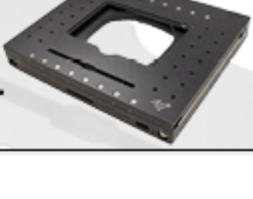



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OCT Presents Multidimensional Imaging for Diagnosis and Detection

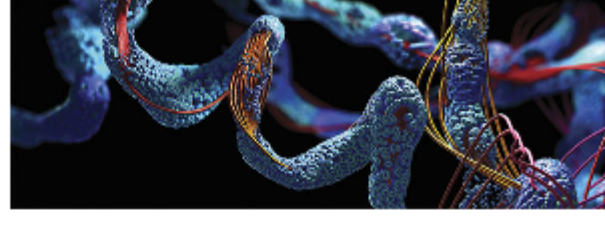
Optical coherence tomography is a noninvasive imaging technique that is used to deliver high-resolution images in two or three dimensions. It relies on the wave-like properties of light to produce a low-coherence interference spectrum. In recent decades, this approach has proved to be very beneficial in industry and in medicine. In 1992, a startup company called Advanced Ophthalmic Devices, which grew out of a collaboration at MIT, first used an OCT system as a medical imaging technique for ophthalmology. Since that time, the technology has expanded to enable better understanding and detection of ophthalmic conditions and diseases, including glaucoma, cataracts, diabetic retinopathy, pigment cell detachment, and retinal detachment.



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Charge Clusters in a Monomeric Protein Alter Optical Absorption

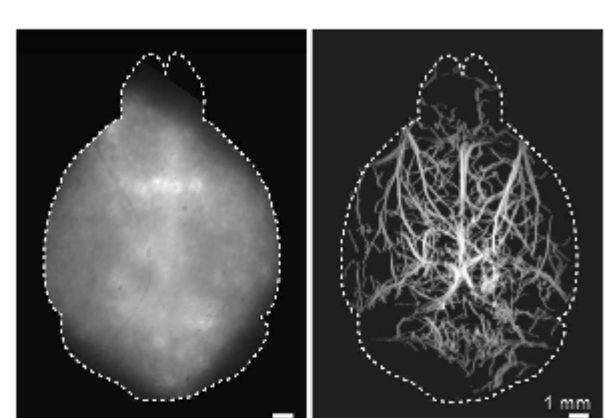
Electronic absorption of proteins that lack cofactors, prosthetic groups, or noncoded amino acids as part of their structure has traditionally been thought to originate from protein backbone (peptide bond) and aromatic chromophores in the side chains. These side chains are chemical groups attached to the backbone that help the proteins to function. Among the protein chromophores — peptide bond/Trp/Tyr/Phe — the absorption occurs in the 190- to 320-nm region. Wavelengths above 320 nm are believed to be optically silent for such proteins.



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Fluorescence Microscopy Technique Images Brain at High Resolution

A noninvasive brain imaging technique developed by researchers at ETH Zurich and the University of Zurich works in the near-infrared (NIR) spectrum to enable superresolution deep-tissue fluorescence microscopy at four times the depth limit imposed by light diffusion. The technique, diffuse optical localization imaging (DOLI), operates in a resolution-depth regime previously inaccessible with optical methods.



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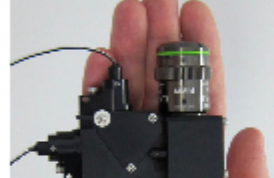
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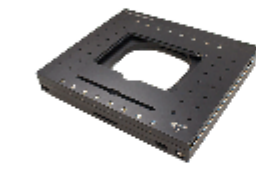
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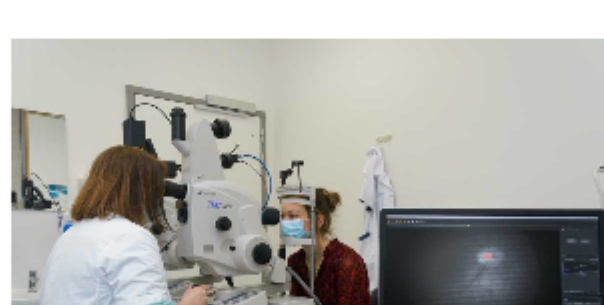
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.: In Case You Missed It

Hyperspectral Imaging, OCT Team to Detect Early Biomarkers of Alzheimer's Disease

A research and engineering team imec used imec's hyperspectral snapshot camera, SNAPSCAN, to collect information from 16 spectral bands in a single capture. The team is exploring retinal imaging techniques to quantify the accumulation of amyloid-beta protein in the brain.



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Near-Infrared Hyperspectral Approach Quantifies Fat Distribution in the Liver

Researchers from Tokyo University of Science and Osaka University used near-infrared hyperspectral imaging to quantitatively analyze the distribution of lipids in a mouse liver. The ability to do so, using hyperspectral imaging, charts a course for noninvasive diagnostics of nonalcoholic fatty liver disease (NALFD), which can cause liver failure and other diseases.

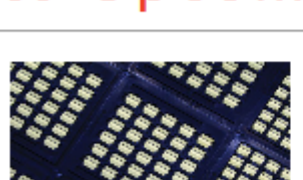
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Machine Learning-Enabled NIR Hyperspectral Imaging System IDs Hidden Tumors

Collaborating researchers from Tokyo University of Science, National Cancer Hospital East, and RIKEN Center for Advanced Photonics have developed a technology using near-infrared hyperspectral imaging (NIR-HIS) and machine learning that finds hidden tumors, such as those in deep tissue and/or covered by a mucosal layer.

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AuSn Thin-Film Technology and AuSn Pre-deposited Substrates for Optoelectronics

Wed, Aug 25, 2021 10:00 AM - 11:00 AM EDT

AuSn thin film is a critical technology to enable an optoelectronic device to ensure durability, anti-oxidation ability and reliability compared with Indium, SnPb, SnBi, and others. In this webinar, Allen Liu of Focuslight Technologies Inc. explains the design, key processes, and application data of high-power laser diode devices. Presented by FocusLight Technologies Inc.

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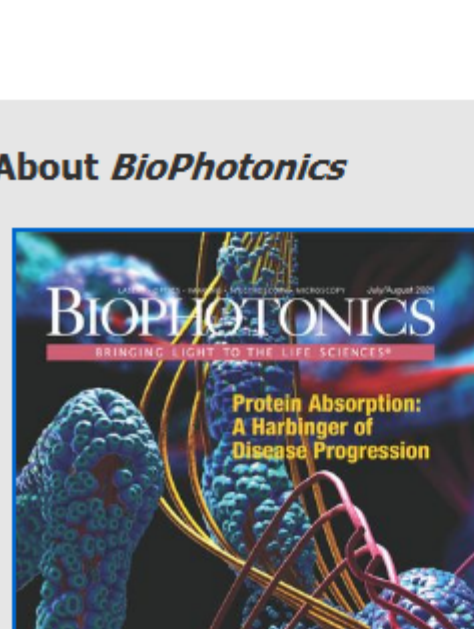
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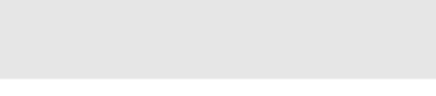
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