

Product News

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X-ray and Computed Topography Combine for Submicron Resolution FA

North Star Imaging Inc. introduces the **X25 CT compact digital X-ray and computed topography system** designed for submicron resolution imaging and ultrahigh-accuracy scanning, making it suitable for electronics failure analysis. It houses a precise five-axis manipulator with vibration isolation system. It provides a 228×228 mm scanning envelope and a rotational stage capable of handling up to 11 kg. These features make it suitable for X-ray and CT applications ranging from 3-D metrology to failure analysis both in industrial quality control and R&D laboratories. The system is dedicated to the inspection of small- to medium-sized objects in the electronics, medical devices, and other sophisticated industries.

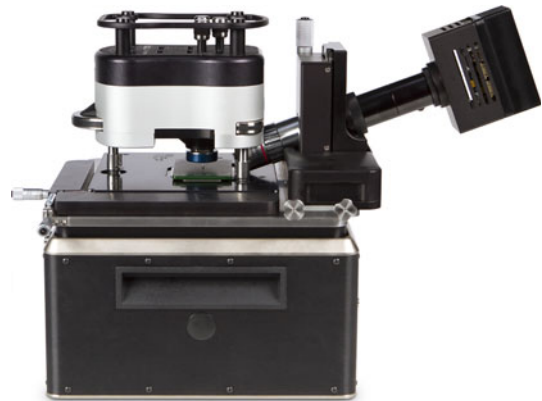
With an X-ray voltage range from 10 to 160 kV, the X25 CT system provides an overall maximum system resolution of $<0.5 \mu\text{m}$ and a geometric magnification of up to $4000\times$. Its maximum scan travel is 228 mm vertical and 152 mm horizontal, with a Z axis (source to detector) of 1003 mm and a rotation of 360° continuous. Each axis is independently joystick controlled. Tailored to the specific task, the system combines nanofocus, microfocus, open or sealed, and transmission X-ray tubes with flat panel (DDA) or linear diode array (LDA) digital X-ray detectors. Features of the cabinet include cable access port with cover, interior lighting, powered sliding access doors, leaded glass viewing window, safety light curtains, and touch screen functionality.

For more information: North Star Imaging, Inc., 19875 S. Diamond Lake Road, Suite 10, Rogers, MN 55374; tel: 800/635-8392 or 763/463-5650; fax: 763/463-5651; web: www.xviewct.com.

NanoIndenter Based on Passive Actuation Minimizes Errors

Asylum Research offers the **MFP NanoIndenter** based on passive actuation through a monolithic flexure, which minimizes drift and other errors in depth measurement. Unlike cantilever indenters, the indenter tip moves perpendicular to the surface. This vertical motion avoids the lateral movement and errors that are inherent in cantilever-based systems. Compared to conventional commercially available instrumented nanoindenters, the MFP NanoIndenter provides lower detection limits and higher-resolution measurements of force and indentation depth with the superior precision of AFM sensing technology.

The indenter is completely integrated with the AFM, providing the unique ability to quantify contact areas by performing AFM metrology of both the indenting tip and the resulting indentation. These direct measurements



MFP NanoIndenter from Asylum Research

enable analysis of materials properties with unprecedented accuracy relative to indirect calculation methods. The design uses passive actuation through a monolithic flexure, minimizing drift and other errors in depth measurement. The positioning accuracy in the sample plane is subnanometer using the MFP's closed loop nanopositioning sensors. The NanoIndenter Head uses advanced diffraction-limited optics coupled with CCD image capture for precision navigation of the tip to areas of interest on the sample.

For more information: Asylum Research, 6310 Hollister Ave., Santa Barbara, CA 93117; tel: 888/472-2795 or 805/696-6466; fax: 805/696-6444; e-mail: info@asylumresearch.com; web: www.asylumresearch.com.

Tinius Olsen Launches Line of Advanced Hardness Testers

Tinius Olsen has launched a line of next-generation hardness testers that can rapidly and accurately determine the

hardness testers are load cell based systems offering enhanced test results over dead weight loading units. Most models incorporate the latest full-color touch screen displays and controls for easy user interfacing. Portable, bench, and floor-mounted testers are available.

Connectivity is via USB port and Wi-Fi with the ability to consolidate test results data from other Tinius Olsen testing machines in the same lab using the company's latest Horizon test automation software platform. Universal models can run any popular hardness scale test (Vickers, Micro-Vickers, Brinell, Rockwell, Superficial Rockwell, Knoop, HBT, or HVT) or method-specific units. A variety of precision workpiece sliding tables, built-in electronic digital microscopes, objectives of varying magnification, and LED illumination choices ensure hardness testing requirements can be met, from light to heavy duty, and portable models extend test choices into the field.

For more information: Tinius Olsen, Inc., 1065 Easton Road,

Horsham, PA 19044-8009; tel: 215/675-7100; fax: 215/441-0899; e-mail: info@tiniusolsen.com; web: www.tiniusolsen.com.



Precision Motorized Microscope Stage Driven by High-Stability Piezo Linear Motors

The **M-687 XY motorized microscope stage family for inverted microscopes**, offered by Physik Instrumente (PI) GmbH & Co. KG, is more compact than traditional stepper-motor/servo-motor driven open frame XY stages due to its fully integrated, compact piezo linear motors.

The self-locking ceramic on ceramic direct-drive motors in the M-687 XY positioner also provide up to 10× higher positional stability, because no holding current is required (no heat dissipation), there are no lead screws that heat up due to friction during motion and cause drift cooling down once the motion stops, and there is no lubricant flow in the drive screw causing slow creep. Linear encoders with 100 nm resolution provide direct position measurement with high accuracy. The compact design with minimized mass and inertia provides accurate bidirectional speed and position control, as well as constant velocity, even at very low speeds. The drive system is based on PI's U-164 ultrasonic piezo motor and outperforms the stability, acceleration, and settling speed of traditional servo-motor direct drives and gear-driven mechanisms.

For more information: PI (Physik Instrumente) L.P., 16 Albert St., Auburn, MA 01501; tel: 508/832-3456; fax: 508/832-0506; e-mail: info@pi-usa.us; web: www.pi-usa.us.

Zoom Microscope Provides Speed, High Resolution for Large Object Fields

Axio Zoom.V16 from Carl Zeiss Microscopy, LLC, combines typical benefits of stereomicroscopes such as zoom optics and long working distances with the higher resolutions of light microscopes. In comparable image fields, Axio Zoom.V16 offers a $2.5\times$ higher resolution than stereomicroscopes. A $16\times$ zoom range surpasses comparable microscopes currently available.

Fast imaging of large measuring surfaces with high enlargements allows for statistical analysis of structures. Details such as pores can be enlarged to a great extent, then analyzed, digitally imaged, and documented. The EpiRel contrast shows a relief structure even on flat samples, such as wafers. Customers choose from a comprehensive range of accessories for individual configurations that match the needs of a wide variety of applications. Technologies such



Axio Zoom.V16 from Carl Zeiss Microscopy, LLC

as the digital lens tube increase the flexibility of these zoom microscopes.

For more information: Carl Zeiss Microscopy, web: http://microscopy.zeiss.com/microscopy/en_de/products/stereo-and-zoom-microscopes/axiozoom-mat.html. ■