Wednesday, November 16, 2022

MICROSCOPY TECH PULSE

Microscopy Tech Pulse is a special edition newsletter from Photonics Media and Prior Scientific Inc. covering key developments in microscopy technology.

Nobel Prize-Winning Technique Helps Resolve Imaging Challenge

Using a technique that was awarded the 2022 Nobel Prize in chemistry, researchers at Cornell University used expansion microscopy to study lipids, the water-repellent, dynamic components that comprise the walls of cells and organelles. The technique, called Lipid Expansion Microscopy, will enable closer study of biological membranes, which are the site of critical cell signaling and nutrient exchange. These processes can lead to disease if disrupted.

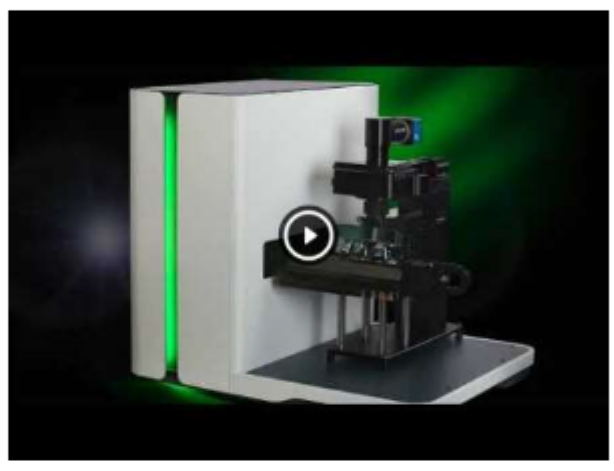
Read Article

PROMOTED CONTENT

Prior Scientific Inc. - SL160 Slide Loader

Prior Scientific is pleased to introduce its newest automated slide loader, the SL160. This 160 slide capacity loader combines reliability, easy set up, and high capacity to provide automated slide loading to a wide variety of existing upright microscopes or with the use of Prior's OpenStand microscope. This SL160 will be the standard for OEMs and system integrators and allow for precise and safe loading of slides for the pathology, cytology, and screening markets.

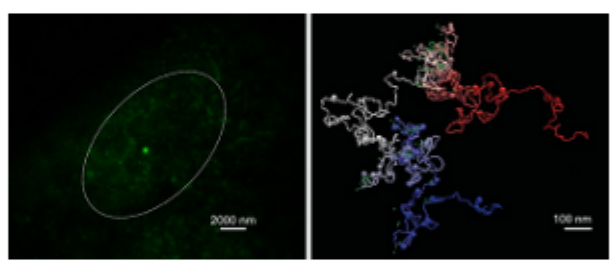
Watch Video



Superresolution Method Poised to Improve Gene Function Understanding

An interdisciplinary team from the Centre for Genomic Regulation and the Institute for Research in Biomedicine has developed an imaging technique that captures the structure of the human genome to reveal how individual genes fold at the nucleosome level — the fundamental units constituting the genome's three-dimensional architecture. The technique integrates superresolution imaging with advanced computational modeling.

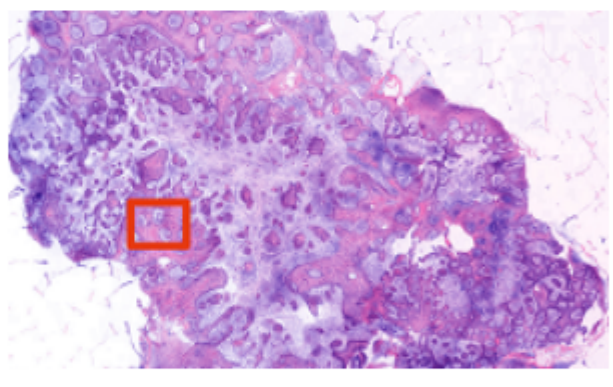
Read Article



Imaging System Speeds Diagnosis with Real-Time Biopsy Analysis

Results of a pilot study conducted at the University of Rochester showed that a system based on two-photon fluorescence microscopy (TPFM) enabled rapid diagnosis of nonmelanoma skin cancer through real-time imaging of unprocessed, fresh tissue biopsies. TPFM imaging of nonmelanoma skin cancer was able to occur within minutes of obtaining biopsies, and the system provided histological features comparable to those of conventional histology.

Read Article



Model Reveals Microspheres' Effect on Interferometric Resolution

Though microspheres — microscale spherical particles that can be manufactured from natural and synthetic materials — are known to improve lateral resolution and enhance magnification in microscopic imaging, a generally accepted explanation for their positive effect on resolution has yet to be introduced. Now, thanks to results from a a recent study, researchers at the University of Kassel have determined that a local enhancement of the numerical aperture is most likely the cause of the resolution enhancement provided with microspheres.

Read Article

PHOTONICS MEDIA photonics.com