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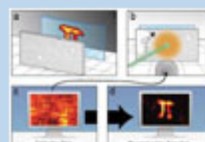


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Creating Order From Disorder

Light scattering makes clear imaging through an opaque material seem insurmountable, but researchers have discovered that the resulting speckle pattern actually contains the key to restoring the shape of the original object. The findings could have important applications in bioimaging. The speckle pattern "is not completely random but contains some subtle correlations. We realized that the knowledge that these correlations are present was enough to get some information on the object," Dr. Jacopo Bertolotti of the University of Twente's MESA+ Institute for Nanotechnology told *BioPhotonics*.

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Laser Device Images, Tracks Cells, Dye-free

Without contrast dyes or fluorophores, a new device can image and track living cells' reactions to various stimuli and create 3-D images of biological tissue at the nanoscale in just minutes. The system combines holographic microscopy and computational image processing to obtain 3-D images of living cells from every angle at a resolution of less than 100 nm. Because the tissue can be imaged without using contrast dyes or fluorescents, foreign substances will not distort the experimental results.

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Polymer Lens Almost Identical to Human Eye Lens

A multilayered polymer gradient refractive index (GRIN) lens inspired by the human eye could one day provide a more natural alternative to implantable eye lenses and consumer vision products.

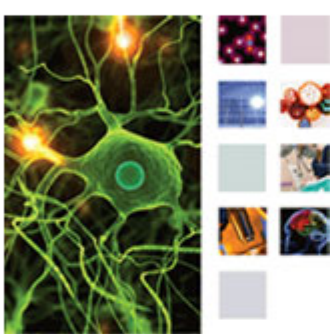
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Prism Winner Nominated for Edison Award

Verisante Technology Inc.'s Aura skin cancer detection device was named a 2013 Edison Awards finalist. The company recently won a Prism Award for the device.

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Quantitative Imaging of Collagen Fibers Using Second-Harmonic Generation
 University of Illinois, Photonics Research of Bio/Nano Environments (PROBE) lab group

Dr. Melissa Skala
Photothermal Optical Coherence Tomography of Nanoparticle Contrast Agents
 Vanderbilt University School of Engineering, Optical Imaging Laboratory

Dr. Ofer Levi
Multimodal Optical Neural Imaging with VCSEL Light Sources
 University of Toronto, Institute of Biomaterials and Biomedical Engineering

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Microstructures with Living Cells

The behavior of cells strongly depends on their environment, and now a laser system being developed in Austria could create microstructures for embedding living cells in suitable surroundings for research and manipulation.

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3-D Stress Map Reveals Embryonic Heart Defects

Stresses induced in an embryonic heart by blood flow have been visualized for the first time in 3-D using an optical coherence tomography (OCT) method. The technique could provide new insight into how and why heart defects develop.

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Laser Technique Unravels Spider Silk's Mysteries

A noninvasive, noncontact laser light scattering technique may be the key to unraveling the secret behind spider silk's strength. Although spider silk is an exceptional biological polymer, it is more complex in structure than its kin, collagen (the stuff of skin and bones), scientists say.

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In this edition of the industry's premier weekly newscast: A flexible new image sensor is completely transparent, silicon nanocrystals make color LEDs, a holographic imager could have biomedical applications, and a new art installation puts a unique spin on an everyday object. Hosted by Photonics Media's Laura Marshall and Melinda Rose.

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