

The **Cell Observer SD** (SD = Spinning Disc) from **Carl Zeiss** enables confocal observation and documentation of experiments with living cells over a long period of time and at high frame rates. This microscope system provides high-end research in the field of the life sciences with new experimental possibilities. Thanks to the full integration of the **CSU-X1 confocal scanning unit manufactured by Yokogawa Electric Corporation** (Japan) into the ZEISS Cell Observer SD, it is now possible to offer users an ideal one-stop solution. The excellent features of the system such as confocal imaging of very fast processes with optimum specimen protection and



without bleaching effects are particularly beneficial if fast, dynamic processes are to be examined. This is the case in research, particularly in molecular cell biology, developmental biology and neurobiology and in Live Cell Imaging in general. The Cell Observer SD system and the entire line of incubation accessories from Carl Zeiss enable users to observe living specimens for hours without damaging them. All major incubation parameters such as temperature and CO₂ content are saved automatically together with the image data. Convenient control, monitoring and documentation of the experiments are possible thanks to the integration of the CSU-X1 unit into the Carl Zeiss system. All settings are made via the AxioVision software. The software modules can be combined – from simple camera control, multichannel imaging to a special high-speed mode for maximum frame rates to the absolutely simultaneous operation of two cameras. Furthermore, it is possible to integrate other techniques, e.g. FRAP. The Cell Observer SD optimally integrates all of the features of the CSU-X1.

The **LSM 700 Laser Scanning Microscope** from **Carl Zeiss** sets a new standard for confocal microscopy with maximum performance at a favorable price. High flexibility both in application and system structure is the outstanding feature of the LSM 700.



The fields of application extend from simple routine to multidimensional images in biomedical research. The system can be combined with a large number of microscope stands and tailored to the personal requirements of each user. This makes it ideal as an entry-level system for confocal microscopy. The optical design of the LSM 700 guarantees high efficiency in the detection

even of weak fluorescence signals. Key elements of the optical system include the beam path design with its maximum optical precision and the uncompromising concentration on the essentials, the beam combiner system for extremely accurate beam coupling and superimposition, the beam splitter with continuous and loss-free splitting of the light spectrum and, last but not least, the extremely stable pinhole.

Carl Zeiss SMT has set a new record resolution benchmark for scanning electron and ion microscopy – pushing scanning beam technologies beyond its current limits. By employing ZEISS' revolutionary **ORION Helium-ion microscope, a surface resolution of 2.4 Angström (0.24 Nanometer) has repeatedly been achieved** (25%-75% edge-rise criterion) on various samples. This resolution – which is close to the diameter of a single atom – is three times better than even the most sophisticated scanning electron microscopes are able to achieve today with the same surface sensitivity. It sets the new benchmark for surface imaging in the subnanometer range. Existing customers will have an opportunity to upgrade their systems to this performance level. For more information on the breadth of solutions offered by Carl Zeiss MicroImaging, please visit www.zeiss.com/micro.

South Bay Technology, Inc. introduces the **IBSe**, Ion Beam Deposition and Etch system featuring a broad beam low energy 1cm ion source for ion beam polishing of large EBSD areas, slope cutting capabilities, ion beam

etching/cleaning and ion beam removal of amorphous damage from high energy processes. The system is table top, turbo pumped with four target carousel selectable under vacuum, large area sample capability up to 4" diameter and sample stage movement including rotation, sectoring, rocking, fixed angle tilt and shuttering capability. Contact www.southbaytech.com for more information.

Linkam releases new high precision temperature controllers for heating stages. Linkam has been manufacturing world-leading temperature controlled microscopy products for over 25 years. The new T95 range of temperature programmers have been designed to provide more capabilities, connectivity and resolution than previous generation controllers. The performance of existing Linkam products such as the definitive **LTS350 and THMS600 hot stages** is extended with broader heating/cooling rate ranges and higher heating temperature limits. Improved sensor precision and resolution benefits the measurement and control of Linkam's advanced thermal techniques such as the TST350 tensile stage and optical DSC instruments. The T95 programmer leads Linkam's new campaign of "trade-in to trade-up." All heating stage users, whether users of Linkam systems or not, have the opportunity to upgrade to a new Linkam system incorporating either of the new T95-linksys or T95-linkpad controllers. Linkam also commits to take away any old electronic components and either use them as spare parts or recycle them as part of the WEEE Directive. Details may be found on Linkam's web site, www.linkam.co.uk

CoolLED is pleased to announce the launch of its new **Dual-Adapt light source adaptor for microscopes**. This adaptor allows two light sources to be fitted simultaneously to the epi-fluorescence port of a microscope. Users can attach CoolLED's LED light source at the same time as a conventional mercury or metal-halide source. A simple mechanical switch moves a mirror to select the desired light source without having to make any physical changes to the microscope set-up. It is quick and convenient. A particularly attractive feature of the Dual-Adapt is that two of CoolLED's LED sources can be fitted at the same time. By replacing the switchable mirror with a dichroic filter, it is possible to have eight (8) LED excitation wavelengths fitted to the microscope at the same time. For further details visit : www.precisExcite.com

JEOL USA will install the first e-beam direct-write-on-wafer lithography tool to support nanoscience research in the Pacific Northwest when the University of Washington takes delivery of a JEOL JBX-6300FS e-beam system. The system will be installed in the state-funded Washington Technology Center Microfabrication Lab. Funding for the tool acquisition was provided through a state-supported STAR researchers' grant to Michael Hochberg, Assistant Professor of Electrical Engineering, and a matching grant from the Washington Research Foundation.

JEOL USA is pleased to offer the latest tomography solutions for transmission electron microscopy (TEM). Tomography, or three-dimensional (3D) reconstruction of multiple TEM images, has developed in the past decade as one of the more important applications in the field of life sciences and, more recently, in the field of materials science. Through its applications group, JEOL USA **offers support for tomography comprised of three software packages: SerialEM and IMOD**, both developed at the University of Colorado (Boulder), and Chimera, which was developed at the University of California San Francisco. Each of these packages is freely available and has become the *de facto* academic standard for routine tomography acquisitions, processing and visualization of resin-embedded as well as beam-sensitive vitrified specimens. More information can be seen on the JEOL USA website at www.jeolusa.com/Tomography.

Leica Microsystems proudly introduced the new **Tunable 'White Light' Laser Confocal, the Leica TCS SP5 X**. The ideal situation for imaging cellular fluorescence via confocal microscopy would be a freely tunable 'white light' source that could optimally excite fluorescence dyes wherever their peak might fall. The Leica TCS SP5 X Confocal System with Supercontinuum technology allows the cell biologist to dial-in the optimum

excitation wavelength and turn down the laser excitation power to increase cell viability. Leica Microsystems also showed a variety of other systems, including the new Leica M205 C, which is the world's first stereomicroscope with a magnification zoom range of 20.5x. This zoom range breakthrough, however, is not the only technology leap the Leica M205 C design presents. With Leica Microsystems' new FusionOptics™, the microscope successfully overcomes the previous limits of optical technology. In addition to increased magnification, the resolution has increased to up to 453 lp/mm, which corresponds to a structure size of 952nm. This new level of high performance benefits everyday work at the stereomicroscope. View samples under the microscope with a new freedom of movement and discover microscopic detail that has never been seen before with a stereomicroscope.

The first **Inverted Routine Microscope with an LED Light Source, The Leica DM IL LED** is the first inverted, routine microscope to combine superior Leica Microsystems optics with state-of-the-art LED illumination. The low-maintenance light source with no heat build-up, the long free working distance, and the system's high stability create ideal conditions for imaging live samples. The Leica DM IL LED and the Leica DM IL FLUO fluorescence version are exceptionally versatile and can be individually configured with a wide range of optics and accessories. The Leica DM IL LED is ideal for a wide variety of cell and tissue culture examinations in biology and medicine, studies in development biology, micromanipulation, and live cell experiments in transgenics or electrophysiology. The versatile Leica DM IL FLUO for fluorescence applications, such as GFP labeling, is also available with a choice of 50W or 100W HBO lamp housing or the Leica EL6000 fluorescence illumination system. This 120W metal halide/HBO lamp requires no centering, uses a fiber optic light guide to keep heat away from the microscope. Plus it lasts an average of 2000 hours. Details at www.leica-microsystems.com

JAI today introduced a new **0.3 megapixel industrial CCD camera** with a remote head lens and Power over Camera Link (PoCL) digital interface. The **CM-030PMCL-RH** is a new addition to the Compact tier of JAI's C3 Camera Suite. The remote head camera is based on the 1/3" Sony ICX424 monochrome progressive scan CCD, with 0.3 million pixels resolution (656 x 494 active pixels). The digital video is output via Mini-Camera Link with Power over Camera Link (PoCL) compatibility and 8- or 10-bit pixel depth, using the CL Base configuration. The small size of the camera head (17mm diameter) and its 2 meter remote head cable length make this camera suitable for space or weight critical machine vision applications, such as robotics, surface mounting (PCB pick and place), semiconductor inspection, surface inspection, and more.

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Quorum's angstrom™ system is a specialized epi-fluorescence illuminator designed for advanced microscope imaging techniques. Among the many applications for the device are structured illumination, deconvolution, photoactivation, FRAP and targeted illumination. Due to the high quality of illumination, the system produces images with high signal-to-noise ratio and exceptional resolution especially in the Z plane. The optics have been designed with great attention to detail including the use of apochromatic lens elements while most standard epi-illumination systems do little beyond ensuring that the excitation light meets basic Köhler requirements. The angstrom™, from Quorum Technologies, can easily be integrated into any new or existing microscope via a standard photoport to yield exceptional confocal quality images limited only by the quality of your objectives and camera. Contact: Seonaid Munro at seonaid@quorumtechnologies.com

Dolan-Jenner Industries introduces the **Fiber-Lite MI-30SG** Unit. Ideal for laboratory use, the Fiber-Lite 30 watt illumination system is one of several Fiber-Lite Illumination Systems that Dolan-Jenner produces. A sophisticated, yet affordable unit, the MI-30SG offers the price-conscious consumer many of the features found in the MI-150, with the added benefit of a rugged, convection-cooled enclosure which results in zero noise and vibration. The 30-watt, quartz halogen unit comes as a single gooseneck model and delivers over 10,000 foot candles of intense, cold illumination. The lamp has an average life of 200 hours, and the unit weighs just 7.25 pounds, making it portable and versatile. The MI-30 can be fitted with an optional filter holder, and color filters can be ordered as a complete set or individually. The MI-30 is available with input voltage ratings of 115v or 230v for global use, and all Fiber-Lite MI-30 illuminators come backed with a two year warranty. No adapters are required for MI Series accessories and easy lamp changes round out this hardworking illumination system. Contact: Quorum Technologies Inc. Tel: 519 824 0854.

Luxel Corporation announced the appointment of **Ted Pella, Inc.** as their exclusive distributor of patent-pending **LUXFilm™ TEM Specimen Supports**. Luxel is the preeminent supplier of nano-thin freestanding films since 1973. Featuring an extremely consistent polymer film from 30 – 50nm thick, LUXFilm™ Supports span large areas. 2mm is the largest TEM Support open aperture given the constraints of today's standard TEM grid holders, but on a custom frame even larger apertures are possible. These TEM Supports are available in several styles as well as varying degrees of surface energy. For more information, see www.Luxel.com and http://www.tedpella.com/grids_html/LUXFilm.htm

WITec, a manufacturer of high-resolution optical and Scanning Probe Microscopy solutions, has established the **WITec Academy** as a new forum for advanced instrument and software operation training. It offers a variety of basic and expert level courses covering the entire range of WITec products and potential applications. Experienced and new users can both benefit from a graded course structure with seminars and extensive hands-on training sessions. The full day courses are held frequently throughout the year in order to accommodate the attendees' schedules. Small group sizes for each course guarantee individual mentoring for the most thorough instruction. Participants in WITec Academy will receive training materials and a certificate of attendance. With the opening of WITec Academy, WITec provides another after sales service component for productive and innovative research in the fields of Confocal Raman Imaging and Scanning Probe Microscopy. More information on the courses and the schedule can be found at: <http://www.witec.de/en/witecacademy>.

NanoInk announces the release of the **NLP 2000**, a desktop instrument designed to provide cost-effective, rapid and reproducible nanoarrays. The NLP 2000 is a desktop nanofabrication system that is both simple to use and readily affordable. Patterns of nano- to micro-sized features may be created using a variety of materials from metal nanoparticles to biomolecules. Researchers are able to rapidly design and create custom engineered and functionalized surfaces using the proven technique of Dip Pen Nanolithography® (DPN®) to transfer nanoliter or smaller amounts over a large, environmentally controlled area. Operation of the NLP 2000 offers significant advances over current micro-arraying systems. To start, the system offers arrays of pens to write simultaneously over areas as large as 40mm x 40mm. The pens will deliver a spot size over a broad dynamic range of 50nm up to 10's of microns. Using NanoInk's Inkwell devices, multiple materials may be deposited in one step. The NLP 2000 will write onto a diverse range of substrates including Petri dishes, and coverslips. The use of a standard optical microscope slide makes the creation of the arrays easily portable to various standard detection systems. The large format and work area also permit the use of a variety of tissue culture plastic dishes. Designed to serve the increasing need for large area deposition of nanoarrays, this new DPN-based instrument is the first capable of fabrication of sub micron features over large areas. More details may be found by visiting www.nanoink.net.