

Angstrom Scientific, Inc., a representative for nanoscale level measurement and control manufacturers, **announces an agreement with Kleindiek Nanotechnik GmbH to become the sales and service representative for Kleindiek's micro- and nano-manipulation systems** for electron microscopy and focused ion beam (FIB) applications in the USA. For more information contact: Bob Sommerville, 845-915-3138 (office), or see www.angstrom.us

El-Mul receives the Frost & Sullivan Innovation Award for Its Carbon Nanotube Electron Sources. The 2008 Frost & Sullivan Award spotlights El-Mul's cold field emission source devices for SEM, TEM and FIB instruments used in analytical labs and semiconductor manufacturing. El-Mul is testing a prototype device, expected to result in a paradigm shift for the industrial manufacture of electron sources. For more information, contact: Bob Rosenbaum, El-Mul Technologies, Ltd., Phone: +972 8-943-4184, bob.rosenbaum@el-mul.com

The **Axio CSM 700 confocal microscope from Carl Zeiss** meets users' demands for rapid and robust non-contact measurement of 3D microstructures and determination of surface roughness. Ideal for materials research, quality inspection and routine applications, the Axio CSM 700 displays surfaces three-dimensionally in high resolution and in true colour even on relatively "soft" surfaces. The high-quality ZEISS optics allow topographical measurements to be performed at up to 117 frames per second. Step heights from approx. 20 nm up to the millimetre range are detected at a depth of focus previously only possible with the scanning electron microscope. These attributes will be useful in the examination of many materials, including LCD panels, semiconductors, colour filters, glass, polymers and metals.

Carl Zeiss' **Primo Star iLED fluorescence microscope** detects tuberculosis pathogens 4 times faster and with 10% more sensitivity than traditional brightfield microscopes whilst offering a rugged, inexpensive and energy-efficient format especially useful for field clinics. Key to the performance is the integration of an energy saving LED light source into the high quality Zeiss optics.

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.

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. Further information: www.smt.zeiss.com

Electron Microscopy Sciences is proud to introduce Catalog XV-A, the most complete collection of products for light microscopy, histology and electron microscopy and general biological and materials research. With over 12,000 products and over 2000 new unique items this catalog is truly an encyclopedia every lab should have on the shelf. The expanded and revised histology section contains an extensive

collection of prepared stains and fixatives, tissue baths, laboratory ovens, processing cassettes, slide staining equipment, and sectioning accessories and equipment. For the materials laboratory, the catalog includes a complete line of equipment and supplies for light microscope and electron microscope sample preparation. Embedding kits, polishing cloths, slurries, powders, diamond compounds, micro tools and manipulation instrumentation, as well as a complete line of equipment including but not limited to rotary disc cutters, tripod polishers, grinders, polishers, saws and cutters, dimplers, lapping machines, rail polishers, and plasma cleaners are now available. The Electron Microscopy section now includes a revised line of ImmunoGold Reagents, Silicon Nitride Films and Meshes, SEM Capsules, and a complete new range of tools and tweezers for fine manipulation. To receive a copy of the brand new catalog please visit us on the web or call or write us at 1560 Industry Road P.O. Box 550 Hatfield Pa 19440 Tel: 215-412-8400 Fax: 215-412-8450 E-Mail: sgkckc@aol.com Web: www.emsdiasum.com.

The Aduro™ HT system for in situ electron microscopy is now available from Electron Microscopy Sciences, the leading supplier of accessories and supplies for electron microscopy. Developed by Pro-chips Inc., the Aduro™ system provides extremely accurate and well-controlled sample heating with virtually no thermal drift. The breakthrough system overcomes issues of thermal drift and slow responses in conventional heating stages and TEM holders. Traditional electron microscope heating stages use large heating supplies elements millimeters away from the specimen. The Aduro™ heating system replaces standard furnaces with an ultra-thin, conductive ceramic membrane that simultaneously supports and heats the sample. The low thermal mass of the ceramic membrane also allows for extremely fast response times, up to 1,000,000°C per second to temperatures up to 1200°C. With excellent stability and true reaction-rate heating, the software controlled Aduro™ heating system enables novel, in situ experiments on any electron microscope including sintering, rapid thermal cycling and lifetime testing, grain growth, phase changes, surface reactions and quenching - all at the high resolution possible. For more information please visit the online product information at http://www.emsdiasum.com/microscopy/press/in_situ_microscopy.aspx

ASPEX Corporation is proud to announce that they have received the prestigious R&D 100 Award for Microscopy. The **JEMM Xtreme™** was chosen by the independent judging panel and editors of **R&D Magazine as one of the 100 most technologically-significant products of 2008**. The JEMM Xtreme is a rugged, deployable, automated scanning electron microscope used to establish the suitability of an aircraft for safe operation. The system characterizes metallic wear debris extracted from the lubrication oil stream of military jet engines and represents a tremendous improvement in functionality from the SEM/EDX systems currently being utilized for jet engine predictive and preventative maintenance. Additional information about ASPEX and its tools for particle size analysis is located at <http://www.aspexcorp.com>.

BudgetSensors®, a Bulgarian manufacturer of silicon and silicon nitride probes, as well as AFM accessories for Atomic Force Microscopes (AFM), announces the commercial introduction of the **"Tipless All-In-One AFM Probe"** - a tipless version of the recently introduced versatile silicon AFM probe with 4 different cantilevers on a single holder chip. The Tipless All-In-One AFM probes are produced in a similar way to regular BudgetSensors All-In-One AFM probes, with the difference that they don't feature a tip on each cantilever. Just like regular BudgetSensors All-In-One AFM probes, Tipless All-In-One AFM probes have four different cantilevers for Tapping Mode, Soft Tapping Mode, Force Modulation and Contact Mode on one holder chip. The probes

are made of monolithic silicon and offer excellent uniformity and reliable performance. See www.budgetsensors.com for more information.

Asylum Research announced that it is introducing the **Cypher AFM**, the industry's first completely new small sample AFM/SPM in over a decade. Cypher is the world's highest resolution AFM, providing more capability, more control, and more modularity with unprecedented ease of use. The Cypher AFM achieves closed loop atomic resolution using sensors in all three axes, combining the accuracy and control of closed loop with the power of atomic resolution for the most accurate images and measurements possible today. Additional capabilities include SpotOn™ automated laser alignment with a mouse-click, interchangeable light source modules that allow laser spot sizes down to 3µm for broad application and scan mode flexibility, and support for high-speed AC imaging with cantilevers smaller than 10µm. Contact Terry@asylumresearch.com for more information.

As is the case every year, **Gatan offers an intensive, 4-day training school led by its analytical TEM experts**. In 2009, the Gatan EELS and EFTEM Analysis Training School will be held on April 6-9, 2009 at Gatan's R&D Headquarters in Pleasanton, CA, USA. This course reviews the basic theory and practice of EELS imaging and analysis in the TEM, but its main emphasis is on practical techniques, optimum deployment of Gatan hardware and software systems, and advanced EELS and EFTEM applications. Some prior experience with EELS, EFTEM, and Gatan systems is recommended, as is good familiarity with TEM/STEM instrumentation and techniques. By the end of the course, participants can expect to know how best to optimize the performance of their Gatan spectrometer systems as well as their EELS and EFTEM experimental setups in order to capture and extract the maximum amount of information from their TEM samples. Complete online information and registration are available at: www.gatan.com/resources/training/. Space is limited for this popular training program.

Media Cybernetics announces the release of Scope-Pro Express Version 6.3, a plug-in module for Image-Pro Plus and Image-Pro Express image processing software that allows users to easily acquire and save image volumes. Designed for users who do not require navigation in the XY dimension with a stage or multiple channel control, Scope-Pro Express provides control of up to two shutters and focus control. These shutter controls minimize light exposure and reduce photobleaching. Contact Kathy Hrach, tel: 301-495-3305 x260

HREM Research Inc. formally released MSA (Multivariate Statistical Analysis), which was introduced at the M&M2008 in Albuquerque, USA and EMC2008 in Aachen, Germany. MSA is an advanced tool for Spectrum Images (SIs), and works with Gatan's DigitalMicrograph as a plug-in. MSA finds statistically significant features buried under a heavy statistical noise from 2D and 3D spectrum images. MSA was originally developed by Masashi Watanabe mainly at Lehigh University. It features Principal Component Analysis (PCA) and automatically extracts statistically significant spectral features. It also includes several utilities to handle SIs efficiently and to import spectra obtained by other acquisition systems than Gatan DigitalMicrograph. For more information, visit <http://www.hremresearch.com>

NANOSENSORS™ announced that it has added a Carbon Nanotube SPM probe to its scope of products. The Single or Double Walled Carbon Nanotubes (CNT) at the end of the tips are grown by chemical vapour deposition and are ready to use, no shortening or post processing is necessary. NANOSENSORS CNT probes are SPM probes with a tip diameter between 2 and 3 nm. Compared to other Carbon Nanotube

probes available on the market today, that are mostly multiwalled carbon nanotubes, the tip radius of NANOSENSORS™ Carbon Nanotube AFM tips is considerably smaller. They are therefore very suitable for high resolution measurements of nanometer-sized features. Contact www.nanosensors.com for more information.

Brilliant optics and clear illumination are keys to achieving the best possible microscopic imaging results. 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. For more information contact: Molly Baker, Leica Microsystems Inc., Phone 847/405-0123, 800/248-0123 or see www.leica-microsystems.com

FEI Company released its Xplore3D software package, updated to include data acquisition and reconstruction for dual-axis electron tomography. The new capability provides more complete information for the reconstruction of complex biological ultrastructure from high-resolution scanning/transmission electron microscopy (S/TEM). Xplore3D's sophisticated automation and precise specimen positioning capabilities allow users to automatically acquire tomography tilt series images from an initial tilt axis and a second tilt axis, after a sample rotation. Acquiring tilt series from two axis enables users to gain more information from the sample, thereby minimizing the "missing wedge" problem common to all single tilt series tomography. After automated dual-axis acquisition, Xplore3D also now enables automated dual-axis tomogram reconstruction. Its dual-axis capability enables users to generate highly accurate tomograms as simply as possible. Xplore3D is available now and integrated with FEI Tecnai™ and Titan Krios™ TEMs

FEI Company released its new **TrueCrystal Strain Analysis package** that can be installed on a Titan™ or Tecnai™ scanning/transmission electron microscope (S/TEM) system. The new, automated strain analysis package allows engineers to achieve highly-accurate measurements in a fraction of the time of existing techniques.

FEI Company has introduced a new service that will enable its global base of electron microscopy users to browse online in a **digital catalog for instrument upgrades and accessories**. The online service, www.fei.com/owners, is housed on the company's corporate web site for easy access. In addition to delivering custom content on FEI UserClubs, information on training and FEI's global online community, FEI Connect, the new section features a catalog for upgrades and accessories that provides benefits, specifications and application information per individual item. Users can browse to see what is available for their instrument, create their own "wish list" of items and submit this list to an FEI representative who will provide a customized proposal.

FEI's new **Magellan™ extreme high-resolution scanning electron microscope (XHR SEM)** allows scientists and engineers to quickly see 3D surface images at many different angles and at resolutions below one nanometer (about the size of ten hydrogen atoms, side-by-side). Most importantly, the Magellan XHR SEM images samples at very low beam energies, avoiding distortions otherwise caused by the beam penetrating into the material below.

FEI delivers the most innovative solutions for imaging, characterization and prototyping at the nanoscale. The company's most advanced TEM, SEM, and DualBeam™ solutions were created specifically for

materials science, life science, and mining. Please visit FEI at Pittcon 2009 in booth 1642 to learn more about the Magellan and other high-resolution microscopy techniques. More information can be found at: www.fei.com.

Andor Technology plc announced the latest release of its flagship live cell imaging software; iQ 1.9. The upgrade will allow greater flexibility and power for all its users. iQ 1.9 builds considerably on the previous version (1.8.1), released in March 2008, and is intended to be the last release before the much anticipated iQ 2.0. Notable updates include enhanced FRAPPA software support; enabling multi-region bleaching both live and within a protocol. The FRAPPA Calibration Wizard has also been upgraded to store multiple calibration files for different hardware configurations. Multi-field acquisition functionality has been extended by enabling autofocus (Olympus ZDC and Nikon PFS) control at all fields. While support for the CoolLED PrecisExcite LED illuminator enables Andor iQ users to gain access to the many benefits of this technology. Web: www.andor.com

Scientific Volume Imaging has released version 3.3 of its Huygens deconvolution, visualization, and analysis software. This release includes Huygens Core, a solution for imaging facility managers looking for web-accessible, high-throughput, and low-cost remote image processing. Huygens Core can be easily tailored to the individual needs of a facility. It enables operators to run their own customized Tcl scripts or schedulers. Ready-to-use schedulers, such as HRM, and scripts are also available. Huygens Core can be utilized by multiple users simultaneously and the Huygens WIKI web pages ensure that those with little to no prior knowledge can take full advantage of its capabilities. See www.svi.nl.

Olympus is introducing a newly expanded line of FluoView® FV1000-MPE multiphoton laser scanning microscope systems for deeper observation and imaging in living specimens. There are now 14 models and configurations available, allowing researchers to put together the exact system that can both meet their needs now and grow with them in the future. The systems, which incorporate Olympus' world-renowned optics, allow unprecedented capabilities and new flexibility for neuroscientists and biologists who need to image dynamic processes up to several hundred microns deep in living specimens with minimal bleaching or damage.

The **LCV110 Incubator Fluorescence Microscope** from Olympus is the first ultra-long-term live cell incubation and imaging system, offering researchers the unprecedented ability to do multi-channel long-term time-lapse observation of living cells without having to remove cultures from their ideal growth environment.

Olympus has introduced the **FSX100 Bio Imaging Navigator all-in-one microscope system**, a compact, innovative fluorescence microscope and camera system that allows the operator to capture high quality microscope images with load-and-go simplicity, just by following a simple guide displayed on the screen.

The **Olympus ASW v2.0 Software Suite** is designed to maximize performance and ease-of-use for the new line of FluoView® FV1000 confocal and FV1000-MPE multiphoton laser scanning microscope systems. The software is designed to enhance experiments in the areas of neuroscience, cell biology, stem cell research, in vivo imaging, electrophysiology, nanotechnology, and retinal imaging, and is also appropriate for core laboratory facilities.

A **25x, NA 1.05 water immersion (WI) objective** specifically designed for multiphoton imaging offers researchers unprecedented performance when used with the Olympus FluoView® FV1000-MPE multiphoton microscope system. The objective, optimized for and

dedicated to the multiphoton system, offers a super-wide field of view, flexibility for patch clamping and cover slip use, outstanding infrared (IR) performance, and a deep-imaging correction collar for imaging far below the surface of living specimens. It can achieve up to 10 times the optical performance of similar objectives already on the market.

The **Olympus FluoView® FV10i, the latest innovation in the powerful FluoView confocal microscope system series**, is the first commercially available self-contained confocal laser scanning microscope system. Engineered to work "right out of the box," the high performance system is primarily contained in a compact main unit with multiple integrated functions including a laser combiner, imaging system, anti-vibration platform, and more. The FluoView FV10i system comes complete with a 27-inch monitor and other accessories for total functionality.

MetaMorph® for Olympus software offers robust image capture, viewing and analysis capabilities for research microscopy, along with exceptional flexibility and ease of use. The new platform brings together two powerhouse companies in the field of research imaging: Olympus, renowned for its microscope optics, functionality and support, and MDS Analytical Technologies, whose MetaMorph® software already has more than 10,000 citations in research literature. For more information, visit www.olympusamerica.com

Camera upgrade for Micro thermal imaging system: the latest version of the Micro thermal imaging system for semiconductor failure analysis includes a new thermal imaging camera with 320x240 element uncooled detector and 0.05°C sensitivity, 20 µm microscopic lens, wide angle lens, and 16 bit digital Camera Link interface. As electronic devices continue to decrease in size, heat generation and thermal dissipation become increasingly important. Micro can measure and display the temperature distribution over the surface of semiconductor devices, enabling quick detection of hot areas which can decrease efficiency and frequently lead to early failure. Additional applications include calculating thermal resistance, measuring junction temperature, and identifying die bond defects. A complete Micro system includes thermal imaging camera, tower computer and monitor, mounting platform, vertical camera stage, xy table, thermal chuck with controller, and I/O relay module. Contact info: **OptoTherm, Inc.** Website: www.optotherm.com

High-resolution magnification and image capture are available in a sophisticated, compact Mighty Scope from Aven, Inc. that incorporates technology advances. The hand-held precision magnifier with a USB interface, introduced recently by the 25-year-old optical inspection systems company based in Michigan, has several best-in-class features to provide maximum precision, sensitivity, and convenience. Its focus range is fully adjustable to any magnification from 10 times to 200 times, unlike earlier models that limit users to fixed settings or limited ranges. Think of it as a mini-camera that zooms. A brightness control wheel allows fingertip adjustments of illumination from six white LEDs to suit varied interior or exterior environments. For more information, see www.aventools.com.

Semrock has expanded its popular BrightLine family of fluorescence filters with a new series of high-performance long-wave-pass filter sets that are specially optimized for laser-based microscopes and imaging systems. Like all of Semrock's comprehensive family of optical filters, the new laser fluorescence long-wave-pass sets are exclusively manufactured with hard-coated Ion-Beam Sputtering technology for our "no burn-out" reliability, and they are backed by five year warranty. visit the company website at www.semrock.com.