

System combines ultraviolet microscopy and microspectroscopy



CRAIC TECHNOLOGIES

www.microspectra.com

Craic Technologies has combined UV microscopy with UV microspectroscopy in its QDI 2010 microspectrophotometer equipped with the optional QDI ImageUV package.

The system is aimed at applications in the flat-panel-displays, microelectromechanical-system and patterned-semiconductor industries, where organic and inorganic contaminants are often difficult to detect. Many contaminant materials are essentially invisible to common analytical techniques such as optical microscopy. Ultraviolet micro-imaging can quickly and non-destructively locate many contaminants. Ultraviolet microspectroscopy can then measure the electronic spectral characteristics of the contaminant to identify it.

The company claims the QDI2010 is the first ever system to combine both UV microscopy and microspectroscopy in a single tool. It can also be upgraded to enable UV, visible and near-infrared reflectance, transmittance and fluorescence microscopy and microspectroscopy.

Miniature spectrometer uses microelectromechanical systems

www.arcoptix.com

The ARCSpectro-NIR is a family of scanning Fourier-transform spectrometers that features an actuator based on microelectromechanical-system technology. The actuator enables precise and fast scans with one single detector. As a result, the ARCSpectro-NIR does not need an expensive near-infrared CCD.

The ARCSpectro-NIR products have no intrinsic wavelength-range limitations. This, claims the company, makes these spectrometers the only portable

spectrometer on the market capable of measuring from the visible to the near infrared in one shot with a single device (contrary to grating spectrometers). Also the ARCSpectro-NIR does not suffer from second- or third-order ghost spectral contributions. The family of ARCSpectro-NIR products includes: two-colour detectors (Si-InGaAs photodiode); silicon-pin photodiodes; and InGaAs-pin photodiodes (cooled and non-cooled).

Terahertz system is compact and requires no cryogenic cooling

www.emcore.com

The PB7100 Series is a frequency-domain system for characterization of samples in the frequency range of 100 GHz to 2.0 THz. The PB7100 system produces a swept continuous-wave source signal that is detected by a swept receiver. This approach overcomes the limitations of previous terahertz spectroscopy based on time-domain fast-Fourier-transform spectroscopy techniques and provides unmatched frequency accuracy, resolution and detection sensitivity in an easy-to-use automated laboratory instrument. The system relies on a heterodyne semiconductor laser hybrid photonic 'engine' to generate pure continuous-wave terahertz signals over a broad frequency range. This works in concert with a patent-pending low-noise terahertz detection technique to achieve unprecedented performance in a compact form factor without cryogenic cooling. In addition, EMCORE has an active development programme in terahertz technology and also develops customized solutions based on its extensive portfolio of intellectual property.

Ultraviolet-to-visible spectrometer is designed for productivity

www.perkinelmer.com

PerkinElmer Life and Analytical Sciences has introduced the LAMBDA XLS, a UV-visible spectrophotometer for quality assurance and quality control (QA/QC) and teaching laboratories, and the LAMBDA Bio, a UV-visible spectrophotometer designed specifically for biological science laboratories. Both the LAMBDA XLS and LAMBDA Bio are designed as low-cost, routine platforms with a number of pre-configured standard methods and the capability of adding customized methods, addressing a wide range of applications.

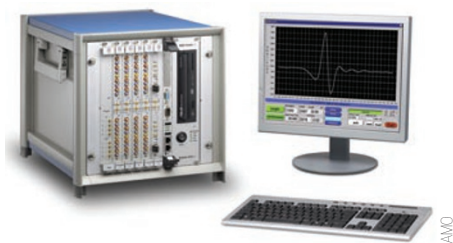
The LAMBDA XLS was designed with a focus on productivity and ease of use. The LAMBDA XLS and Bio models include a

large, clear, on-board display and robust, spill-resistant keypad. With its intuitive graphical interface and wide range of local language options, it enables users in manufacturing QA/QC, environmental, teaching and food-analysis laboratories to perform wavelength, scanning, concentration studies and biological assays with ease.

The LAMBDA Bio is pre-configured with standard methods, making it easy to use for various applications, including measurements of the concentration and purity of DNA, RNA and oligonucleotides, protein assays, and cell density.

Both the LAMBDA XLS and LAMBDA Bio have no moving parts and feature an ultralong-lifetime xenon lamp that helps to ensure robustness, maximum uptime and low cost of ownership. The high-quality split-beam optical design provides high stability and run-to-run reproducibility for added assurance of results.

Spectacular noise reduction in time-resolved spectroscopy



AMO

www.amo.de

German company AMO has launched its measurement and control system AIXSCAN for time-resolved spectroscopy. In time-resolved spectroscopy signal levels are usually very low and hidden in a noisy background. A short measurement time is crucial for unstable experimental set-ups and jitter-free control of the time delay is needed to make full use of the laser pulses.

The company claims the AIXSCAN system can increase the signal-to-noise ratio by a factor of 10⁹, increase the bit resolution of high-speed data acquisition, reduce the measurement time, replace the box-car of lock-in amplifiers, and give jitter-free control of fast time-delay stages.

The AIXSCAN system is a multichannel data-acquisition system capable of 100 million samples per second. It applies AMO's signal-averaging technology FASTSCAN to realize transient recording of repetitive signals. Averaging of up to 1 million transients by real-time data processing effectively extracts data from noise. AIXSCAN also controls static and fast time-delay stages and shakers for jitter-free laser-based pump-probe measurements.