

## INDUSTRY NEWS

**Navitar, Inc.** offers precision **high magnification zoom lenses** that are ideal for a variety of automated imaging and inspection applications. The Zoom 6000 lens series provides high magnification, high resolution images that are suitable for the most advanced image processing vision systems. The parfocal optical system of the Zoom 6000 has a 6.5:1 zoom ratio and total optical zoom range of 0.09X to 393X (based on adapters and attachments used). The long working distance can be varied from 34 mm (1.3") to 390 mm (15.4") and the achievable field of view can be varied from 0.01 mm to 125.68 mm. The Zoom 6000 can be used with C or F-mount cameras and is available in manual, motorized, or detented versions for calibrated repeatability. A variety of illumination options are available including differential interference contrast (DIC), simple polarization, and fluorescence illumination techniques. Amy Block, Navitar, Inc., 585-359-4000 ext 3298

**Agilent Technologies Inc.** announced that its new family of **high-performance thin-film beamsplitters** designed to provide precision beam control is now available. Agilent offers polarizing, non-polarizing and wavelength beamsplitters in multiple geometries to fit a wide variety of application requirements. The new Agilent beamsplitters address the need for highly accurate beam control in the aerospace/defense, vision systems, nanotechnology measurement, homeland security and biotech instrumentation markets. All Agilent beamsplitters offer near-distortionless beam splitting with the option for parallel or orthogonal output. They provide exceptional eighth-wave to tenth-wave TWD in both output beams. Agilent's displacement beamsplitters accurately split an input beam into two or more displaced output beams with industry-leading parallelism, accurate to 25 arcseconds. The company's cube beamsplitters are designed to accurately separate an input beam into two beams exiting at a 90-degree angle to each other. And, Agilent's plate beamsplitters offer compact size and low thermal mass with lower wavefront distortion and arcsecond wedge tolerance that ensures a precise 90-degree separation between the output beams. In addition, Agilent's polarization beamsplitters offer unique performance with a 1,000:1 contrast ratio in both transmitted and reflected beams. More information on Agilent optics is available at [www.agilent.com/find/optics](http://www.agilent.com/find/optics), or [POA-info@agilent.com](mailto:POA-info@agilent.com), or by calling +1 877 481 8497 (North America)

**Oxford Instruments NanoAnalysis America** is pleased to announce an **agreement with Kleindiek Nanotechnik** (Reutlingen Germany, [www.nanotechnik.com](http://www.nanotechnik.com)) to become the North Americans sales and service representative for Kleindiek micro- and nano-manipulation systems for electron microscopy and focused ion beam (FIB) applications. The combination of Kleindiek's versatile tools for manipulation and characterization of nano materials and Oxford Instruments' first class line of Energy dispersive X-ray spectroscopy (EDS), Wavelength dispersive X-ray spectroscopy (WDS) and (Electron Backscatter Diffraction) EBSD systems delivers a powerful range of accessories for any EM or FIB. Visit [www.oxford-instruments.com/nanoanalysis](http://www.oxford-instruments.com/nanoanalysis)

**Aspctrics, Inc.**, the innovator of Encoded Photometric Infrared (EP-IR) analyzers introduces **a new application note** demonstrating the ability of the company's patented EP-IR spectroscopy technology to record in detail all chemical information pertaining to an ultra-rapid chemical reaction. The results from this application revealed that EP-IR technology is capable of capturing reaction information over the entire spectral range at an ultra-fast rate of 10 milli-seconds, resolving phenomena such as energy combustion, water vapor and CO<sub>2</sub> overtone as short as 30 milli-seconds. The new application note allows users in the process industry to monitor their processes in real time and is available to download free-of-charge via [www.aspctrics.com](http://www.aspctrics.com) please call +1 925-931-9270, email [info@aspctrics.com](mailto:info@aspctrics.com) or alternatively, please visit [www.aspctrics.com](http://www.aspctrics.com)

**Thermo Fisher Scientific Inc.** announces the **acquisition of Cohesive Technologies Inc.**, a manufacturer of advanced sample extraction and high performance liquid chromatography products. TurboFlow™ technology enhances the existing Thermo Scientific liquid chromatography (LC) and mass spectrometry (MS) product portfolio by minimizing sample preparation in LC, especially for drug discovery, drug development and clinical research applications. The TurboFlow™ technology works by retaining small molecules, filtering out proteins and larger materials by diffusion, size exclusion and column chemistry. This enables users to directly inject biological samples into the LC-MS/MS system prior to analysis, a significant advantage in pre-clinical bioanalysis, where extensive sample preparation is too time-consuming due to the high sample loads. TurboFlow™ technology can be coupled with the Thermo Scientific TSQ Quantum™ triple quadrupole mass spectrometer combined with FAIMS (High-Field Asymmetric Ion Mobility Mass Spectrometry) to achieve a unique LC-MS/MS solution. When configured to the TSQ Quantum, the system delivers fast and efficient quantitative results with the lowest ion suppression and chemical noise, resulting in highly sensitive bioanalytical methods, development of more robust methods, and reduction in analysis failures. For more information about TurboFlow™ technology visit [www.thermo.com/cohesive](http://www.thermo.com/cohesive) and for more information about the Thermo Scientific LC and MS product portfolio, please visit [www.thermo.com/ms](http://www.thermo.com/ms) Alternatively, please call +1 800-532-4752 or e-mail [analyze@thermofisher.com](mailto:analyze@thermofisher.com)

**Andor Technology** today announce the launch of the **iKon-M CCD camera range**, designed to deliver the ultimate in high QE, low noise performance, ideal for demanding light-starved imaging applications. The deep cooled iKon-M platform offers Multi-Megahertz readout for rapid frame rates acquisition or fast focusing, direct USB 2.0 connectivity to PC, and an integrated C-mount shutter (adaptors to other mounts are readily available). A variety of sensor formats are selectable, including both full frame and frame transfer readout.

The Andor **iDus InGaAs detector array** system offers a host of benefits including peak QE of >80% with low noise, thermo-electric cooling to -85°C for optimal S/N performance and simple USB 2.0 connectivity. With a guaranteed hermetic vacuum seal and exclusive maintenance free design, Andor's proprietary UltraVac™ process optimizes sensor performance (through higher QE and lower dark current) and ensures that this performance is retained year after year. Contact Emma McClintock Tel: +44 28 9023 7126 or visit [www.andor.com](http://www.andor.com)

**10years WITec - A Decade of Innovation in Nanoscale Imaging** This year the microscope manufacturer WITec celebrates its 10th anniversary. "A Decade of Innovation in Nanoscale Imaging" describes the extremely successful development of the company. Founded as a spin-off from the University of Ulm, WITec has become an established and global player in high-tech instrumentation. As a specialist in high-resolution microscopy, the company benefits from the exponential growth of the Nanotechnology, Materials Research and Life Sciences markets. Harald Fischer, [harald.fischer@witec.de](mailto:harald.fischer@witec.de)

**TOFRA, Inc.** has released the **Filter Wheel with Integrated Controller for Optical Microscopes**. This innovative cost-saving design requires less desk space and reduces cable clutter. The filter wheel provides fast computer-controlled or manual switching of filters. It can accommodate either 12 filters, 25mm in diameter, or 10 filters, 32mm in diameter. An infra-red blocking filter can be installed on the side facing the light source. The filter wheel is used for changing filters in the excitation or emission light path of the microscope. On some microscopes it can be mounted in the transillumination light path. Mounting adapters are provided for all major microscope brands. The wheel can be mounted facing front or back. For more information contact Ilya Ravkin at [iravkin@tofrainc.com](mailto:iravkin@tofrainc.com), by phone 650-494-7772.

## INDUSTRY NEWS

**The McCrone Group, Inc.**, announces the **opening of its new state-of-the-art analytical facility** in Westmont, Illinois. The McCrone Group custom designed and completed the construction of a 40,000 square-foot addition to their existing 26,000 square-foot building, which has served as the Group's headquarters since 1987. The newly completed 66,700 square-foot facility is home to The McCrone Group; McCrone Associates, Inc. (analytical services), McCrone Microscopes & Accessories (instrument sales) and the College of Microscopy (microscopy education and learning). With this new addition, the College of Microscopy has the largest array of advanced modern microscopy instrumentation within any single educational facility in the United States. McCrone's scientists are actively engaged on a day-to-day basis in solving some of the most difficult materials analysis problems, including manufacturing failures, raw materials, trace evidence, electronic components, and pharmaceutical/biotechnology developments. Charles A. Zona was named as the first Dean of the new state-of-the-art College of Microscopy and Learning Center. For further information about The McCrone Group, please visit [www.mccrone.com](http://www.mccrone.com)

**Carl Zeiss MicroImaging GmbH** introduces **version 4.6 of the Axio-Vision software** for digital microscopy in biomedicine and materials applications. The software, which also supports the Axio Observer microscopes with incubation modules launched by ZEISS in October 2006, features new functions and improved convenience for the recording, archiving, processing, analysis and reconstruction of images. Carl Zeiss now offers the following modules: Topography, Online Measurement, Physiology, and Digital High Speed Recorder. In addition to the new modules, many existing features have been improved, including a new wavelet algorithm to calculate extended depth of focus images at high quality. Furthermore, it is possible to compensate automatically for the lateral displacement of Z-stack images taken with stereomicroscopes. Functions for the evaluating data and thus enabling the generation of statistics and histograms have also been added to the software package. So far, external evaluation programs (e.g. Microsoft Excel™) had to be used for this purpose. A new mode of "Inside 4D" allows the simultaneous display of transparency and surface render methods. The section plane mode enables the shaded display of section planes so that the user can „look into“ 3D structures. The distances between objects can be measured three-dimensionally.

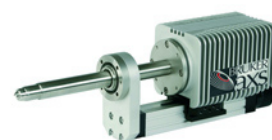
Carl Zeiss MicroImaging GmbH has **now incorporated numerous enhancements in the AxioVision FRET software** (Fluorescence Resonance Energy Transfer). It combines all current methods of FRET measurement by using different correction techniques or acceptor bleaches. This makes it possible to also determine the FRET portion in FRET-coded color images. In addition, the evaluation can already be performed online during the capture of time series images. The FRET method allows the determination of the energy transfer portion between two closely adjacent protein molecules or the measurement of the distance between two closely adjacent protein molecules below the microscope resolution. It is used to determine quantitative temporal and spatial information about the bonding and interaction between proteins, lipids, enzymes, DNS and RNS. The software enhancements will be quickly appreciated by users – primarily cell and developmental biologists – in their daily work. For example, AxioVision FRET 4.6 facilitates the selection of the optimal method for the respective examinations. This means that the often very time-consuming programming of the work routines and computations is now a thing of the past. In addition, the measuring regions can now be exactly positioned at the sites of the FRET action; in the past, this was only possible with approximate exactness in the gray scale images. Another new feature is the possibility of observing the FRET activity during the experiment being performed. Contact in the US: Karin Salerno, Phone: (914) 681-7627, Email: [ksalerno@zeiss.com](mailto:ksalerno@zeiss.com).

**Ladd Research** announces a new series of **True-to-Power™ laboratory microwave tissue processors**. Laboratory microwave tissue processors have a level of power control superior to that of microwave ovens, which adjust power by cycling the power on and off at full strength. Although the timing varies from oven models, half power generally means the microwave is on full power for six seconds and then off for six seconds. This can cause overheated and damaged tissue samples. With the Ladd laboratory microwaves the user can set the power without the damaging high power cycles. In fact, the minimum power setting is at 20 watts or about 2% of maximum power with an infinite number of settings. Ladd has a complete line of economical laboratory microwaves from low cost entry models to sophisticated systems, which allow the researcher or technician to perform other tasks while tissues are being processed. For further information contact Ladd at 1-800-451-3406 or by e-mail at [sales@laddresearch.com](mailto:sales@laddresearch.com)

**NanoAndMore USA**, a distributor of nanotechnology products including atomic force microscope (AFM) probes, announced that it has been named as the exclusive **Master Distributor for the US by NanoSight**, the British manufacturer of particle size analyzers. These nano-particle size analyzers do what PCS and other light scattering methods do but they go one step further. They track every particle and report on the total distribution of particle sizes by count and percentage. PCS is extremely fast but it only "sees" the predominant particle size in a solution. The NanoSight LM-10 and LM-20 not only report on the predominant particle size but also on any other particles present in the solution. The instruments use Brownian motion to track the speed and distance each particle moves during a fixed period of time and can then very accurately graph the total distribution of particles from around 15nm to nearly 1µm. This may not replace PCS but it will certainly sit beside it as a second method of analysis. Call 843-521-1108 for more information.

**ACS launches Web site for biotechnology, chemistry, biology networking Attention biotechnology professionals:** there is a new, free, social and professional networking site, courtesy of the American Chemical Society. Persons involved in biotechnology or interested in bio-based materials can go to [www.biotechexchange.org](http://www.biotechexchange.org) to take advantage of this new cyberspace networking site.

**Bruker AXS Inc.** will be presenting its **new liquid nitrogen-free XFlash® 4030 Silicon Drift Detector (SDD)** at this year's Pittcon, the annual conference and exposition of the laboratory science industry. The XFlash 4030 follows the success of Bruker AXS's fourth generation **XFlash 4010** detector and the **XFlash QUAD 4040**, which won a 2006 R&D 100 award. The XFlash 4030 detector has a large active detecting area of 30 mm<sup>2</sup> and can achieve an energy resolution of 133 eV (Mn K) at 100,000 counts per second (cps). In addition, the detector's finger, which is no wider than the finger of the 10 mm<sup>2</sup> XFlash detector 4010, can be positioned very close to the sample. Like Bruker AXS' other XFlash SDDs, the 4030 offers a maximum input count rate capability of 1,000,000 cps. When compared to a 10 mm<sup>2</sup> detector, the detector's 30 mm<sup>2</sup> active area results in a threefold increase of count rate detection capability at the same beam current.



Need even higher count rates? Consider multiple detectors. When you need to collect data more quickly, your choices have typically been to go to a larger crystal size (at the expense of resolution), or to purchase an array - like our **XFlash QUAD**. Working with researchers at NIST, we've developed another solution - multiple detectors, running independently, with data summed at the analysis station. To arrange a demonstration or to learn more about the complete line of X-ray Microanalysis systems and detectors offered by Bruker AXS, please visit our website at [www.bruker-axs-ma.com](http://www.bruker-axs-ma.com), or call us at (609) 771-4400.



## INDUSTRY NEWS

**NANOSENSORS™** has launched a new series of **silicon probes for Magnetic Force Microscopy (MFM)**. For visualisation of magnetic domains by scanning probe microscopy, different magnetic force microscopy probes are necessary. NANOSENSORS™ Silicon MFM Probes are based on the well-known PointProbe® Plus AFM probe. The probes are optimized in view of high sensitivity and enable Tapping Mode, Non-contact and lift mode operation in air. The NANOSENSORS™ Silicon MFM Probe Series offers six different types of MFM Probes. The standard probes for Magnetic Force Microscopy feature a hard magnetic coating for high magnetic contrast and high lateral resolution. The low momentum Magnetic Force Microscopy probes are designed for reduced disturbance of the magnetic sample by the tip and for enhanced lateral resolution. The newly introduced low coercivity Magnetic Force Microscopy probes are coated with a soft magnetic thin film enabling the measurement of magnetic domains within soft magnetic samples. For high resolution magnetic imaging the well-known NANOSENSORS™ SuperSharpSilicon™ tip is used as a basis and is combined with a very thin hard magnetic coating. This results in an extremely small tip radius and a high aspect ratio on the last few hundred nanometers of the tip apex – the essential requirements for high lateral resolution down to 20 nm in ambient conditions. Additionally two types of Magnetic Force Microscopy that are dedicated for the use in ultra high vacuum have been developed. Customized solutions for special needs are available upon request. NANOSENSORS™, Phone: +41-(0)32-720-5085

**El-Mul's Elion™ Dual Detection Platform** has been chosen by a leading FIB/SEM instrument manufacturer for integration into its line of advanced nanotechnology tools in 2007. With unsurpassed secondary ion imaging quality at much lower currents, the Elion greatly reduces sample damage, so the ion beam can now be used to perform routine sample imaging for high resolution and material contrast applications. Elion's design also significantly improves SE detection over current chamber devices, and provides longer detector operating lifetimes at peak performance. For more information, contact: Noa Even-Tal, central@el-mul.com www.el-mul.com

High Spatial Resolution for Precise Defect Location through Multiple Layers from **JEOL**. The high spatial resolution and flexibility of the **JEOL Beam Tracer** allows this new failure analysis tool to precisely locate and mark defect sites in multi-layer semiconductor devices. The Beam Tracer images marginal and failed interconnects and junctions through several complex layers. It allows measurement of individual transistors, performs electrical characterization, and includes a patented Voltage Distribution



Contrast method for devices produced under the 65nm design rule. A precision probing system based on SEM technology, the Beam Tracer incorporates four mechanical probes that can be moved in increments of less than 1nm. The probes detect electron beam absorption current to evaluate electrical characteristics in ICs and identify abnormal resistance in interconnects and contacts. Using the patented Voltage Distribution Contrast (VDIC) method, the Beam Tracer detects a wide range of multiple marginal failures without repositioning the probes. This flexible tool can detect resistive areas from 100 ohms to infinity. An e-beam assisted marking tool makes it easy to rapidly locate defects for further analysis using a FIB for TEM analysis. JEOL will introduce the Beam Tracer at Semicon West, July 17-19, 2007, in San Francisco. Visit JEOL at booth #1105 at the Moscone Center.

**Omega Optical** recently introduced **fifteen new filter sets** for the rapidly growing library of fluorescent proteins and applications. This makes Omega's product line for fluorescent proteins the largest in the world. New filter set solutions are now available for Invitrogen's Vivid Colors, Clontech's Living Colors, and MBL's Coral Hues as well as the fluorescent proteins developed in the lab of Dr. Roger Tsien at University of California San

Diego. Fluorescent proteins (FP) are increasingly popular because of their usefulness in live cell imaging applications. Because live cell experiments are typically light starved, optimized filter sets must deliver high signal-to-noise. All of Omega's FP filter sets are manufactured using proprietary ALPHA technology, which produces extremely steep slopes and accurate band placement, for maximizing excitation and emission energy and for minimizing background. For more information about fluorescent protein filter sets, email salesfp@omegafilters.com

**Lightspeed Technologies** has **expanded the HPLS series of interchangeable High Intensity LEDs** to include analog and digital modes in addition to HPLS systems with continuously variable output by manual adjustment. Configurations include optics for applications in fluorescence imaging, microscope imaging, high speed imaging, photosynthesis research, solar cell testing, detector testing, and other applications that can use continuous, variable, or digitally controlled narrow bandwidth visible or broadband white light. In the analog mode, the optical output follows the input signal (sine, saw, or any other) with a user-selectable format (0-5V, 0-10V, 0-20mA, 4-20mA), full optical power as much as 400mW and the speed of 500kHz. Short-pulsed, externally triggered digital mode (TTL/CMOS input) provides short rise and fall times (<150ns) and increased up to eight times peak optical power. Pulses can be implemented to <120ns. Dual trigger allows simultaneous analog and digital control of the HPLS where short pulsed applications require a biased optical background of matching geometry. Contact: Randall Wilcox (408)761-0062 www.lightspeed-tech.com.

**XEI Scientific and Zyvx Corporation** have **settled their Patent dispute** over the Evactron (R) patents. XEI Scientific and Ronald Vane have licensed the patents to Zyvx for use with the Zyvx Optimizer (TM) Decontaminator. Zyvx will sell the Optimizer only with Zyvx nanoprobbers. XEI will supply a new model Evactron De-Contaminator to Zyvx when ready to replace the Optimizer. The settlement allows both companies to do what they do best and to work together again.

**Hyphenated Systems** announced a **joint development program (JDP) with the University of California, Santa Barbara (UCSB)**. Under the agreement, Hyphenated Systems will make available one of its 3D MAP(tm) (Microfluidics Analysis Platform) tools to Professor Meinhart's research group at the Microfluidics Laboratory for use in investigating the fundamental relationships between structure and flow in microfluidic devices. 3D MAP uses advanced confocal microscopy to visualize and measure 3D structure and flow with sub-micrometer resolution. The system is unique in its ability to provide fast, accurate, structural characterization of all aspects of microfluidic devices including steep slopes, rough surfaces, and subsurface features in transparent media that are difficult or impossible to measure with alternative techniques. For more information, please visit www.hyphenated-systems.com.

**FEI Company** released a powerful analytical **DualBeam(tm) instrument for advanced 3D research and development, the Quanta(tm) 3D FEG**. Combining FEI's latest advances in ion and electron optics and the unique environmental SEM technology of FEI's Quanta family of products, the new system eliminates the boundaries imposed by traditional high vacuum systems. The Quanta 3D FEG expands FEI's range of DualBeam solutions for NanoResearch and Industry, NanoBiology and NanoElectronics. The advances incorporated in the Quanta 3D FEG provide users with new levels of versatility and flexibility. The system features FEI's high current ion column for rapid, site-specific cross-sections of samples to reveal subsurface structures and features while the system's advanced electron source design delivers improved SEM imaging. Further, increased electron beam current enables higher throughput spectroscopy. More information can be found online at: www.fei.com <http://www.fei.com/> .



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**Registration Deadline: April 30, 2007 • Enrollment Limit: 15**

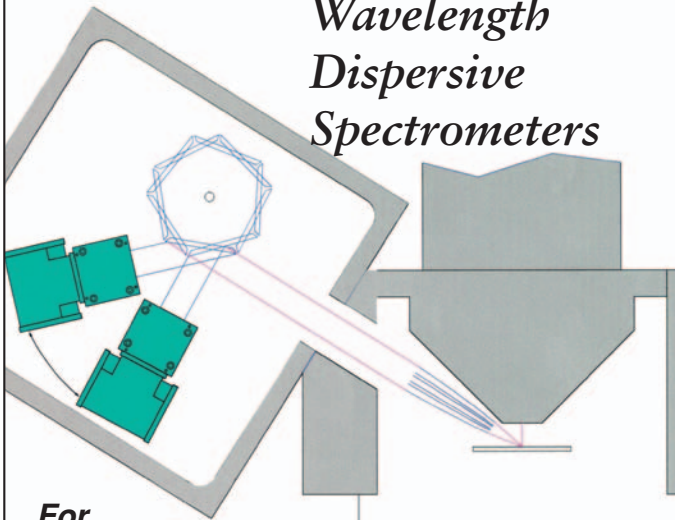
For further information and an application form, visit our website:

[www.emc.missouri.edu/works.htm](http://www.emc.missouri.edu/works.htm)

or contact: Lou Ross, Email: [rosslm@missouri.edu](mailto:rosslm@missouri.edu),  
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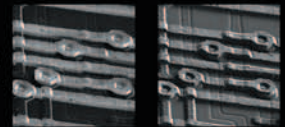
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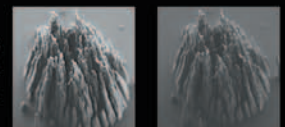
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