

NEW AND/OR INTERESTING AT PITTCON '96

As is our custom, and for the hopeful interest of readers who could not attend PITTCON '96, in the following we have attempted to summarize the products and services in microscopy which were "new and/or interesting."

☛ AMRAY Inc. demonstrated two instruments from their recently announced 300 Series of Scanning Electron Microscopes. The **AMRAY Model 3200 ECO** is a variable pressure SEM that allows for uncompromised examination of traditionally unfriendly SEM samples. AMRAY also demonstrated the reasonably priced **AMRAY Model 3300FE Field Emission SEM**. Both models at the conference were equipped with 2000 line frame buffers, AMRAY's Windows™ based computer control, 17" viewing monitors (1000 lines), and numerous user friendly features. AMRAY: (617)275-1400, Fax: (617)275-0740.

☛ At this year's PITTCON Conference, Denton Vacuum introduced the **Desk II TSC Turbopumped Sputtercoater**. The Desk II TSC is the latest model in DVI's product range of high vacuum, tabletop, state-of-the-art SEM coating systems. This unit features the ability to deposit a wider range of materials including chromium, tungsten, and platinum necessary to meet the demand for today's higher resolution microscopes. Denton Vacuum: (609)439-9100, Fax: (609)439-9111.

☛ Digital Instruments featured scanning probe microscopy (SPM) applications in polymer science, electrochemistry, and life sciences, as well as force measurements with functionalized tips. Exhibited was DI's exclusive new **Phase Imaging Technique**, a fast and easy method for mapping variations in surface composition, adhesion, friction, hardness, viscoelasticity and other properties not revealed by simple topographical imaging. Also exhibited was the **Dimension™ 3000 SPM**, which offers the complete range of SPM/AFM scanning techniques for small or large samples including nano-topography, magnetic force, lateral force, electrochemistry, phase imaging, TappingMode™ and others. Digital Instruments: (800)873-9750, Fax: (805)899-3392

☛ EDAX International displayed two major new products: The **DX^{PRIME} Microanalysis System**, is Microsoft Windows 95 based, and comes standard with a 166 MHz Pentium CPU. It has full software support for microanalysis, digital imaging, automation, etc. for both SEM and TEM.

The **Sapphire Series Si(Li) Detectors** offer an impressive P/B of 20,000:1, 135 eV resolution as standard, and is backed with a three year warranty. An increase of crystal active volume improves the X-ray stopping power as offered by HPGe type detectors.

EDAX International: (201)529-4880, Fax: (201)529-3156.

☛ Electroscan Corporation displayed the **ESEM FE3030**, the first variable pressure SEM using a field emission gun, which gives a resolution of 2 nm with a sample in 7 torr of water vapor. Only the ESEM can offer secondary electron imaging in both high vacuum and environmental modes. This allows observation of uncoated samples in a wide range of gases at temperatures from -170°C to +1500°C. Electroscan: (508)988-0055, Fax: (508)988-0062.

☛ At the PITTCON Meeting, ETP-USA exhibited its **Series IV Robinson Backscattered Electron Detector**. The microprocessor controlled BSE detector, the original with Windows capability, was met with great acceptance. The **ETP-USA SEM Chamberview System** was also on display and enjoyed equal success. Enjoying over 10 years of success, ETP-USA's products could be seen all over the exhibition floor on many different models of SEMs. ETP-USA: (510)449-8534, Fax: (510)449-8996.

☛ Hitachi Scientific Instruments demonstrated the following products: the **S-3200 Variable Pressure SEM** which can be quickly changed from high pressure, environmental mode to low pressure, high resolution mode at the touch of a button, while any type of sample will remain in its natural state; the

Model S-4500 FE-SEM (with its SE Detector) gives resolution of 45 Å guaranteed at 1 kV, and 15 Å guaranteed at 15 kV. This detector method yields ultimate surface detail not seen with a standard SE detector. The **PCI System** is a Windows-based image capture system for both analog and digital electron microscopes, and offers the capability to network several electron microscopes equipped with video cameras. Hitachi: (415)969-1100, Fax: (415)961-0368.

☛ Kevex exhibited several products: the **Kevex SIGMA Microanalyzer**, capable of spectral and image quantification, elemental mapping, feature analysis, EM column and stage automation; the **Kevex 771**, a laboratory EDXRF system which accommodates solids or liquids; the **Kevex SUPERDRY**, a no-LN detector available for both the Sigma and 771 products; the **Kevex OMICRON**, a FAB/lab microfluorescence system which accommodates solids or liquids, performs spectral analysis or thin film quantification and mapping; and the **Kevex SEMICRON**, an automated cassette-to-cassette microfluorescence system, designed for semiconductor metrology used in Class 1 clean rooms. Kevex: (805)295-0019, Fax: (805)295-8714.

☛ LEO Electron Microscopy, the new EM joint venture company formed by Leica and Carl Zeiss, demonstrated the **LEO 982 FE SEM** and the new **LEO 435VP**. The LEO 982 utilizes the unique GEMINI column and in-column detector to achieve resolutions of 1.2 nm at 20 kV and 4 nm at 1 kV. The variable pressure LEO 435VP SEM is equipped with a Windows interface, a 5-axis fully motorized stage and turbomolecular pumping as standard. The variable pressure mode of operation allows imaging and high kV EDX analysis of uncoated non-conductive materials. LEO Electron Microscopy: (914)747-7700, Fax: (914)747-7443.

☛ MOXTEK introduced the **PF-700 PIN Diode X-ray Detector**. It is a room temperature replacement for Si(Li) detectors at moderate resolution (290 eV at Mn K α) and low cost. The main purpose of this detector is to allow equipment manufacturers to add x-ray spectroscopy to their products easily and cheaply. MOXTEK, INC.: (801)225-0930, Fax: (801)221-1121.

☛ Nicolet Instrument Corporation, together with Spectra-Tech Inc., introduced new **OMNIC® Atlas™ Microscope Software** for infrared microspectroscopy. Atlas features integrated "point-and-click" control of the microscope mapping stage with video image and spectral processing functions. It allows users to interact directly with a live video image of the sample and to extract specific information from line or area maps. Atlas also displays profiles using contour maps, waterfall displays, and rotatable 3-D imaging. Nicolet Instrument Corporation: ((608)276-6100, Fax: (608)273-5046.

☛ NORAN Instruments presented its **EXTREME EDS Detector**, with resolution of 129 eV Mn and 65 eV F, and its **CryoCooled** option, which requires neither liquid nitrogen nor any consumable besides electricity, so it is ideal for clean rooms. The new **Defect Analysis Software** for semiconductor applications was also shown. Defect Analysis combines VOYAGER'S x-ray microanalysis and digital imaging operations with fab yield management processes, and uses VOYAGER's **Spectral Match Program** to classify defects in semiconductor samples. NORAN Instruments: (608)831-6511, Fax: (608)836-7224.

• Oxford Instruments, Inc., Microanalysis Group introduced a new microanalysis system, the **Link ISIS Series 300**. One of the many features of the new system includes the **DXP50 Digital Pulse Processor**, which allows twice the count rate for a given - faster analysis with better precision. Also of interest was the recent acquisition of the Microspec Corporation and our offer of the integrated **Wavelength Dispersive Spectrometer, the Microspec WDS 400/600**. The Oxford Microanalysis Group also announced that they are now the sole distributor of the Oxford Instruments RI EM Products, including **Cryo Preparation Systems** for SEM and TEM and **Catholuminescence Detection Systems**. Oxford Microanalysis Group: (508)369-9933, Fax: (508)369-6616.

• Park Scientific Instruments presented their **AutoProbe®** line of scanning probe microscopes (SPMs). Featured among these was **AutoProbe M5**, a fully integrated large sample capacity atomic force microscope. AutoProbe M5 features the most highly demanded SPM modes and is well suited to the diverse demands of both industry and research. AutoProbe M5 can be used for application in fields as diverse as surface science, semiconductor technology, magnetic media, polymer science, biology, chemistry, coatings, optics, and more. Park Scientific Instruments: (408)747-1600, Fax: (408)747-1601.

• Philips Electron Optics exhibited one of their **XL Series Analytical Scanning Electron Microscopes (SEM)**. These systems differ from the traditional functional integration of an SEM and Energy Dispersive Spectrometer (EDS) in that the EDS is embedded in the SEM. The result is a complete analytical system that is controlled via a single Graphical User Interface. This means that there is only one software and one hardware platform. Information transfer between the analyzer and SEM can therefore be via the very latest technologies as dynamic Data Exchange (DE) and the sharing of Dynamic Link Library (DLL) files. In addition to the optimized electron optics, the geometrical design of the Philips XL SEM is ideal for analytical applications. Philips Electronic Instruments: (201)529-3800, Fax: (201)529-2252.

• PGT introduces **IMIX-PTS with Position Tagged Spectrometry**, a new and revolutionary method for microanalysis data collection. While the electron microscope rapidly scans the sample and acquires a high resolution image, X-ray counts are processed and encoded with the specimen (x,y) coordinate information. In one efficient collection, the operator gets a high resolution digital image, a full EDS spectrum from the image area, multiple spectra from any regions selected within the image and quick X-ray maps for all elements in the periodic table. The maps and spectra may be displayed live, during collection, or may be requested after collection from stored position tagged data. Princeton Gamma-Tech: (609)924-7310, Fax: (609)924-1729.

• The **AFA Package** from RJ Lee Instruments Ltd. transforms the **PERSONAL SEM®** into an automated analyzer, permitting unattended running of the SEM while information is gathered on particle size, shape and composition from any area of a sample surface. Application-oriented AFA packages include: Automated Inclusion Analysis (metals/alloys cleanliness), Automated Mineral Analysis (with look-up tables for identification), Phase Identification Program (multiphase component solids), Fiber Analysis Software (fiber differentiation based on morphology), and Gun Shot Residue Analysis. RJ Lee Instruments: (412)744-0500, Fax: (412)744-0506.

• Spectra-Tech, Inc. demonstrated **OMNIC® AtI μ s™ Microscope Software**, an automated approach to FT-IR microscopy data collection and analysis by allowing the user to obtain more information about a sample in an efficient and easy manner - plus enhancing both spectral mapping and data collection activities. Also demonstrated was the **IR μ s™ II Molecular Microanalysis System**, which offers the highest level of performance and ease-of-use for the most demanding microspectroscopy experiments. The IR μ s is now coupled with Nicolet's OMNIC Software for advanced data processing capabilities. Spectra-Tech, Inc.: (203)926-8998, Fax: (203)8909.

• Featuring new applications for the "Tacky Dot Slide" system, SPI Supplies announced new applications for the product and new dot sizes for an even broader range of powder characterization work. Structure Probe's independent laboratory, featuring laboratory and consulting services in the microscopy field, have structured faster and more accurate powder characterization services based on the "Tacky Dot Slide" products. Also featured was the continually growing and expanding site on the WWW featuring the all-electronic SPI Supplies catalog of sample preparation equipment and consumable supply items for electron and light microscope laboratories. SPI Supplies: (800)2424-SPI, Fax: (610)436-5755.

• Topcon Technologies, Inc.'s new **SM-520 Field Emission SEM** makes field emission performance available at LaB₆ prices. It is especially suited for low kV, high resolution applications. The SM-520 FE SEM has Topcon's unique **Dual Control Feature**, which combines manual and computer operation. A standard image processor with frame averaging is also included with the SM-520 FE SEM, and it produces clear, crisp, noise-free images at 512, 1024, or 2048 pixel resolution. Topcon Technologies, Inc.: (201)261-5410, Fax: (201)262-1504.

• TopoMetrix introduces a new version of its near field scanning optical microscope (NSOM). Now researchers can add NSOM to their existing high-quality, commercial inverted optical microscopes and take advantage of the vast array of commercial filters, beam splitters, detectors, etc. NSOM breaks the diffraction limit barrier to spatial resolution. It offers all of the advantages of optical microscopy plus the extremely high resolution (<50 nm) of a scanning probe microscope. The new **Aurora II™** includes **AccuTune™** automatic tuning and **TruMetrix™** scanner linearization. TopoMetrix: (408)982-9700, Fax: (408)982-9751.

WDS APPLICATIONS SPECIALIST

Oxford Instruments Microanalysis Group, a leading manufacturer of x-ray microanalysis instrumentation, is seeking an applications specialist experienced in wavelength dispersive x-ray spectroscopy. Responsibilities include customer demonstrations, analysis of customer samples, customer training, and all other aspects of customer support. Based in Fremont, California, the position will require foreign and domestic travel. A bachelor's degree in the physical sciences and experience in wavelength dispersive spectroscopy is required. Experience in electron microscopy and PC/Windows operation is a plus. Please mail or fax a resume to:

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