

This Week In PHOTONICS

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ALL THINGS PHOTONICS

A podcast from Photonics Media



Top Stories

Tandem Solar Cell Demonstrates 29.15% Efficiency

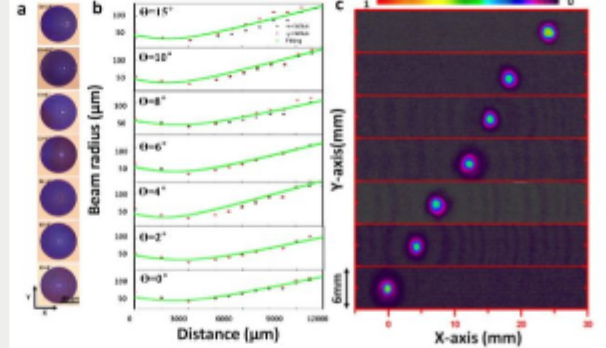
Scientists at Kaunas University of Technology have achieved 29.15% efficiency in a solar cell made of perovskite and silicon. This value was certified by the Callab of the Fraunhofer Institute for Solar Energy Systems. It represents a new world record for a tandem solar element, the KTU researchers said.



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Researchers Demonstrate VCSEL Control Using Ultrathin Metalenses

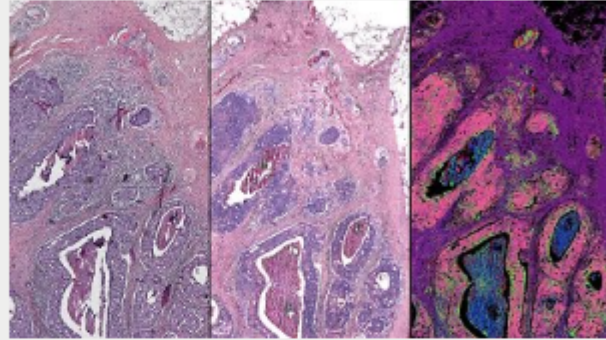
Researchers at the University Côte d'Azur and collaborators at Beijing University of Technology have demonstrated a way to achieve single-axis control in vertical-cavity surface-emitting lasers (VCSELs) using flat, ultrathin optical structures called metalenses.



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Hybrid Microscope Improves Tissue Pathology

Researchers at the University of Illinois at Urbana-Champaign have paired infrared capabilities with high-resolution optical microscopy and machine learning to bring cancer diagnostics into the digital era. The researchers developed the microscope by adding an infrared laser and a specialized microscope lens called an interference objective to an optical camera.



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Featured Products

Optical Fabrication

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Optical Fabrication is a new book for anyone working on or interested in the methods, materials and measurement techniques used in modern lens and optical component manufacturing. The book will serve as an introduction or update, moving beyond methods and materials to design and complex modern applications.

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Defense & Aerospace

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Drawing mainly from the pages of Photonics Spectra and focusing on the last decade or so of developments, Defense & Aerospace offers an overview of these industries as only Photonics Media can present it — from laser paint removal and laser bonding in aerospace, to breakthroughs in quantum sensing.

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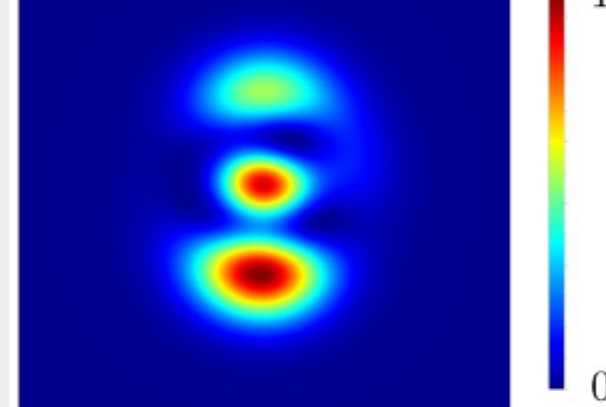
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More News

Neural Network Improves Quantum Tomography

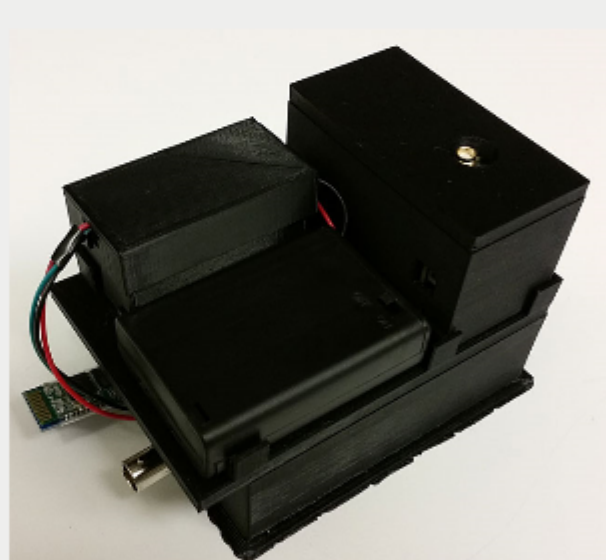
Scientists at Skolkovo Institute of Science and Technology have applied machine learning to the challenges of reconstructing quantum states. Their findings show that machine learning can reconstruct quantum states from experimental data even in the presence of noise and detection errors.



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Portable Device Uses Photomultiplier to Detect Foodborne Illness

Researchers at Purdue University have developed a bioluminescence-sensing assay coupled with a portable light detection device that works with smartphones and laptops to do on-site testing for E. coli in food samples. To facilitate the use of a silicon photomultiplier (SiPM) in a portable, field-deployable device, the researchers designed an electrical circuit consisting of an amplifier, comparator, and microcontroller.



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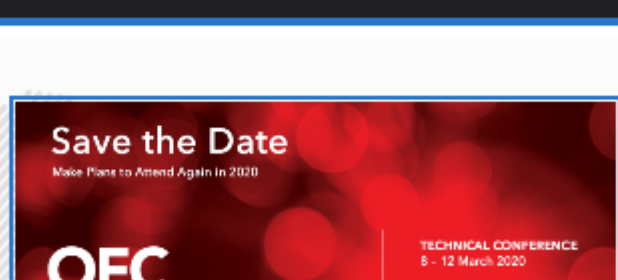
Industry Events

OFC 2020

March 10-12, 2020 - San Diego Convention Center - San Diego
Photonics Media Booth: 6309

For over 40 years OFC, a global conference and exhibition for optical communications and networking professionals, has drawn attendees from all over the world to teach and learn, make connections, and move the industry forward. The five-day technical conference will feature peer-reviewed presentations and more than 180 invited speakers. Additional technical programming throughout the week will include special symposia, in-depth tutorials, workshops, and panels. Attendees will be able to choose from 55 short courses taught by industry experts. Over 700 exhibitors will showcase the industry's latest products and innovative solutions.

[More Info](#)



Webinars

Optical Design and Fabrication: Considerations for Going Custom

Tue, Feb 25, 2020 1:00 PM - 2:00 PM EST

This webinar will address the items to consider when designing and fabricating a custom lens for any given system. Presenter Stuart Singer, chief executive officer at Schneider Optics, Inc., will review the basic parameters and specifications required to analyze a possible commercial off-the-shelf (COTS) lens solution, a modified COTS lens solution, or lens solutions that are fully modified to meet your requirements. He will review basic optics principles and provide practical guidance on optical specification, and will address custom lens design fabrication tolerances with regard to cost and feasibility for single application as well as serial mass production. You will learn how to convey your requirements to an optical design/fabrication company to obtain meaningful quotes and a full understanding of your options. Sponsored by LaCrox Precision Optics, Applied Optics Center, ZYGO, and Precision Glass & Optics.

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