



Monthly newsletter from the editors of Photonics Spectra, with features, popular topics, new products, and what's coming in the next issue. Manage your Photonics Media membership at Photonics.com/subscribe.

**January 19-22
2021**
Register for free!

Over 70+ presentations

Lasers • Optics
Spectroscopy • Biomedical Imaging

Managing Holography Errors in Asphere Metrology

Aspheric lenses are preferred over conventional spherical lenses in many optical systems for their high optical performance and lightweight and compact form factor. However, measuring aspheric surfaces is not a straightforward process. Metrology options are typically based on interferometry or profilometry. To measure an asphere interferometrically, the reference wavefront must match that of the nominal aspheric form. A computer-generated hologram aspheric null achieves this by converting the wavefront from the aspheric surface into a spherical wavefront and superimposing it over the reference wave in the interferometer.

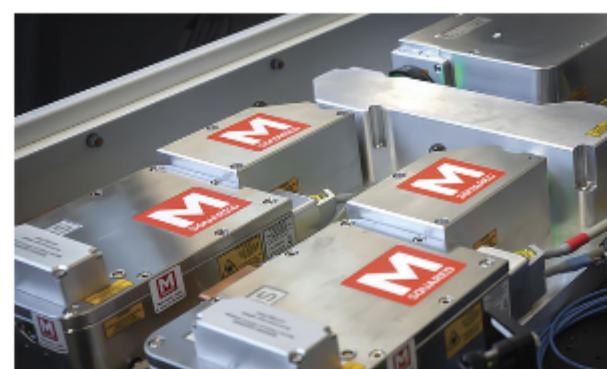
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Exploring the Role of High-Purity Laser Light in Quantum Technology

A second quantum revolution is underway. The first revolution relied on an understanding of the wave-particle duality of electrons and photons, and led to the information age of smartphones, the internet, and supercomputers. Inventions of the second quantum revolution, known as Quantum 2.0, go beyond wave-particle duality to exploit the quantum-mechanical effects of superposition and entanglement. Examples include early prototype quantum computers for performing previously intractable calculations, quantum sensors that measure physical quantities with unprecedented sensitivity, and a new generation of ultraprecise atomic clocks.

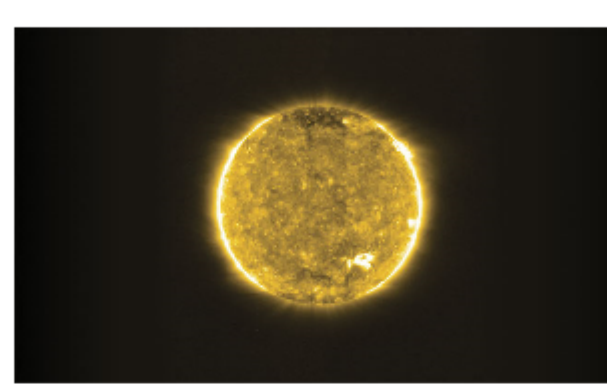
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Capturing Solar Images in the Extreme Environment of Space

Imagine trying to take pictures or make optical measurements on a cloudless day beneath the blistering onslaught of 13 suns. This is the equivalent reality for the European Space Agency's (ESA's) Solar Orbiter and NASA's Parker Solar Probe (PSP), the latter of which is currently operating in temperatures of almost 1640 K in the inhospitable environment around the sun.

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:: Featured Products



[Multi-Axis Systems for Laser Materials Processing](#)

Busch Microsystems

Consult GmbH

Achieve the best performance and highest accuracy for your machining requirements with the Multi-Axis System from Busch. This turnkey solution is designed for laser processing of semiconductor and biomedical applications. Due to the modular design, Busch can customize the system to match your needs.

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[Online Laser Safety Micro Courses](#)

Kentek Corp.

Great news! Kentek has added 5 new online laser safety training micro-courses useful for specific laser safety training or as LSO refresher training. Choose from: Laser Fundamentals, Laser Control Measures, Laser Lab Auditing, Laser Accidents & Incidents, and Laser Hazard Analysis.

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[Superresolution Microscopy Poster](#)

Photonics Media

With interest in the superresolution microscopy field growing rapidly, the editors of BioPhotonics magazine — in collaboration with acknowledged experts — created a poster with readers in mind that is suitable for lab, classroom and office.

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[Optics and Illumination Software](#)

Lambda Research Corp.

TracePro combines a graphical user interface with solid modeling, Monte Carlo ray tracing, analysis features, CAD import/export, optimization methods, and a complete and robust macro language to solve a wide variety of problems in illumination design and optical analysis.

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:: In Case You Missed It

T-Ray Tech Gets Under the Skin

Collaborating scientists from the University of Warwick and the Chinese University of Hong Kong (CUHK) have demonstrated a method that uses terahertz radiation to improve the diagnosis of skin conditions such as eczema, psoriasis, and skin cancer.

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Researchers Creep Closer to Stable Quantum Memory

Researchers at ITMO have shown that individual atoms can be transformed into polaritons — quantum particles that are a mixture between matter and light, which are transmitted via optical fibers. The research may have applications in quantum computing in the form of quantum memory.

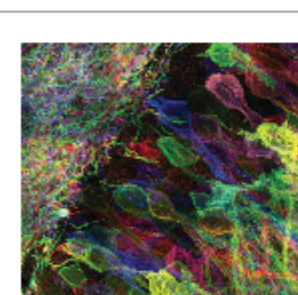
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Optical Moiré Lattices Produce Solitons

Researchers from Jiao Tong University discovered that optical moiré lattices can produce solitons — self-trapped solitary waves — at extremely low power levels. The research establishes potential to explore nonlinear phenomena such as four-wave mixing and second-harmonic generation.

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:: Upcoming Webinars



Optical Tools for Analyzing and Repairing Complex Biological Systems

Tue, Dec 15, 2020 12:00 PM - 1:00 PM EST
Ed Boyden, Ph.D., and his research group at MIT are discovering new optical principles that enable such technologies. In this webinar, Boyden will share examples of such tools and how they are propelling neuroscience.

[Register Now](#)

:: Next Issue:

Features

Laser Materials Processing, Non-visible Imaging, New Optics Materials and Manufacturing, and more.

Photonics Media is currently seeking technical feature articles on a variety of topics for publication in our magazine *Photonics Spectra*. Please submit an informal 100-word abstract to Daniel McCarthy, Senior Editor, at Daniel.McCarthy@Photonics.com, or use our online submission form www.photonics.com/submitfeature.aspx.

About Photonics Spectra



Since 1967, *Photonics Spectra* magazine has defined the science and industry of photonics, providing both technical and practical information for every aspect of the global industry and promoting an international dialogue among the engineers, scientists and end users who develop, commercialize and buy photonics products.

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