser System

Lockheed Martin and Israel's RAFAEL Advanced Defense Systems Ltd. have signed an agreement that includes jointly developing, testing, and manufacturing high-energy laser weapon systems (HELWS) in the U.S. and Israel. The future joint development will be based on the assets that have been developed independently by RAFAEL and the Ministry of Defense's Directorate of Defense Research and Development (DDR&D) within the framework of the IRON BEAM project. The cooperation will be geared toward developing a variant of the system for the American market as well as others.

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.: Upcoming Webinars



Key Considerations for Part and Sample Holding in Interferometric Characterization

Wed, Jan 18, 2023 1:00 PM - 2:00 PM EST

Interferometry is a powerful tool when used to characterize optical surface form errors, as well as accumulated errors, when measuring transmitted wavefronts. Opticians and engineers have many methods available to facilitate such measurements but can often overlook the effects caused by part holding or fixturing. Frank DeWitt of XONOX Technology Inc. discusses what should be considered

when approaching part holding and fixturing for interferometric measurements, the features that are critical to the item being measured, and the required outputs of the measurement.

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Features

Free Space Networks, On-Board Optics, Atmospheric Lidar Detection, sCMOS.

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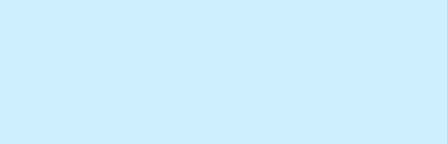
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