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Top Stories

Virtual Reality Diagnoses Balance Disorders

Disorders of balance and vestibular function (balance and eye movement) can be diagnosed using a new portable, and inexpensive virtual reality device. Researchers at Kaunas University of Technology (KTU) and Lithuanian University of Health Sciences (LSMU) have joined forces to develop this new technology to diagnose a common health disorder.

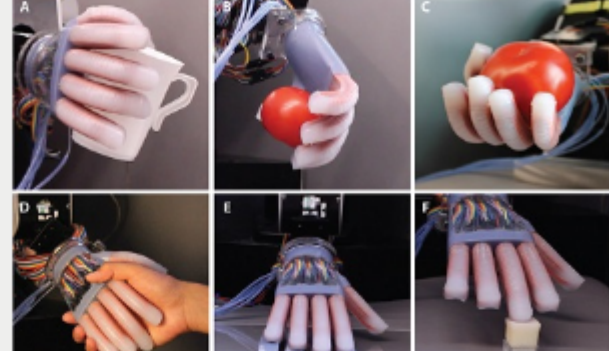


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Robot with a Human Touch

A soft robot has been created that can feel its surroundings internally, much like humans do. Using stretchable optical waveguides as curvature, elongation and force sensors in a soft robotic hand, researchers at Cornell University have overcome the hindrances often associated with using motorized means for sensing.

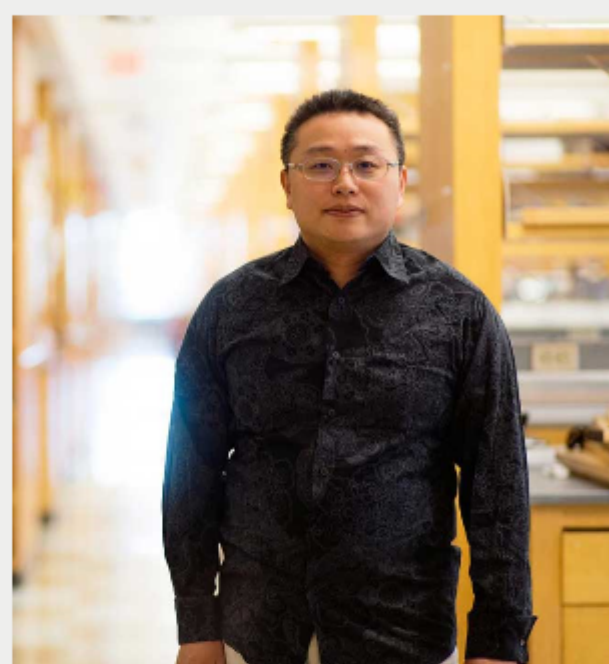


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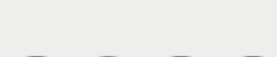


Photodynamic Therapy Could be Made Easier With NIR Light Absorbing Molecule

The clinical application of photodynamic therapy (PDT) could be enhanced through the use of a novel class of molecules. The carbazole-substituted BODIPY (Car-BDP) molecule has an intense, broad NIR absorption band (600–800 nm) with a high singlet oxygen quantum yield ($\Phi\Delta = 67\%$). When researchers from UMass Medical School (UMMS) encapsulated Car-BDP with biodegradable PLA-PEG-FA polymers, Car-BDP formed uniform organic nanoparticles that were water-soluble and tumor-targetable.



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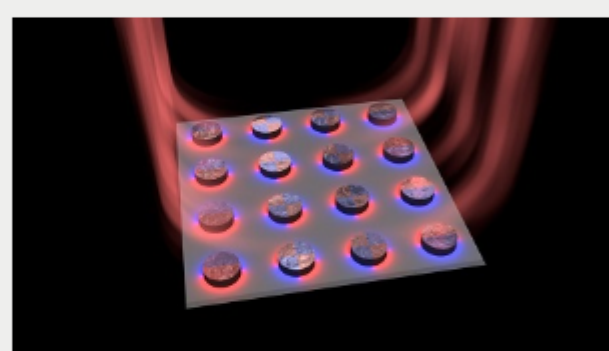
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Tiny Laser Created Using Nanoparticles

Using "dark lattice modes," researchers at Aalto University have created a plasmonic nanolaser that operates at visible light frequencies. The laser works at length scales 1000 times smaller than the thickness of a human hair. The results open new prospects for on-chip coherent light sources, such as lasers, that are extremely small and ultrafast.

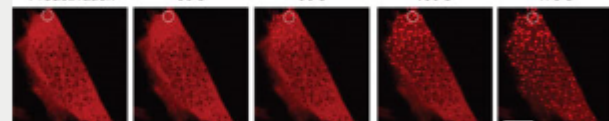


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Optogenetics Tool Uses Light to Activate Control of Intracellular Phase Transitions

A novel optogenetics platform, dubbed optoDroplet, uses light to activate phase transitions inside living cells. The optoDroplet system is being used to study the condensed phases driven by intrinsically disordered protein regions (IDRs). Its use could lead to a better understanding of cellular processes, including how proteins assemble and the potential link between protein aggregates and disease.



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Featured Products



IPEX-700 Excimer Laser

LightMachinery Inc.

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TAG Optics' Inspector is a state-of-the-art high-resolution digital microscope designed for telecentric inspection. It has the unique ability to image complex geometries without the need for multiple detectors or sub-system assemblies.

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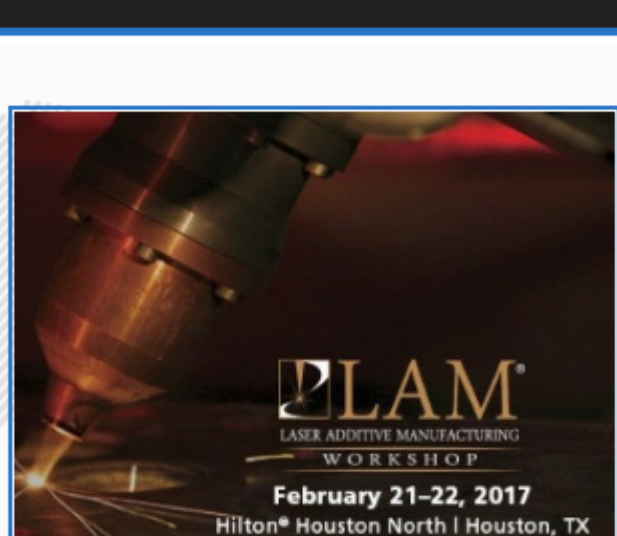
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Industry Events

Laser Additive Manufacturing workshop (LAM®)

February 21-22, 2017 - Hilton Houston North - Houston (United States)
This year, LAM will have presentations on the latest from researchers and industry presenters on when, where, and how to use laser additive manufacturing. Attendees will learn about additive manufacturing from design, materials, modeling, manufacturing to applications. A new session on micro/nano laser additive manufacturing will cover the latest research in this rapidly rising area of laser manufacturing.

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Webinars

OLED Microdisplays: Advancing Virtual and Augmented Reality Smart Glasses

Thu, Jan 19, 2017 10:00 AM - 11:00 AM EST

Data glasses and wearables are changing the way many of us live, as well as enhancing vision capabilities in industry and defense. In this webinar, presenter Uwe Vogel, director of the Microdisplays and Sensors in Division at Fraunhofer FEP, will discuss the four types of microdisplay technology, the primary attributes of microdisplay and technical challenges. He will cover near to eye (NTE) displays, the markets for these displays and the companies currently offering NTEs, and will introduce Fraunhofer's novel technology for an OLED microdisplay that is extremely bright, yet consumes ultra low-power. He will conclude with a look at where the technology is headed, including advances such as OLED on silicon.

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