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OPTICS NEWSLETTER

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SYDOR OPTICS CUSTOM LARGE OPTICS
IR, UV and visible windows from 300 to 650mm



LLNL's Diffraction Gratings to Enable Most Powerful Laser
 Researchers from Lawrence Livermore National Laboratory (LLNL) and their collaborators developed high-energy pulse compression gratings that will be installed in what will be the world's most powerful laser system. The laser system is designed to deliver up to 10 PW of peak power. One petawatt is about 1000x the capacity of the entire U.S. electrical grid.

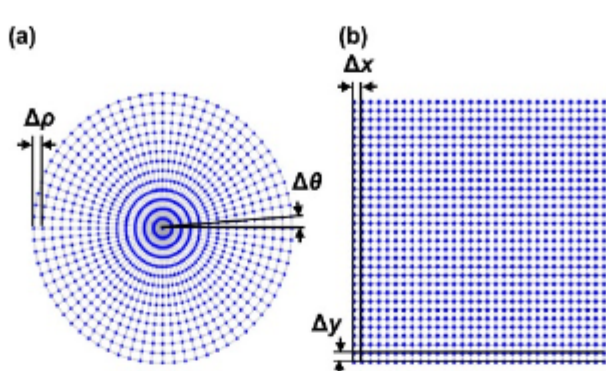
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Tool Path Optimization Bolsters Precision Machining of Freeforms

Researchers from Keio University developed a tool path generation method for driving an independently controlled fast tool servo (FTS) for freeform surface machining. Without necessity of trial and error, the method enabled rapid manufacturing of high-precision freeform optics for various products.

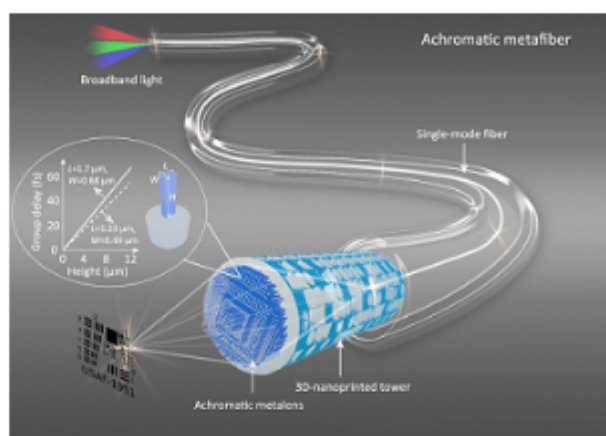
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3D-Printed Achromatic Metalens Brings Fiber Imaging Into Focus

Members of an international research collaboration optimized an optical glass fiber so that light of different wavelengths could be focused with extreme precision. The researchers designed and nanoprinted a 3D achromatic, diffractive metalens on the end face of a single-mode fiber. The developed achromatic metafiber, has a lens diameter of 100 μm and an NA of 0.2.

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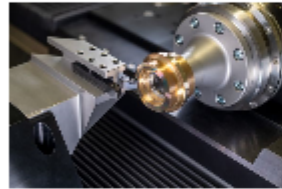
Custom Large Optics

Sydor Optics Inc.
 Sydor Optics can fabricate and manufacture custom IR, UV, and visible windows in a variety of custom sizes, shapes, and substrates based

on decades of experience in medical, defense, industrial and scientific fields. Sydor houses the largest collection of double-sided grinding and polishing machines in North America for...

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Short Cycle Times in Alignment Turning

TRIOPTICS GmbH
 At the Optatec 2022 trade fair in Frankfurt, TRIOPTICS presented the new ATS-C CNC alignment turning station for machining small, mounted lenses in short cycle times.

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Bendable GRIN Lens Widens Imaging Potential of Endoscopic Probes

Researchers from Harvard Medical School and Mass General Brigham created a flexible endoscopic imaging probe that acquired 3D microscopic images of tissue. A flexible GRIN lens, which the researchers also developed, enables the probe's bendability. The development of the lens and demonstration of the probe challenge conventional belief that GRIN lenses can only be used as rigid imaging probes, which may limit their potential in certain applications.

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Microlens Array Fabrication Method Reduces Device Costs

Researchers at the Institute of Technological Sciences at Wuhan University developed a technique for fabricating and characterizing aspheric microlens arrays using 12-bit laser direct writing lithography technology with single beam exposure. The fabrication method points to many application prospects, such as laser beam shaping and wavefront sensing.

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Durable Coating Self-Heals in 30 Minutes Upon Sunlight Exposure

Researchers at the Korea Research Institute of Chemical Technology (KRICT) developed a transparent protective coating material that can self-heal in 30 minutes when exposed to sunlight.

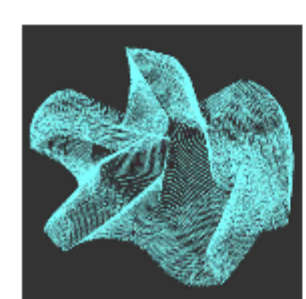
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Optics Accelerates Deep Learning Computations on Smart Devices

MIT researchers have created a method for computing directly on smart home devices that drastically reduced the latency that may cause such devices to be delayed in offering a response to a command or an answer to a question. One reason for this delay is that the connected devices don't have enough memory or power to store and run the enormous machine learning models necessary for the device to understand a question. Instead, the question is sent to a data center that can be

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.: Upcoming Webinars



3D Optical Metrology: Capabilities for a New Era

Thu, Jan 19, 2023 1:00 PM - 2:00 PM EST

Kevin Harding of Optical Metrology Solutions provides an overview of the many 3D optical metrology tools available today. He discusses applications from general manufacturing of durable parts to precision component measurement. He shares examples, typical performance specifications, and the limitations of the many tools on the market today. Harding then considers each technology for both the type of application it is best suited to address, as well as its speed and resolution. Finally, he shows where each technology fits within the bigger picture of practical applications.

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