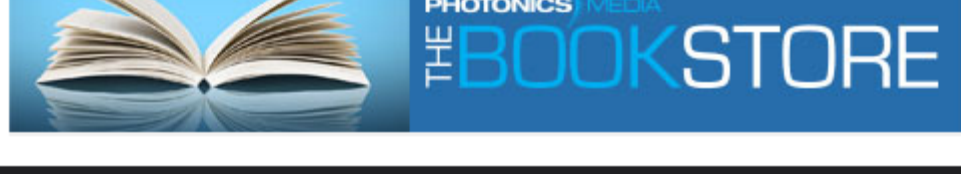


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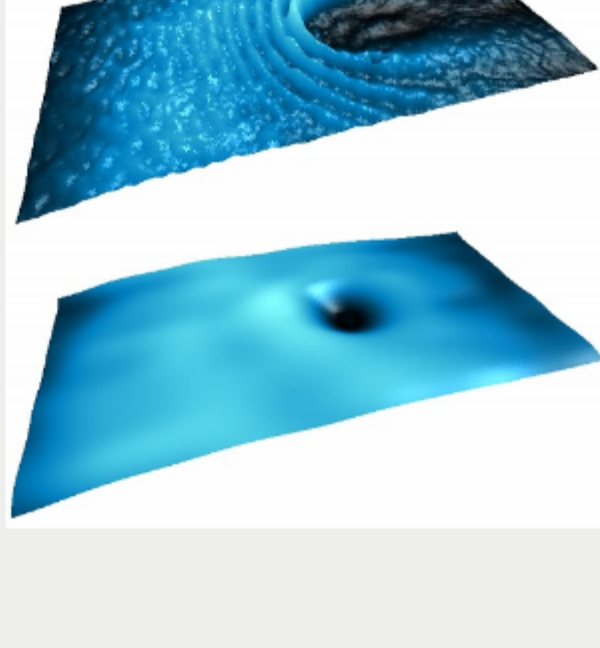


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Photons and Electrons Produce Hybrid Light-Matter Fluid

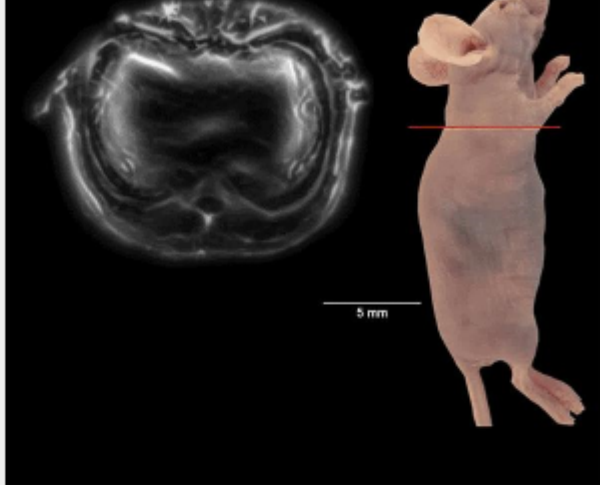
Light is composed of waves, but it can also behave like a liquid. In certain circumstances it can ripple and spiral around obstacles. These liquid properties of light emerge when the photons that form the light wave interact with each other. Researchers have shown that combining light with electrons emits an even more dramatic effect.



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Photoacoustic Imaging Technique Delivers Panoramic Scan of Live Animal in Real Time

A hybrid imaging technique, dubbed single-impulse panoramic photoacoustic computed tomography (SIP-PACT), combines light and ultrasound to provide a full cross-sectional view of a small animal's internal functions in real time, with enough resolution and penetration to see active organs, flowing blood, circulating cells and firing neural networks. In contrast to SIP-PACT, pure optical imaging methods can exhibit a poor depth-to-resolution ratio. Non-optical techniques can show a lack of spatiotemporal resolution or functional contrast.



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Low-Cost Material Produces White Light That Imitates Sunlight

Persistent luminescence materials are used in everyday glow-in-the-dark applications and show high potential for medical imaging, night-vision surveillance and enhancement of solar cells. The materials that make these applications possible contain rare earths and heavy metals that are expensive. Researchers at the University of Turku in Finland have developed a low-cost synthetic material that emits luminescence closer to sunlight than that of the currently used lanthanides.



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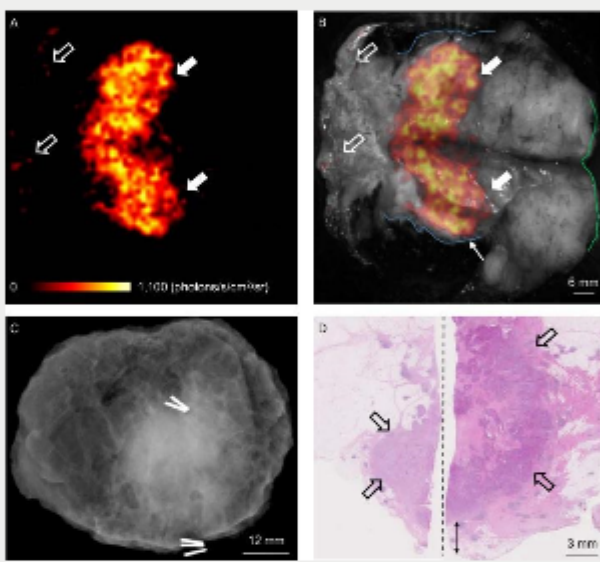


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Optical Imaging Technique Could Improve Breast-Conserving Surgery Results

Use of Cerenkov luminescence imaging (CLI) could provide a more accurate technique for assessing resection margins during breast-conserving surgery, a primary treatment for early-stage breast cancer. CLI combines optical and molecular imaging by detecting light emitted by a PET radiotracer F-18-fluorodeoxyglucose (F-18-FDG). CLI's high-resolution and small-sized imaging equipment make it a promising technology for assessing tumor margins during breast tumor surgery.



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Clemson Receives Funding from DoD for Laser Weaponry Research

Two researchers at Clemson University are taking different but complementary approaches to creating a high-energy laser that could be used as a weapon. The engineers are receiving a combined \$3.2 million from the U.S. Department of Defense (DoD) to help fund the research.



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PI (Physik Instrumente) LP - V8 Power from New Piezo Linear Motor for Industrial Applications

Borrowing from the classic design of a V-8 engine to achieve high push/pull and holding forces, patented piezo actuator technology and linear stepping motion design principles come together to create the fastest and strongest non-magnetic drive of its class size. These robust OEM walking piezoelectric motors are self-clamping, i.e. at rest or in steady-state mode, they automatically hold the position without any need for power.



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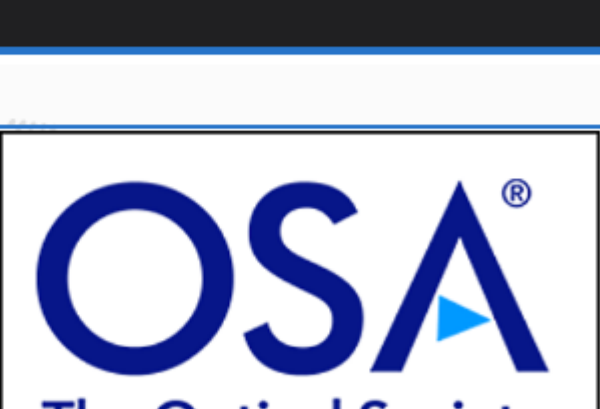
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Industry Events

OSA Applied Industrial Optics: Spectroscopy, Imaging, and Metrology 2017

June 25-30, 2017 - Hyatt Regency - San Francisco United States
At Applied Industrial Optics (AIO), industry experts and professionals with experience in overcoming the challenges of deploying and commercializing new technology meet research groups striving to get their technology out of the lab. In addition to traditional presentations, AIO hosts panel sessions aimed at fostering dialog and new collaborations among attendees. Topic categories include: instrumentation, metrology, imaging systems, applied spectroscopy, wearable devices, clinical diagnostics, harsh environment systems and emerging laser, fiber, and photonic technologies.



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Webinars

Optics-Based Tools for Cancer Care

Tue, Jun 27, 2017 2:00 PM - 3:00 PM EDT
Nirmala (Nimmi) Ramanujam, Ph.D., will speak on optical tools and techniques she is developing for cancer screening in resource-limited settings. Professor Ramanujam is leading a multi-disciplinary effort to translate these technologies to clinical applications in the breast and cervix. In addition to her academic efforts, professor Ramanujam has spun out a company, Zenalux, to commercialize several of the technologies developed in her lab and is developing and creating the processes to move technologies further down the commercialization pipeline within Duke. Ramanujam is Robert W. Carr Jr. professor of Biomedical Engineering, professor in Pharmacology & Cancer Biology and Global Health, and founding director of the Global Women's Health Technologies at Duke University.



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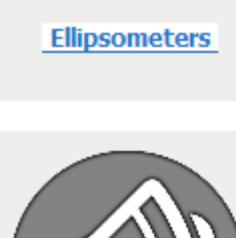
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