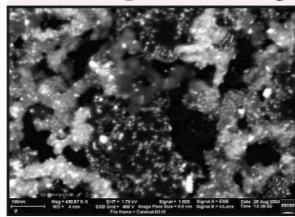


## NEW AT M & M 2005

mixing of signals offers extensive imaging capabilities. The EsB detector comprises a filtering grid which enables ultra high resolution imaging revealing previously unseen images details. Benefits of the ULTRA CDS FESEM: All direct detection systems without conversion plates; Ultra high resolution SE/BSE imaging at ultra low



kV; High efficiency EsB/AsB detectors for nano scale compositional contrast; Ultra high resolution on magnetic materials with low working distance; No adjustments needed when changing from low to high kV; Working distance as low as 1mm; Suppresses charging effects on non-conducting materials; Ultra stable current mode for X-ray analysis; GEMINI® STEM imaging system for sub-nanometer resolution. The attached image is an example of the imaging capabilities of the ULTRA CDS: The EsB micrograph taken at 1.7 kV clearly shows 5 nm particles on a catalytic membrane which contains 5 different polymers.

## INDUSTRY NEWS

**Eastman Kodak Company's Molecular Imaging Systems Group** announces the availability of **KODAK Molecular Imaging Software, version 4.0 (MI 4.0)** for acquisition, quantitative analysis, manipulation, and databasing of scientific images. KODAK MI 4.0 software's enhanced Region of Interest definition and analysis tools include a Magic Wand tool, Peak Finder algorithm, ROI Mass Standards, and the ability to define and analyze multiple ROI sets on a single image. A new Multiple Lane Set feature facilitates analysis of high capacity gel formats. New image comparison tools include Differential Display for lane to lane comparison within an image, and Gel Comparison for band pattern similarity/differences between images. New Feature Masking and Image Overlay simplify simultaneous display of multiplexed features of interest. A new Image Database allows archival of image projects and convenient search and retrieval capability using a variety of project attributes including key words, user, time and date, standards, and more. An all-new navigational structure features workflow driven tool palettes for improved ease of use. Each palette contains the toolbars and commands specific to an area of workflow, such as Image, Lanes, Manual ROIs, Auto ROIs, Grid ROIs, Annotations, and Database. For additional information, <http://www.kodak.com/go/molecular>, or call 1-877-747-HELP, option 7.

**Carl Zeiss** is pleased to introduce **SteREO Discovery.V12**. This **stereomicroscope** represents a totally new instrument concept in stereomicroscopy with many unique features designed for convenience, ease of use and unparalleled stability and image quality. Considerably more image information is obtained through new optical design that offers high-contrast images with excellent color reproduction, depth of field, high resolution and unparalleled 3D brilliance. SyCoP (System Control Panel) is an entirely new concept in stereomicroscopy. Designed as a computer mouse it combines all of the major control functions of the stereomicroscope, such as zoom, focus, contrast and illumination. It also supplies current data on object field, resolution and depth of focus. For the first time, it is possible to operate the microscope intuitively, fast and error-free without any need for the users to lift their eyes from the microscope. Calling up complex instrument settings at the push of a button saves time and provides additional

## INDUSTRY NEWS

safety. The new stand design allows focusing in steps of up to 350 nm over a wide range of 340 nm. It ensures highest precision and stability. Furthermore, a scratchproof stage plate (250 mm x 410 mm) provides ample space in the object area. In addition, SteREO Discovery.V12 offers a new LED illumination and contrasting systems, Ergo-phototube, specimen protection, 3-position nosepiece, and a light and focus speed manager. These are only a few of the many innovative solutions of this new stereomicroscope for the materials sciences. The AxioVision 4.3 software turns the SteREO Discovery.V12 into a complete imaging system with integrated microscope control, image recording, processing, analysis, management and archiving.



**Carl Zeiss MicroImaging** is pleased to introduce a new **Axio Imager upright microscope system** for materials applications with a new illumination system that markedly improves image quality in all contrasting techniques – brightfield, darkfield or C-DIC – and provides optimum information. Axio Imager comes in 4 different stand configurations tailored to specific applications in industry such as metallography, materials research, and quality assurance. Modular design is one of the outstanding benefits of the system which can be upgraded as your requirements grow from an analog to a motorized version, up to the digital system with Z-focus. Every Axio Imager microscope is equipped with the new reflected-light illumination. A core element in the stand, called stable cell, ensures optimum stability as well as ideal measuring and image results. High sample throughput in serial tests and high repeat accuracy of measurements are assured through the motorization of all stand functions. The line of EC Epiplan-Apochromat objectives meets the highest demands and provides optimum results in routine and research materials microscopy.

Carl Zeiss is pleased to introduce the new **AxioCam HS high speed digital camera** designed for high-speed imaging of living cells. AxioCam HS records image sequences at more than 50 images per second in the basic resolution mode (660 x 494 pixels) and up to 140 images per second in the 5x5 binning mode. This allows highly precise, time sensitive examinations of fast processes in living objects in neurobiology, developmental biology, virology and zoology. AxioCam HS has been optimized for extremely fast reading of high-resolution image information: 660 x 494 pixels with up to 60 images and up to 200 images in the 5x5 binning mode. With short exposure times, the high rate of image sequence is guaranteed because exposure and sensor reading processes can overlap. Special application software enables direct storage of the image data on the hard drive in complete 12-bit quality without any loss from compression, avoiding compression artifacts. This means that the maximum recording time would only be limited by the hard drive capacity. With appropriately equipped systems, the AxioCam HS can record image sequences as digital films ("movies") in scientific image quality. Further technical accessories for fast recording of multidimensional images are in development. For more information on any of these products contact Carl Zeiss MicroImaging, Inc., Thornwood, NY 10594, 800-233-2343, [www.zeiss.com/micro](http://www.zeiss.com/micro), or email at [micro@zeiss.com](mailto:micro@zeiss.com)

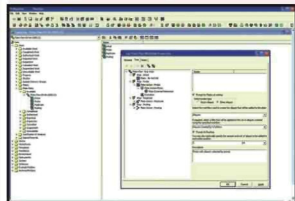
In a move that could revolutionize the way we view the world, **ALIS Corporation** today announced that it is developing a next-generation microscopy tool that may be able to see things never before

## INDUSTRY NEWS

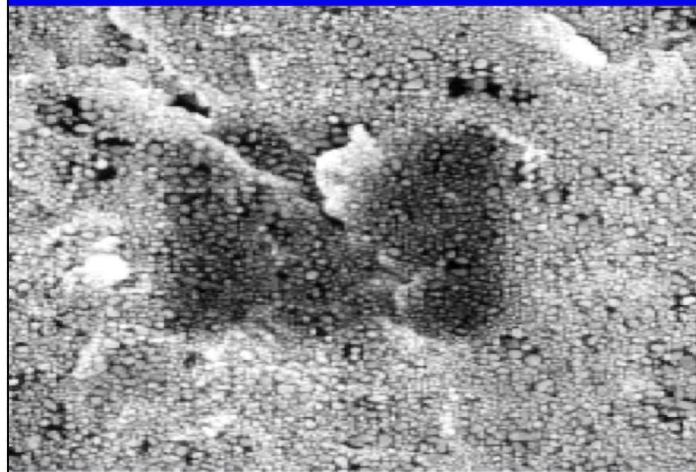
visible. "Our disruptive technology enables an entirely new generation of high resolution imaging and measurement systems," said Bill Ward, president of ALIS Corporation. "Our scanning ion microscope uses a beam of helium ions as the imaging particles. Since ions can be focused into a smaller probe size and have less sample interaction, we can generate higher resolution images with more material contrast so more detail can be seen. We expect to be able to see things much smaller than we've ever been able to see with even the most sophisticated scanning electron microscope (SEM). Magnification over one million times is expected." The **scanning helium ion microscope** technology has been under development for over ten years, but recently ALIS scientists achieved a breakthrough that makes commercial use practical. ALIS Corporation is developing a user interface that is much like that of an electron microscope, which means that it will be easy to operate the system. Also, this microscope technology promises to have nearly the same resolution as the transmission electron microscope (TEM) without the tedious sample preparation that is now needed. Initially, the company will be focusing on the microscopy needs of the semiconductor industry, with a tool specifically designed to meet the needs of failure analysis engineers and scientists. Future systems are expected to address applications like critical dimension measurement, defect review, and defect inspection. In addition, the company is already eyeing applications in the life sciences and material sciences fields for this remarkable new microscope where its revolutionary vision technology may help to break the nanotechnology barrier and answer some of mankind's greatest unanswered questions. Additional information about ALIS Corporation and its unique helium ion technology is available on the company's website at [www.aliscorporation.com](http://www.aliscorporation.com).

**sensicam em** announces a **new generation of electron multiplication CCD (emCCD) sensors** integrated into a sensicam camera system. With this on-chip multiplication of the light signal, the readout noise of the camera can be neglected ( $<1 e^- \text{ rms @ gain } >50$ ). With its excellent resolution of  $1004 \times 1002$  pixels, this high-performance, cooled digital 12 bit CCD camera system is best suited for extreme low light camera applications. The system features thermo-electrical cooling of the image sensor (down to  $-45^\circ\text{C}$  vs. ambient) and an outstanding quantum efficiency (up to 65%), which achieves a high spectral sensitivity in general and especially in the NIR. Exposure time modes (software selectable) range from  $75 \mu\text{s}$  - 1 h. A high speed serial data link connects the system to the PC. This low light camera system is very well suited for scientific imaging (e.g. microscopy, bio marker and label imaging) and for night vision. Contact: Murad Karmali, The Cooke Corporation, tel 248 276 8820, [www.cookecorp.com](http://www.cookecorp.com)

**Thermo Electron Corporation** announces **version 7.0 of Nautilus LIMS**. Nautilus is Thermo's dedicated laboratory information management system (LIMS) for early stage discovery in biotechnology research and discovery. Nautilus' new archiving functionality allows users to automatically transfer data from active tables to archived tables and back again, using interactive and background tools. Multiple archives can be created in Nautilus, so all data related to a specific experiment or study can be collected in - and more easily retrieved from - a designated archive. Plate Plans in Nautilus are used to automate activities carried out on single or groups of plates. Users can monitor the progress of experiments, group and organize plates, ex-



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## INDUSTRY NEWS

ecute actions and add workflows to be carried out on the plates within the plan. In addition, image results are now supported in Nautilus, which enables image files to be stored in the database as results and visualized within the application using the Result Browser. Essential to high throughput laboratories, visualization speeds interpretation and analysis of results. For more information on Thermo's Atlas CDS, please visit [www.thermo.com/cds](http://www.thermo.com/cds). Alternatively, please call +1 866-463-6522 or e-mail [marketing.informatics@thermo.com](mailto:marketing.informatics@thermo.com).

**Media Cybernetics Inc.**, today announced the **launch of its new website at [www.mediacy.com](http://www.mediacy.com)**. The new website offers streamlined navigation and useful image analysis information. The new website complements Media Cybernetics' ongoing efforts to provide valuable imaging services to customers around the world. State-of-the-art navigation tools were incorporated such that users can easily locate information about software products and imaging solutions. The Solutions section focuses on the users of Media Cybernetics software products and their applications. It features whitepapers, application notes, product notes, and customer stories from a wide range of industries.

**Andor Technology** has launched a **new range of laser spinning disk, live cell confocal microscopy solutions** through its BioImaging Division. The Andor Revolution range provides a framework which combines Andor's award winning iXon EMCCD camera with the renowned Yokogawa CSU 10 and 22 units "inside". In addition, it offers all parts of the solution including lasers, microscopes and accessories, all seamlessly integrated and driven by Andor iQ imaging software. The range has been launched with Andor Revolution 488, a cost-effective entry point for personal confocal users. Using a single-line 488nm laser line, either from an Argon or Diode Pumped Solid State (DPSS) source, this confocal solution is ideal for highly rapid, highly sensitive fluorescence 3/4D imaging of GFP and Fluor dyes. The Fluor family of indicators used to monitor rapid changes to intra-cellular calcium ion (Ca<sup>2+</sup>) concentrations. Revolution offers fast confocal frame rates (up to 1000 sec<sup>-1</sup>) with perfect synchronization and ultimate sensitivity. It benefits from significantly reduced photo bleaching of fluorophores, reduced phototoxicity of living cells, lower dye concentrations enabling reduced Ca<sup>2+</sup> buffering and GFP detection down to single molecule levels. For further information contact: Emma McClintock, [e.mcclintock@andor.com](mailto:e.mcclintock@andor.com)

**FEI** today announced that it **has begun shipping its new scanning/ transmission electron microscope (S/TEM), the Titan(TM) 80-300** as it publicly unveiled the new system at the Microscopy and Microanalysis 2005 Conference in Honolulu. The first shipments of the Titan 80-300 S/TEM will begin in the current fiscal quarter. Among the first customers in line for delivery include The Center for Accelerated Maturation of Materials at Ohio State University (USA), the Department of Inorganic Chemistry and Catalysis of the Fritz-Haber Institute (Germany), Samsung Advanced Institute of Technology (Korea), and Instituto Mexicano del Petroleo/IMP (Mexico). Titan's dedicated platform for corrector and monochromator technologies and their applications is designed for a high degree of automation and provides ultimate stability, performance and flexibility. The microscope transfers information deep into sub-Angstrom resolution making way for the highest performance available in both transmission electron microscopy (TEM) and scanning transmission electron microscopy (STEM) modes. The Titan's upgradeable design not only enables larger nanotechnology and national research centers to afford dedicated aberration corrected TEM technology, it opens

the door to universities and companies with staged funds to position themselves for the future. Currently, most ultra-high resolution microscopy is performed at resolutions between one and two Angstroms. However, below one Angstrom materials exhibit different properties and behaviors. Equipped with the sub-Angstrom imaging of the Titan, scientists will have a greatly enhanced ability to observe and characterize materials. FEI's shipment of the Titan S/TEM marks a significant milestone in its leadership of providing the world's most powerful tools for nanotechnology. In a November 2004 news release, FEI announced that it was selected as the R&D partner for a program aimed at building the highest resolution scanning transmission electron microscope (S/TEM) in the world. The program is headed by several regional USA laboratories that combined to form the TEAM project. This multi-year microscopy development project calls for a new microscope, based on the Titan platform, that should enable extraordinary new scientific opportunities for direct observation aimed at enabling analysis of individual nanostructures at an unprecedented resolution of 0.5 Angstrom -- approximately one-third the size of a carbon atom.

**FEI** released **new software and hardware for its market-leading Tecnai(TM) G2 transmission electron microscope (TEM)** at Microscopy and Microanalysis 2005 Conference today in Honolulu. The new software (Tecnai 3.0) delivers enhanced ease of operation of the Tecnai TEM and ensures full benefit of the system's leading-edge performance. The new hardware features an innovative computer-based technology, **Inspect3D Xpress**, for unprecedented speed with 3D image reconstruction. The new Tecnai 3.0 operating software takes full digital control of the microscope and all detectors to the next level. Running under WindowsXP, the new software enhances overall system stability and performance, further boosting the Tecnai's ease of operation and decreased time to highest quality data. It includes a new version of TEM Imaging and Analysis software (TIA) with enhanced image and data processing functionality. The software now supports and embeds a wider scope of third-party CCD cameras. The new Inspect3D Xpress is an all-new tomography reconstruction package that dramatically speeds quality realignment and 3D reconstruction techniques. This revolutionary product utilizes the latest computer technology to enhance image reconstruction speeds by a factor of 100x, achieving an industry milestone in high resolution 3D imaging. CONTACT: Dan Zenka, APR, Director, Worldwide Public Relations for FEI Company/Corporate Headquarters, +1-503-726-2695, or [dzenka@feico.com](mailto:dzenka@feico.com) / , Web site: <http://www.feicompany.com/>

The **Leica DM3000** automates objective changing for pathological screening. As the latest addition to Leica's **DM Clinical Microscope Series, the DM3000** utilizes the same ergonomic design principles; users assume a natural, relaxed posture while working with the microscope. All operating controls of the microscope are well-positioned to ensure minimal strain on the hands, shoulders, and back, even after hours of extended microscope use. The Leica DM3000's automated features increase work efficiency and saves time. For example, objectives can be changed in only half a second at the touch of a button. When using 10x or lower magnification objectives, the condenser head automatically swings out and returns into position for higher magnifications. The microscope also automatically restores the user's preferred light intensity for each objective whenever the magnification is changed. The brightness remains constant for the user, which prevents eyestrain from strong changes in light intensity. The DM3000 also

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features a modern USB2 port for data communication with computers for image processing and other applications. Leica Microsystems Inc. expands its line of digital inverted research microscopes with the new **DMI3000 B and DMI4000 B**, which join the well-received DMI6000 B launched at ASCB in 2004. The three models provide solutions ranging from simple micromanipulation to advanced live cell fluorescence imaging. The fully manual Leica DMI3000 B is an affordable platform specifically tailored for micromanipulation. The DMI4000 B provides a flexible and modular platform for adding automation based on experimental needs. Even manually operated components are encoded so that the microscope can guide the user to proper operation. For more information contact: Molly Lundberg, 847/405-0123

**Buehler, Ltd.** proudly introduces the new **Delta® Manual Abrasive Cutter!** This abrasive cutting tool provides industrial strength with simple and reliable operation. The Delta® Manual Abrasive Cutter features a large, 14" (350mm), blade capacity, heavy-duty 10 H.P. motor, and electronic motor brake. The manual cutting lever



allows the operator to "feel" the cutting action and adjust the blade feed rate, permitting quicker cutting of softer materials and burn-free cutting of hard materials. The floor stand is sturdily constructed with steel cabinetry and a fiberglass hood. The recirculating coolant system provides quality cuts with minimal sample damage. Designed for safety and practicality, this cutter offers a protective fiberglass hood with clear viewing window, retractable steel blade guard, three-button control panel with large emergency stop, and safety latching mechanisms to keep the hood closed

during operation. It combines the durability required for continuous production use, with the versatility needed for a laboratory environment. Backed by the Buehler standard 2-year warranty and CE marked. For more information, contact Buehler, Ltd., (ph)847-295-6500 .

**McCrone Associates, Inc.** announces the launch of a new online resource for microscopists and material scientists, the **McCrone Atlas of Microscopic Particles** at [www.mccroneatlas.com](http://www.mccroneatlas.com). The new Atlas currently offers characterizations and identifications of over 80 particles with plans to continually add new characterizations on a monthly basis.



The particle characterizations include images, interpretations and observations, and data from PLM, SEM, EDS, FTIR, RAMAN, and TEM analyses performed at McCrone Associates' state-of-the-art Westmont, Illinois facility. Locating materials of interest on the site is easy and intuitive using the advanced search tool. But, the real utility of the site is realized once you find a particle

of interest. Each particle is presented within the "characterization viewer", a robust tool that utilizes a tab system to organize and make browsing through the different analytical results a simple task. Check it out today at [www.mccroneatlas.com](http://www.mccroneatlas.com)!



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