FEI LAUNCHES APREO HIGH-PERFORMANCE SEM

FEI (Hillsboro, Ore.) announced the new Apreo scanning electron microscope (SEM), offering an industry-leading range of applications. Apreo offers exceptional versatility in fields ranging from materials and life sciences to research in semiconductors, energy, and chemistry.

Researchers and developers must obtain as much microscopic information as possible from their samples. They want to be able to see materials contrast and determine the chemical or crystallographic properties of a wide range of samples, such as conductors, insulators, and those that are magnetic- or beam-sensitive. Researchers want to operate over a wide range of conditions, including high or low vacuum and at different tilt angles. Apreo provides this capability.

Due to its proprietary compound final lens design, the Apreo SEM is capable of resolution down to 1.0 nm at 1 kV without the need for beam deceleration, providing high performance on nearly any sample, even if it is tilted or topographic.

Trisha Rice, Vice President and General Manager of FEI’s Materials Science Business, said, “Apreo was specifically designed to be the midrange SEM tool of choice. Its feature set and ease of use should put it at the top of the list for our research and industrial laboratory customers who require high performance, broad versatility, and easy operation over a wide range of applications for users with varying levels of expertise.”

Apreo offers backscatter detection at the lowest beam currents, at any tilt angle, on sensitive samples and at TV-rate imaging, so materials contrast is strong. Detector segments can be individually addressed, which allows researchers to optimize for angular contrast or for signal intensity and to extract the information that matters most. It provides a wide range of approaches for dealing with insulating samples, including a low-vacuum capability with a chamber pressure of up to 500 Pa. Finally, Apreo is an excellent tool for analytics, with ports for up to three energy-dispersive x-ray spectrometry (EDS) detectors, coplanar EDS, and electron backscatter diffraction. It also has analytics-compatible low vacuum and beam currents up to 400 nA.

The Apreo software provides user guidance and point-and-click navigation using an in-chamber camera, making it easy for even novice users to obtain excellent results. High-productivity labs will appreciate the capability to load multiple samples quickly and easily without tools.

For more information: web: fei.com/apreo.

RENISHAW OFFERS CONFOCAL RAMAN MICROSCOPE

The new inVia Qontor is the most advanced Raman microscope offered by Renishaw (Gloucestershire, U.K.). Building on the market-leading inVia Reflex, the inVia Qontor has enhanced performance and features for a variety of applications, including material analysis, chemical imaging, and high-resolution surface analysis. It offers improved sensitivity, faster scanning speeds, and more robust optical components, making it ideal for a wide range of research and industrial applications.
**Design Flexibility**

A Core Component of QFI Microscopes

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Integrated Probe Stations 200/300 mm
Portable LabWalker™
ATE-Docking

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**Application requirements drive configuration decisions.**

QuantumScope™ failure analysis microscopes and InfraScope™ temperature measurement microscopes are available in a variety of configurations. Flexibility has always been a core design principle at QFI. We understand the need to consider both current and projected applications when establishing the appropriate capability set for any analytical equipment. QFI systems are generally compatible with field upgrade to address changing requirements. We invite you to discuss your specific analytical needs. Please let us know how we can assist you via the contact information listed below.

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QFI

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Qontor adds a new dimension to the performance and ease of use for which inVia is renowned.

The inVia Qontor includes the addition of Renishaw’s latest innovation, LiveTrack focus-tracking technology, which enables users to analyze samples with uneven, curved, or rough surfaces. Optimum focus is maintained in real-time during data collection and white light video viewing. This removes the need for time-consuming manual focusing, prescanning, or sample preparation.

The inVia Qontor, equipped with LiveTrack, enables the acquisition of accurate and reproducible spectra from samples with extensive topographic variations. Because a sample’s topography no longer limits Raman imaging capability, LiveTrack opens up the analysis of a whole new range of samples and applications.

With LiveTrack, focusing is dynamic. LiveTrack provides continuous feedback to the sample stage, which adjusts to follow the height of the sample. This ensures that the laser maintains focus during data collection and when manually moving the sample during white light video viewing. Optimum focus is maintained across uneven, sloping, or dynamic samples, limited only by the maximum travel of the stage.

The inVia Qontor enables the analysis of samples that were previously impractical to study or would have required extensive sample preparation. For example, uneven geological samples that normally require sectioning and polishing can now be analyzed without any sample preparation.

Tim Smith, Renishaw Applications Scientist, said, “Acquiring in-focus Raman images of your whole sample is now a reality. Users can track the surface live while acquiring surface or even subsurface Raman data and later view the Raman image and surface topography of their sample in 3-D. This innovation not only saves time but, in some cases, allows us to analyze samples that were previously impossible to study.”

The inVia range of microscopes is trusted worldwide to deliver outstanding performance and reliable results for even the most challenging experiments. The inVia Qontor Raman microscope’s cutting-edge technology reduces overall experiment times and makes it easy to analyze even the most complex samples.

For more information: web: renishaw.com.

**NORDSON DAGE ANNOUNCES QUADRA X-RAY INSPECTION**

Nordson DAGE (Aylesbury, Buckinghamshire) announced the launch of its fourth-generation ultra-high-resolution off-line x-ray system, the Quadra series. With its in-house proprietary QuadraNT tube, Aspire FP detector, Gensys inspection software, and QuadraGen power supply, Nordson DAGE offers the future of x-ray image resolution, reliability, performance, and throughput.

Nordson DAGE’s flagship system, the Quadra with 0.1 µm submicron feature recognition, comes equipped with two 4 K ultrahigh-definition (UHD) displays. Their 8 million pixels fully show the 50 µm pixel pitch and 6.7 MP image size of the Aspire FP detector. The 4 K UHD offers up to 4 times the detail compared to standard high-definition display screens and supports 68,000× total magnification. Submicron-level features can be seen without a loss of detail.

The Quadra, with industry-leading core technology, offers high performance and ease of use for 2-D and 3-D x-ray applications. The 0.35 µm feature recognition up to 10 W of power, with optional 20 W, makes Quadra 5 the leading choice for printed circuit board and semiconductor package inspection.

Ben Peecock, Business Director of X-Ray Systems, commented, “The launch of the Quadra series x-ray systems marks the start of a new and exciting chapter in inspection solutions for the electronics industry. We have continued to build on our solid foundation of leading-edge technology development while maintaining a real focus on our customers’ needs. Further vertical integration of the key elements within the systems has enabled us to remain (continued on page 44)
Extended Wavelength
IREM-IV Photon Emission Microscope

Demonstrated sensitivity at 0.4V_{dd} on 14 nm Tri-gate and FinFET devices:

- 3.3NA SIL Objective
- 5-position motorized lens turret
- 1016 X 1016 pixel image
- 800 – 2500 nm responsivity
- Dual internal cooled filter wheels
- Motorized sample tilt table

NEW! LASER SURFACE PROBE
Measure device tilt and profile

HIGHEST RESOLUTION
3.3 NA SIL Objective

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22nm Tri-Gate Device

LARGEST FIELD OF VIEW
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PRODUCT NEWS

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Teledyne LeCroy’s WaveRunner 8000 oscilloscope

Teledyne LeCroy, Inc. (Chestnut Ridge, NY), a Teledyne Technologies company, introduced the WaveRunner 8000 oscilloscopes with bandwidths from 500 MHz to 4 GHz. WaveRunner 8000 has the industry’s widest and deepest collection of tools, making it very powerful. WaveRunner 8000 marks the debut of the next-generation MAUI (most advanced user interface), bringing enhancements to the oscilloscope industry’s premier user interface. The addition of OneTouch to MAUI makes measurement setup very intuitive and easy, providing users with dramatically faster time-to-insight into complex signal abnormalities.

“Teledyne LeCroy’s WaveRunner oscilloscopes have delivered exceptional value to customers in the midrange of the oscilloscope space for nearly two decades,” said Tom Reslewic, Chief Executive Officer of Environmental and Electronic Measurement Instrumentation. “The new WaveRunner 8000 oscilloscopes continue this legacy by delivering unprecedented performance, powerful tools for debugging, and unparalleled ease of use—all at very reasonable prices.”

The WaveRunner 8000 and MAUI with OneTouch extend Teledyne LeCroy’s long tradition of user-interface innovation. MAUI with OneTouch has revolutionary drag-and-drop actions to copy and set up channels, math functions, and measurement parameters without lifting a finger. Along with the standard collection of math, measurement, debug, and documentation tools and application-specific packages, the new WaveRunner 8000 provides all the power and capability required to deliver faster time-to-insight with easy access to all the oscilloscope functions.

For more information: web: teledynelecroy.com/wr8000/.

NOTEWORTHY NEWS

EOS/ESD SYMPOSIUM

The 38th Electrical Overstress/Electrostatic Discharge (EOS/ESD) Symposium will be held September 11 to 16, 2016, at the Hyatt Regency Orange County in Garden City, Calif. The symposium is focused on discussing the issues and providing the answers to electrostatic discharge in electronic production and assembly. Attendees will gain beneficial electrostatic knowledge, learn solutions to electrostatic issues and obstacles, discover new and emerging technologies, network with ESD professionals, and develop valuable peer and industry contacts.

The EOS/ESD Symposium is sponsored by the EOS/ESD Association and co-sponsored by IEEE’s Electron Devices Society, EMC Society, and Reliability Society.

For more information, visit the EOS/ESD Association’s website at esda.org.
Resolve 110 nm lines through Unthinned Silicon

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