NEW AND INTERESTING AT PITTCON 2005

The following exhibitors at the recent PITTCON 2005 meeting provided these short summaries of what they considered new and/or interesting at their booths on this year's equipment floor.

EDAX presents the latest version of **GENESIS software** including new features such as the Element Detective. The Element Detective creates a Maximum Intensity Spectrum using the maximum intensity found in a map data cube for each individual channel in the spectrum. Building a spectrum using the maximum intensity for every channel can facilitate determining and locating small phases and minor elements in a map which are often missed in a sum spectrum from all of the pixels in a map. The fully integrated LambdaSpec WDS software enables EDS and WDS spectra to be collected simultaneously for qualitative and quantitative analysis, allowing the user to combine data to improve quantification accuracies.

Micro-XRF - The Eagle III micro-XRF elemental analyzers use state of the art capillary optics, CCD video imaging cameras and motorized XYZ stage for non-destructive small spot analysis correlated with video imaging. Simultaneous elemental detection range from Na through U. Little or no sample preparation is required. Fully automated analysis is possible for independently targeted sample positions or imaging of elemental distributions. Quantification can be done without a standard or using EDAX' patented fundamental parameter software or with a standards suite for highest accuracy. Applications include forensics, failure analysis, coating thickness/composition measurement, quality control, particle/inclusion analysis, chemical imaging and much more. Ideal for small samples or localized analysis on large samples. For further information contact: Judy O'Loughlin, Tel: (201) 529-4880 E-mail: info.edax@ametek.com.

Veeco introduces **NanoMan II**, the most advanced scanning probe microscope (SPM) system for high-resolution imaging, high-definition nanolithography, and direct nanoscale manipulation. Its patented hybrid head combines the speed of a tube scanner with an integral flexure design ensuring XYZ orthogonality. Key benefits include lowest Z noise, enabling accurate imaging of ultra-flat surfaces, precise force-distance and molecular pulling capability, and the fastest scanning of any metrology scanner. The Nanoman II has nanolithography and nanomanipulation software built in. The system's user interface is intuitive and flexible, with an easy-to-use, point-and-click mode for control of the SPM probe position and motion. It also offers a programmable mode that enables easy and extremely accurate nanolithography of complex patterns. Finally, the NanoMan II supports a wide range of application modes and scanning techniques including the exclusive Torsonial Resonance Mode™ (TRmode). For more information please visit our web site at www.veeco.com or email us at sales@veeco.com.

4pi Analysis demonstrated two exciting new additions to its EDS systems software: **Interactive Live Quant** of energy dispersive x-ray spectra, and **Interactive Fast Mapping**. No longer does the user have to wait for an acquisition to complete before obtaining standardless- or standards-based quant results. Instead, quant results are displayed in real time as the spectrum collects. Interactive Fast Mapping enables the real-time interaction of element setup/selection during the collection of x-ray images. Start the acquisition, then decide at any time which element images to display using Manual ID and Auto ID of either the sum spectrum or maximum channel spectrum. The full x-ray spectrum at each pixel is saved, enabling the user to make adjustments live or re-examine saved x-ray maps off-line. 4pi also introduced its next generation hardware for x-ray spectrum and digital image acquisition: the Universal Spectral Engine (USE). The USE is a network-accessible multi-platform system that eliminates the need for a dedicated computer. Its integrated digital pulse processor interconnects seamlessly to all x-ray detectors, including Silicon Drift. Digital imaging is now 10 times faster with faster scanning and parallel acquisition of all signal sources, including EDS, SE, BSE, WDS, EBIC, and cathodoluminescence. Contact 4pi at 919-489-1757 or info@4pi.com.

Princeton Gamma-Tech showed their new **Premium Sahara Silicon Drift Detector** and demonstrated new features on their Spirit X-ray Microanalysis System. The Sahara SDDs feature high performance with no liquid nitrogen and no moving parts, making them vibration- and maintenance-free. The range of Sahara detectors include models for high resolution (129 eV) and extreme count rate (>100,000 cps!) with excellent light element performance. Compatible with all types of electron microscopes, and all Sahara detectors can be ordered with our unique Variable Z (VZ) interface guaranteeing optimum geometry, regardless of your SEM configuration. The latest release of Spirit software features new tools that make microanalysis faster and more accurate than ever before. For example, Spirit allows the operator to overlay an unlimited number of high contrast elemental maps with a high resolution SEM image. The result – unprecedented detail and an "intuitive" feel for sample composition. You'll also appreciate the speed of acquisition – X-ray maps build on the screen with each scan, immediately revealing the elemental composition of the sample. Line profiling, area spectra, Quant maps and phase maps are only a mouse click away, and our report generator automatically generates reports in Microsoft WordTM. Use our built-in MS templates, or design your own – Spirit is fully compatible with all Microsoft OfficeTM products. Call (609) 924-7310 or visit us at www.pgt.com

Protochips, Inc. uses the technology of semiconductor fabrication to manufacture products that enable advanced research in Microscopy and the Life Sciences. Our current product line includes **DuraSiNTM, support films** and meshes for electron and X-ray microscopy. DuraSiNTM Film and Mesh products are designed to meet the needs of microscopists needing support grids with materials durable to most chemicals and temperatures. Our films are robust enough to allow multi-analysis, including AFM and TEM using the same grid, reducing sample preparation time and increasing measurement accuracy. Perfect for fibers, particles, powders, colloids, polymers, aerosols and nanomaterials. Visit www.protochips.com for more information.

IXRF Systems, Inc.(Integrated X-ray Fluorescence Systems, Inc) has recently released an adaptable X-ray Fluorescence (XRF) product to the EDX/EDS Microanalysis community. IXRF currently offers fully-featured EDX/EDS microanalysis systems but brings to the SEM the benefits of traditional table-top XRF analysis; trace capabilities for higher Z elements (Na and above) can be 10-1000 times lower than that of EDX/EDS analysis. A greatly reduced background and more stable beam account for higher quantitative accuracy when using standards. Samples do not have to be coated and sample penetration depths exceed that of the electron beam by

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10 fold; this opens up analysis avenues for coating measurements and thin film analysis. When used inside the SEM, XRF applications stand to perform more efficiently than that of traditional table-top methods due to tighter source-sample-detector geometries as well as higher vacuum. When used in combination with EDX/EDS tools, the analyst will benefit from quality low energy/light element analysis via the electron beam as well as the greatly enhanced capa-

bility of XRF at the heavier end of the spectrum. The XRF additions may come packaged with IXRF's latest EDX/EDS tools or may be coupled with any existing EDX/EDS system. Virtually any scope may accommodate the addition depending on port availability. This product is exclusively offered by IXRF. SYSTEMS, INC.; it is the first and only of its kind.

INDUSTRY NEWS

The Cooke Corporation introduces a **high performance 12-bit CCD camera**, specifically designed for OEM applications, 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 -30ºC vs. ambient, standard interface IEEE1394a, optimal offset stability and control (^{2} 1 count). Ideal for HCS (High Content Screening), Cellular Imaging, Microarray Imaging, Hyperspectral Imaging, Fluorescence/Chemiluminescence Detection and Confocal Microscopy. Tel: 248 276 8820, info@cookecorp.com, www.cookecorp.com.

Princeton Gamma-Tech **Spirit upgrade package** gives new life to older SEMs. Are you ready to upgrade to digital performance, but don't have the budget for a new SEM? With PGT's Spirit Upgrade package you'll get state-of-the-art imaging and EDS without replacing your scope or detector. While analysis and capture electronics have made huge advances over the last 15 –20 years, basic column and chamber design have changed little. You can take advantage of this by replacing only the control and imaging electronics – and give your older instrument a performance boost that rivals many of today's instruments. By adding a Spirit system to your SEM, you'll get: Digital Scan Generation, rapid viewing, recording, and storage – no more film! High Speed Image Acquisition - up to 4096 resolution. Frame Averaging and Frame Integration (Frame Summing) increases resolution while decreasing noise. PGT report generator automatically generates reports in Microsoft WordTM. Analysis routines for Particle Size, Area Fraction, etc. Spirit software reads your SEM parameters and stores them with the image - eV, magnification, position, etc. Visit our website at www.pgt.com, email us at sales@pgt.com, or call us at (609) 924-7310.

Photometrics, a division of Roper Scientific, Inc., is pleased to **announce the acquisition of the assets of Optical Insights, LLC**. Photometrics. www.photomet.com) is the world's premier designer and manufacturer of high-performance CCD and EMCCD cameras for the life sciences. Optical Insights (www.optical - insights.com) is a leading innovator in the design, development, and manufacture of complex optical systems for a variety of spectral and polarization imaging applications. The ability to view individual spectral or polarization components of light generated from fluorescent samples in biological research is a natural extension of the quantitative light-detection technologies currently offered in this

market space. Rather than simply detecting the amount of light present in the course of a life sciences experiment, spectral and/or polarization information significantly enhances photometric data, thus improving the usefulness of the detected light. For more information, please contact: Patrick Lordi, 520.889.9933, vpsales@photomet.com.

Thermo Electron Corporation has significantly enhanced its **OM-NIC™ Atlμs™ 7.2 imaging software** for infrared and Raman microspectroscopy and imaging with the ability to analyze quantitative information from video and chemical images. This updated software tool is targeted at mid- to high-end researchers, microscopists and chemists in R&D, clinical pathology, forensics, drug discovery, QA/QC and failure analysis laboratories. The OMNIC Atlμs 7.2 software now provides a complete imaging solution for infrared and Raman microscopes with the addition of content analysis of both video and chemical images for particle dimensions and advanced image statistics. Images can also be reproduced through the added ability to pull information from the software's history, allowing users to easily recreate an image from raw data and processing steps. Spectral statistics allow users to group spectra and perform advanced statistics, as well as employing Principal Component Analysis to minimize the spectral contribution of undesired features while improving the signal to noise and the spatial resolution of the overall set of data. The OMNIC Atlμs 7.2 software automates the collection of spatially resolved spectra from Thermo's infrared and Raman microspectroscopy and imaging instruments including the imaging microscope, Nicolet™ Continuμm™ XL, which combines white light microscopy with advanced imaging. Vivid false-color images are created that allow chemical heterogeneity to be readily visualized and compared to visual features. Please call +1 800-532-4752, e-mail analyze@thermo.com or visit www.thermo.com/spectroscopy.

Wyatt Technology announced at Pittcon 2005 that its revolutionary **HPLC software system - ASTRA V** -now interfaces with Waters' Empower chromatography data software system. By incorporating ASTRA V capabilities with Waters' Empower software, Wyatt now offers the ultimate ease-of-use in chromatography data management. The use of light scattering technologies in regulated industries is also now facilitated with the 21 CFR Part-11 compliant ASTRA software. The ASTRA V software complements Wyatt's multi-angle light scattering detectors to make absolute molecular weight determinations a desirable alternative to traditional liquid chromatography methods. For more information on Wyatt Technology's new product innovations and services, please visit www.wyatt.com or e-mail info@wyatt.com.

Pacific Nanotechnology, Inc. announces **WIMS, the web based image management system** for microscopists the world over. There is an ever-increasing need for organizing, storing and distributing microscope images. On a routine basis, microscopes may generate hundreds of digital images in a single day. Image sizes may range from a few kilobytes to several megabytes. The Web Image Management System (WIMS) offer a powerful solution. With this software package, all of the information relating to images is stored in a relational database on a web site. The