Superresolution Microscopy

LSM 880 with Airyscan is a new confocal laser scanning microscope which offers high sensitivity, enhanced resolution in \(x\), \(y\), and \(z\), and high image-acquisition speed in one system. Users achieve a 1.7x higher resolution in all spatial dimensions, 140 nm laterally and 400 nm axially. The high sensitivity leads to better image quality and increased speed. A classic confocal microscope illuminates one spot on the sample to detect the emitted fluorescence signal. Out-of-focus emission light is rejected at a pinhole, the size of which determines how much of the Airy disk reaches the detector. Users can increase the resolution by making the pinhole smaller, but the signal-to-noise ratio drops significantly, since less valuable emission light is passing through. LSM 880 lets the user take full advantage of large fields of view and the highest speed of any linear scanning confocal microscope at an unsurpassed image quality.

ZEISS
For info: 800-233-2343
www.zeiss.com/lsm880

Superresolution Microscopy Software

The Olympus FV-OSR software module enables users of the Fluoview FV1200 easy access to what was previously the domain of only specialized microscopy systems. The extra detail offered by superresolution technology facilitates researchers in revealing the most subtle mechanisms at work within cells or tissue. Three-dimensional confocal laser scanning microscopy with the Fluoview FV1200 achieves a vastly improved lateral and axial resolution compared to standard widefield, but is still limited by the diffraction limit of light. In certain settings images can therefore suffer from poor contrast. This is where superresolution microscopy comes into play, breaking the diffraction limit of light and enhancing cell and tissue imaging studies. Drawing from the latest Olympus optical and digital technologies, the Fluoview FV1200 can now be transformed into a system capable of reaching a resolution of up to 120 nm, with simultaneous multicolor capture. The proprietary technology of the FV-OSR software controls specific hardware settings and advanced signal processing.

Olympus
For info: +49-402-3773-5913
www.olympus-europa.com/microscopy

Deep-Cooled CCD Camera

The new Syncerity back-illuminated, deep-cooled CCD camera comes with an NIR-enhanced 2048 x 70 sensor. This CCD sensor is designed for companies requiring an affordable OEM camera for VIS-NIR spectroscopy applications. This new Syncerity camera joins the existing Syncerity with front illuminated 1024 x 256 CCD sensor for UV-VIS-NIR applications. Its high-resolution 14 \(\mu\)m pixel size makes it ideal for Raman instrumentation. Syncerity NIR offers ultralow etaloning and more than 40% Quantum Efficiency at 1,000 nm. Peak QE of 84% at 700 nm, and 20% at 1,050 nm means the Syncerity back-illuminated NIR offers a broad response. It is also available in a back-illuminated UV-VIS optimized configuration. Its lifetime vacuum warranty and compact size make it ideal for OEM integration, particularly in Raman microscopes, and its flexible design allows the OEM-dedicated Horiba team to quickly adapt the camera for industrial applications.

Horiba Scientific
For info: 732-494-8660
www.horiba.com/syncerity

Optical Imaging System

The Solaris quantitative optical molecular imaging system is a preclinical optical imaging system for use in small and large animal studies that will help to advance drug discovery and translational research to develop and validate molecular-guided surgical research protocols. The Solaris system, when combined with PerkinElmer’s suite of fluorescence molecular imaging probes, can bridge molecular imaging research techniques to support potential clinical outcomes. By distinguishing healthy versus diseased tissue in real-time, researchers can more accurately and completely map tumors. The Solaris system is designed for ambient lighting conditions found in preclinical surgical research suites and can dynamically use a broad and versatile range of fluorescent probes, offering flexibility for translational researchers when targeting diseases. Its research applications include drug efficacy, drug safety, measurement of real-time biological therapeutic responses, and advanced molecular-guided surgery applications such as surgical tumor margin determination in live animal models.

PerkinElmer
For info: 877-754-6973
www.perkinelmer.com

Inverted Microscope

The Leica DMi8 inverted microscope with built-in modularity is designed to grow and adapt to ever-changing research needs. With this new concept, life scientists can custom-configure an inverted microscope now and upgrade it in the future for applications ranging from basic imaging to advanced fluorescence microscopy. The Leica DMi8 is equipped with an additional incident illumination port, the Infinity Port, which facilitates the integration of additional light sources and laser systems for advanced applications. The closed-loop focus drive with an accuracy of 20 nm for the 12 mm travel range enables researchers to investigate large specimens with high precision. In combination with Leica Microsystems’ imaging software the Leica DMi8 is an optimal solution for live-cell microscopy. The Leica DMi8’s Infinity Port is the core of the system and enables access to the infinite light path. It integrates light sources and lasers that are necessary for FRAP, photo-switching, ablation, and many state-of-the-art microscopy techniques.

Leica Microsystems
For info: 800-248-0123
www.leica-microsystems.com/dmi8

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