

INDUSTRY NEWS

RÖNTEC AG, Berlin, chose M&M 2005 in Honolulu to introduce its new **Quad SD3 XFlash® detector for ultra-high speed X-Ray microanalysis**. This latest member of RÖNTEC's XFlash® detector family represents the cutting edge in innovative SDD X-ray detector technology. The Quad SD3 provides a total active area of 40 mm² which is divided into 4 separate channels of 10 mm² each. The great advantage of this new design concept is that the detector maintains the high energy resolution of a single 10 mm² SDD



while offering 4 times the solid angle and throughput capability. In conjunction with RÖNTEC's QUANTAX microanalysis system with its high performance signal processing and high speed interface technology, the Quad SD3 was demonstrated to provide 126 eV FWHM up to a count rate of 10 kcps and to be able to collect a maximum of 1,000,000 cps into the spectrum. Due to the large active area it now becomes possible to easily generate several hundred kcps even at relatively low beam currents. Thus not only conventional spectrum acquisition can be significantly sped up without compromising energy resolution, but even more importantly the Quad SD3 may help new analysis techniques such as spectrum imaging to become really efficient and more powerful routine tools. As with all XFlash® SDD detectors, the Peltier-cooled Quad SD3 does not require any additional cooling, generates no vibrations and shows absolutely no microphonic effects. Contact: RÖNTEC USA, Inc. 978-266-2900, sales@rontecusa.com or www.rontec.com

The **Kurt J. Lesker Company** has added the **ULVAC DISL-100 Dry Scroll Pump** to its extensive pump offering. With a base pressure of 380 milliTorr, this 4.2 cfm single-stage scroll pump fills the ultimate pressure void left between diaphragm pumps (typically 1.5 Torr at best) and two-stage scroll pumps (as low as 7.5 milliTorr). The single-stage scroll design means that the DISL-100 offers superior vapor handling and higher continuous inlet pressure performance compared to two-stage models. The DISL-100 costs a fraction of the price of a two-stage scroll pump while delivering the same reliable performance. Contact us at: 800-245-1656 412-387-9200 Web: www.lesker.com

The **Cooke Corporation** offers a high performance 12-bit CCD camera, specifically designed for OEM applications, which integrates the latest advancements in CCD and electronics technologies. At the heart of the camera is an FPGA processor allowing for sophisticated control and accurate timing of the CCD and associated electronics. In addition, a proprietary offset control algorithm has been developed which provides very high offset stability, regardless of ambient temperature or signal changes ensuring accurate and repeatable quantitative data over long periods of time. The pco.1300oem's most unique feature is its flexibility for customization to fit any OEM user application. ROI, binning, cooling, as well as other features of the camera can be selected and optimized to accommodate the application. Camera features excellent resolution (1344x1024 pixel), 12-bit dynamic range, exposure time 5µs to 1

hour, internal frame buffer for continuous image capture (64MB min), excellent low noise of 8e⁻ rms @ 10MHz, selectable regulated cooling to -30°C vs. ambient, standard interface IEEE1394a, optimal offset stability and control (≤ 1 count). For additional information call: 248 276 8820

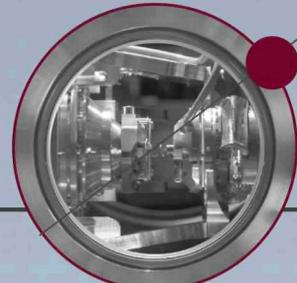
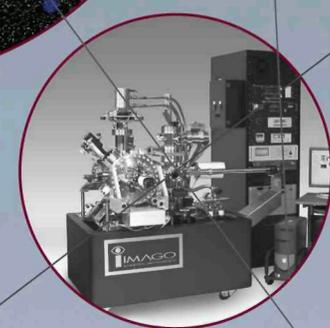
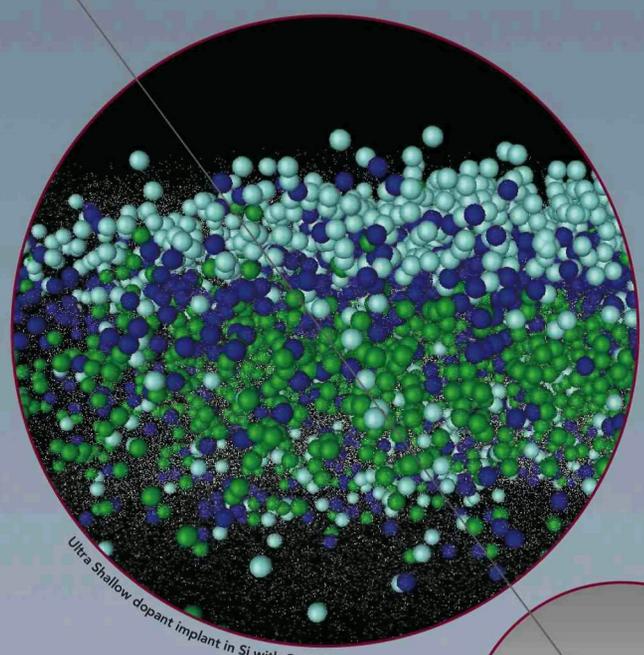
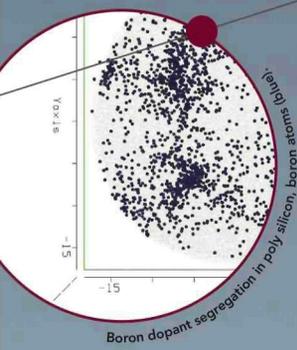
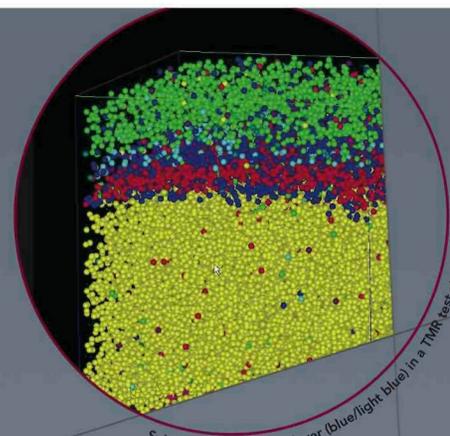
Technical Manufacturing Corporation (TMC) has introduced **Mag-NetX™, a magnetic field cancellation system** that compensates for magnetic interference that diminishes the performance of scanning and transmission electron microscopes, electron beam lithography systems, focused ion beam instruments, and other tools that incorporate a charged beam. Building on its expertise as a designer and manufacturer of active vibration isolation systems that cancel building floor vibrations, TMC developed Mag-NetX to actively compensate for magnetic field fluctuations caused by nearby machinery, elevators, power lines, and other external sources. Designed for both point-of-use and OEM applications, the open cube-shaped Mag-NetX detects magnetic fields and sends out an equal and opposite field to cancel the interference. The system is comprised of a dedicated controller with automated calibration and self-test features, AC and DC magnetic sensor, and Helmholtz coils in a structural casing. It can be floor/wall mounted or tool mounted and sized to user-specific requirements. The system is dynamic, continuously monitoring and achieves 35-40 dB of attenuation. See: <http://www.techmfg.com/products/magnetic/magnetx.htm>

Pacific Nanotechnology, Inc. (PNI) announces the **Environmental Cell (EC) for the Nano-R™ Light Lever AFM system**. To enable characterization of the surface properties of a sample using AFM (Atomic Force Microscopy), the operator needs to be able to change the environment of study. Experiments carried out purely under ambient conditions will not reveal all properties as when the experiments are made under different conditions such as changing the gas or liquid. By changing the environment, the user can perform in-situ experiments which may be more like the sample would undergo in an end use application. Examples may include the study of a human hair and its reaction to different shampoos; the growth of cellular material on a metal surface; crystal growth and dissolution; surface oxidation. PNI sets a new standard for ease of use enabling the user to easily change the experimental environment around a sample as well as simplifying sample changing between experiments. The Environmental Cell chamber is created by making a seal between the AFM scanner and the top of the sample holder or puck. This seal is made of latex and is sufficiently flexible to make it possible to translate the sample several millimeters to find the optimum imaging region. Please contact Jezz Leckenby at jezz@ims-europe.net or Paul West at pwest@pacificnanotech.com

Imago® Scientific Instruments in conjunction with its representatives based in Japan, The Noah Corporation, announced today that they have delivered a **LEAP 3000 Metrology System** to the Toshiba Corporation solidifying Imago's continued global leadership position in nano-scale metrology. The



Welcome to a new era. Practical 3D atom mapping is here.



Imago's LEAP® 3000X maps 3D composition with sub-nanometer resolution for semiconductor and data storage devices.

If you've ever dreamed of seeing the exact dopant distribution in your semiconductor devices or mapping actual GMR layers, the LEAP 3000X makes it a reality. Imago's introduction of Laser Pulse Mode extends atom probe applications to low-conductivity materials.

Available in Laser Pulse Mode as well as Voltage Pulse Mode, Imago's new LEAP 3000X is ideal for both semiconductor and data storage applications. LEAP 3000X is available today.

For more information, visit www.imago.com or call (608) 274-6880 ext 213.

TYPICAL APPLICATIONS

Voltage Pulse Mode

- GMR/TMR devices
- Thin metal films
- Low resistivity SiGe
- Phase/grain boundary analysis
- Precipitates

Laser Pulse Mode

- Thick dielectric films
- High K
- Ceramics
- SiGe
- High resistivity silicon
- Ultra shallow junction dopant profiling



INDUSTRY NEWS

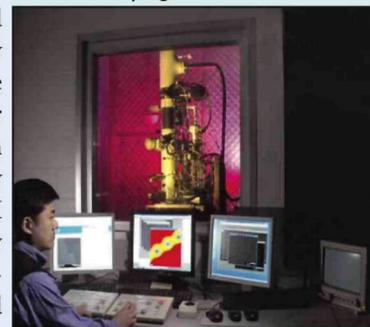
LEAP provides critical, 3-dimensional information at the nano-scale allowing positive identification of elements and isotopes within a material system. The true power of the LEAP lies in its ability to tie compositional information to spatial position, this allows manufacturers to shorten time-to-market, enhance product yields and maximize capital equipment utilization. This capability has proven valuable in solving a variety of issues facing device manufacturers and researchers in the micro-electronics/data storage field. For more information, see www.imago.com.

Media Cybernetics Inc., announces the release of **Advance Fluorescence Acquisition (AFA) Version 5.1**. AFA, an Image-Pro Plus plug-in module, is for research microscopists who need to acquire and manage images in multiple dimensions. AFA Version 5.1 includes additional functionality which allows users to automate and manage complex acquisition setup parameters, user feedback display, and subsequent sorting into sets for analysis. New AFA Version 5.1 features include: Customization Features - AFA offers a wide variety of experimental protocols. However, if researchers wish to further customize AFA with their own macros, AFA 5.1 includes a new Macros Tab that gives an entry point for adding a custom macro to any part of the AFA the acquisition loop. Enhanced Time-lapse Tools - The Time tool now allows multiple time phases with different time intervals and numbers of time points per phase. During acquisition, users can manually switch to any of the defined time phases. They can insert a macro into the new Macros Tab that will check the status of an environmental variable and automatically switch to another phase. View Color Composite Images During Acquisition - With AFA 5.1, color composite images of multi-channel experiments can be created as images are being captured and saved to disk. Create Large Images with Image Tiling - With Automated Tiling, users no longer require absolute precision in aligning their camera to their stage. Small offsets are aligned and corrected for. Setup Channel Acquisition for Easy Viewing - The Set Channel Layout tool allows users to record the positions, zoom, and scroll of the various channels in their acquisition and save the layout. Once a layout has been saved, the next acquisition will display the individual channel images in the same locations, in a slightly cascading pattern. This allows users to eliminate cluttered desktop screens and experience easier viewing of multiple channel acquisitions. AFA 5.1 is available as part of the Image-Pro Advanced Microscopy Suite or the Image-Pro Multi-dimensional Acquisition bundled solutions. Phone: 301-495-3305 x260 | Fax: 301-495-5964 Email: khrach@mediacy.com www.mediacy.com

Oxford Instruments' microanalysis business, which incorporates the INCA range of ED, WD and EBSD systems and the recently acquired HKL EBSD product range, has been **renamed Oxford Instruments NanoAnalysis**. David Scott, who has been the Sales Director of Oxford Instruments Analytical since 1998, has been appointed Managing Director of this new group. For further information, please contact Lynn Shepherd at Oxford Instruments Tel: +44 1494 442255 Email: lynn.shepherd@oxinst.co.uk

JEOL has developed a new capability known as **Sirius** which allows remote operation and imaging using the JEOL TEM. To prove this point, JEOL recently demonstrated Sirius at the Microscop-

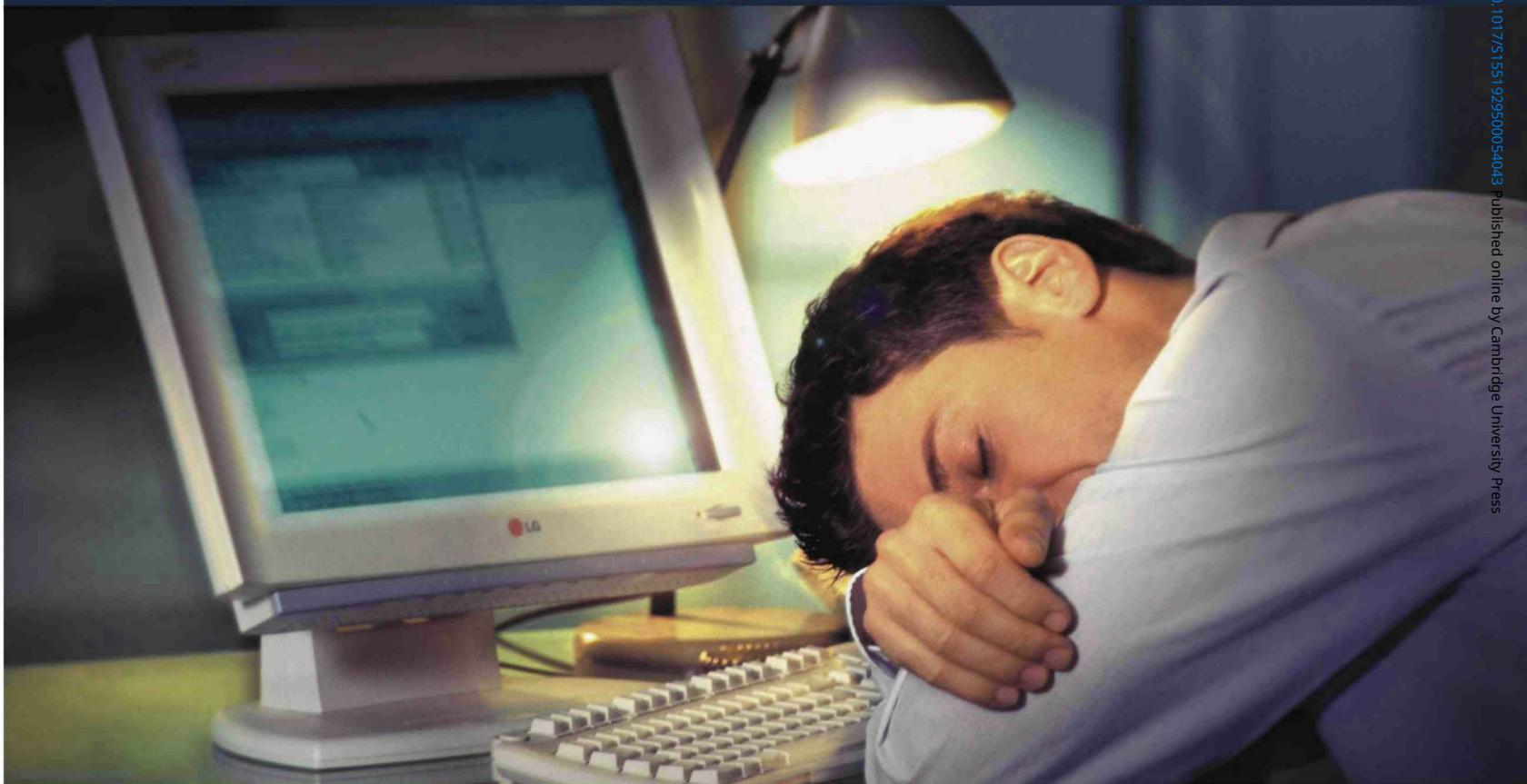
py and Microanalysis trade show held in Hawaii in August. Working closely with the Hawaii Convention Center, Pacific DirectConnect, and the University of Hawaii, JEOL remotely operated a JEM-2100F field emission TEM installed at Northwestern University in Evanston, Illinois from the floor of the convention center in Honolulu. A customer from California performed a variety of experiments using TEM samples that he had previously shipped to Northwestern University, where they were loaded onto the specimen stage in the



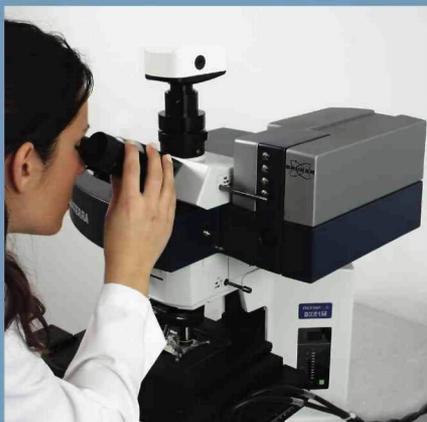
TEM electron optics column and then positioned, imaged, and analyzed from a quarter of the way around the world. The TEM was outfitted with STEM, multiple CCD cameras, an Oxford EDS system, and a Gatan Tridiem energy filter, all of which were operated with Sirius software. Remote operation expands the functionality of the JEOL field emission TEMs, making it possible for joint research to be conducted without the need for microscopists to travel to the TEM installation site. It facilitates time sharing for the most efficient use of the instrument and for educating students at various campus locations, as is done at the University of Delaware, for example, or allows for the instrument to be set up in the best possible location and controlled from the user's desk or a more conducive setting for analysis. The remote connection can also be used by JEOL service or applications engineers to test an instrument or to set up an experiment remotely. See: <http://www.jeolusa.com/>

With the new **monochrome camera ProgRes® MFcool JENOPTIK** now offers a professional solution for the special tasks not just in fluorescence microscopy. The cooled 14bit camera with a resolution of 1.4 million pixel delivers detailed images and assures a sparing treatment of your fluorescence samples due to high image refresh rates of up to 45 frames per second offered in several binning-modes. The sensitivity and the quality of the image is additionally improved by an analogue gain and a switchable thermo-electrical cooling. The image capture software ProgRes® Capture Basic, included in delivery, has been extended by a sophisticated fluorescence mode, guiding the user through a predetermined capture procedure and supporting him during combination of different filter images. Multi-color fluorescence images can be combined from up to 5 single shots. Furthermore, the mode enables the user to minimize auto-fluorescence already during image capture. Of course, the ProgRes® MFcool can be externally triggered and is easily adoptable to any microscope or PC in combination with C-Mount and FireWire® interface. For color-requiring applications in other areas of light microscopy this camera is available with a color sensor under the name ProgRes® CFcool. Contact: JENOPTIK Laser, Optik, Systeme GmbH Business Unit Sensor Systems Jena Germany, Phone: +49 (0) 3641 65-2139 www.progres-camera.com, www.jenoptik-los.com

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Dispersive Raman Spectroscopy



- Compact design
- Sure_Cal*[®] automated calibration
- Automatic fluorescence removal by SERDS[™]
- High wavelength precision of $<0.1\text{cm}^{-1}$
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- Confocal depth profiling
- Chemical mapping
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