

This Week in PHOTONICS

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PHOTONICS spectra CONFERENCE

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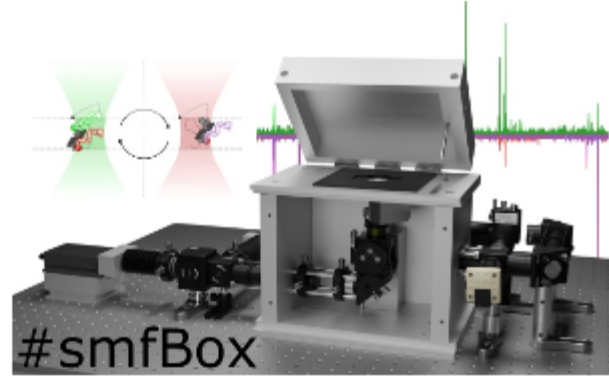
Lasers • Optics Spectroscopy • Biomedical Imaging

:: Top Stories

Scientists Publish Blueprints for Cheap Single-Molecule Microscope

A team from the University of Sheffield has designed and built a single-molecule microscope for one-tenth the cost of commercially available models — and shared the build instructions to make the equipment more readily available. The microscope, called the smfBox, is able to image at single-molecule resolutions.

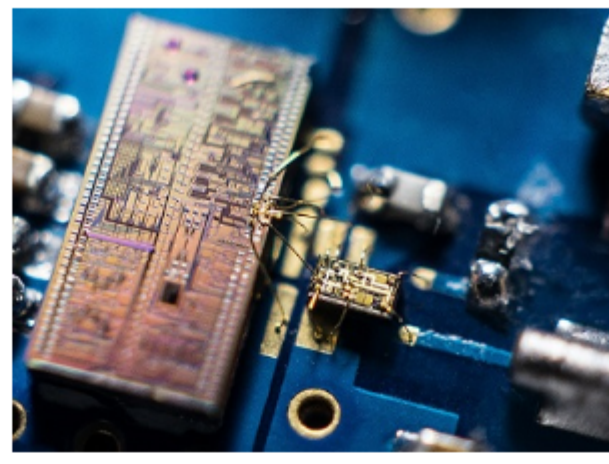
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Researchers Claim New Record in Quantum Light Detection

Researchers from the University of Bristol have claimed a new record for detecting squeezed light, using a newly developed balanced homodyne detector. The work could pave the way for higher-performance quantum computers and quantum communications.

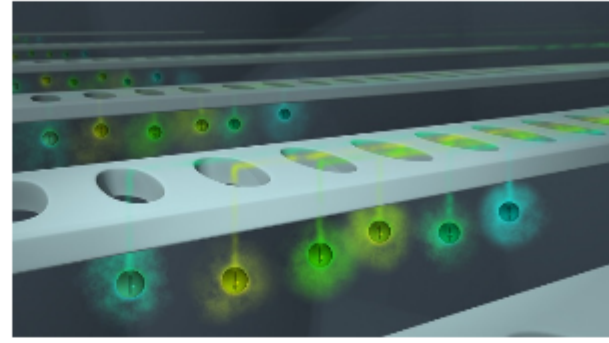
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Researchers Devise Method to Observe Atomic Interactions, Quantum Mechanics

Researchers from Princeton University have formulated a method to control and measure atoms that are indistinguishable when observed with an optical lens. The work allows the researchers to observe atomic interactions and quantum mechanical behavior. The research has implications for quantum networking and the study of the fundamental dynamics of strongly interacting quantum systems.

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:: Photonics Spectra Conference

Emerging, Prominent Trends in Optical Fabrication, Manufacturing Converge in Optics Track

KEYNOTE: How Current Trends in Optics Are Lighting the Path to Turn Science Fiction into Science Fact

Presented by: Jessica DeGroot Nelson, OPTIMAX Systems



Jessica DeGroot Nelson guides an exploration of the role of trending optical methods, as keynote of the *Photonics Spectra* Conference's Optics Track. In introducing optical innovations, DeGroot Nelson will deliver a presentation on the prevalence of scientific technologies across all facets of our world — through a lens that looks closely at how optics and photonics may be moving prophecies in science fiction closer to scientific fact.

Additional sessions will be led by Andrea Armani, the Ray Irani Chair in Engineering and Materials Science and professor of chemical engineering and materials science at the USC Viterbi School of Engineering, and Edmund Optics' Jayson Nelson and Shawn Iles. Conference attendees will participate in sessions spanning optics manufacturing and fabrication, as well as optical systems design. With a focus on all corners of the optics space, presenters from industry and academia will share the latest in prominent topics in metrology, coatings, optical design, and beyond.

For more information and to register, www.photonics.com/psinfo.

The inaugural *Photonics Spectra* Conference starts on Tuesday, Jan. 19, and runs through Friday, Jan. 22. Registration is free for the event, which is offered exclusively online.

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:: Featured Products



Ultra Precise Piezo-Z Focus Stage

Applied Scientific Instrumentation Inc.

The PZ-2000FT XYZ stage

has been specifically designed to provide a high resolution, and highly repeatable, means of controlling the X, Y, and Z position of the microscope stage. The XY axes derive their precise control through the use of closed-loop DC servomotors employing high-resolution rotary encoders for positioning feedback.

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OptoNano Super Resolution Microscope

OptoSigma Corp.

Learn all about the new super-resolution OptoNano 200 microscope system and its innovative optical microsphere technology from OptoSigma. This technology breaks through the spatial resolution limit of 200 nm, enabling extraordinary imaging in ambient environments with no sample contamination, fast data acquisition, all at a low operating cost.

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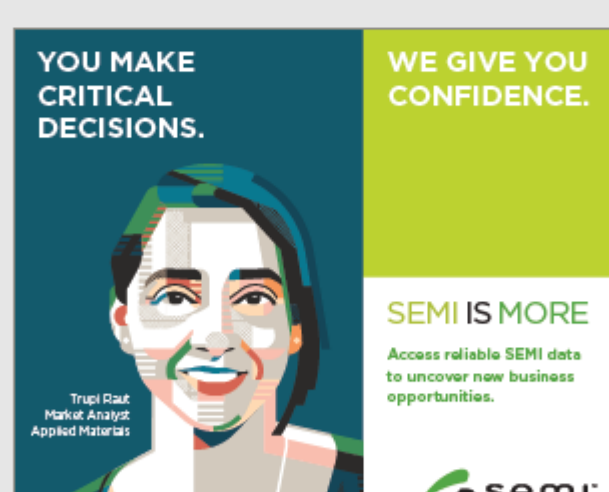
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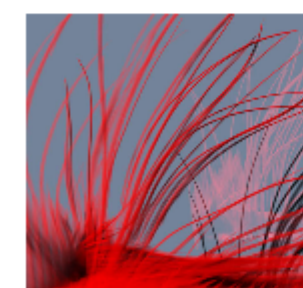
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:: Upcoming Webinars



What's New in Solid-state Illumination for Optical Microscopy?

Tue, Dec 1, 2020 1:00 PM - 2:00 PM EST

This webinar will provide an overview of applications for solid-state, white-light illumination, including a discussion on the newly refreshed family of SOLA light engines from Lumencor. Presented by Lumencor Inc.

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:: All Things Photonics

Vice president of the International Society for Optics and Photonics (SPIE) Anita Mahadevan-Jansen shares her journey in and throughout biomedical imaging and biophotonics, including the discovery of infrared neural stimulation — and working alongside her husband. Garrett Cole, from Thorlabs Crystalline Solutions, stops by to chat about limiting quantum noise in laser beams, high-precision optics, and his presentation in the upcoming *Photonics Spectra* Conference.

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