

RESOURCES

*A summary of new products and services
for materials research...*

Computer-Controlled Optical Extensometer:

The 200XF from The Cooke Corporation converts the distance between two illuminated and contrasting gauge marks of a tension test sample into a measurement signal proportional to strain (1–500 mm total strain) with a frequency range of 0–20 kHz. Settings for light sensitivity, target mode, bandwidth, and search mode are controlled separately for each of the two measurement channels, and the system is compatible with an IBM or NEC PC.

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Gas Analysis Software:

Balzers' QUADSTAR™ 421 software, which operates under Windows 3.1, allows users to simplify operation of a mass spectrometer and define the amount of interfacing necessary with a gas analysis system. The software is available in modules for existing hardware and can be customized for system calibration, gas stream selection, automatic measurement, and data logging. Applications include monitoring of semiconductor sputtering processes, leak detection, background gas analysis, or CVD and etching applications.

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Lab Temperature Controller for Dual Reactions:

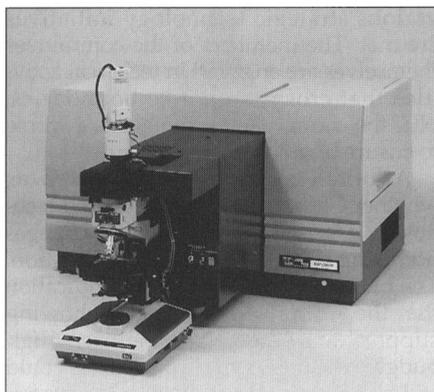
The TC2-1000 from I²R, Instruments for Research and Industry, uses two independent thermocouple sensors to simultaneously control two reactions at different temperatures. The controller, which is part of the THERMO-WATCH® line, can be used with type J, K, or T thermocouples for straight-line proportional control. Reactions are controlled independently by varying the power input to each reaction. The programmable unit can be used on the benchtop or on rack-mounted lab frames.

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Intelligent Gravimetric Analyzer:

Hidden Analytical's IGA can be used to study gas-solid interactions under diverse pressure-temperature environments. The PC-controlled system may be preprogrammed to perform unattended measurements over days or weeks. The reactor vessel's operating pressure ranges from 10⁻⁶ mbar to 20 bar, with temperature control options from -150 to 1000°C. The system is available with a four-stream mass flow control module for measurement of multicomponent isotherms and characterization of catalytic reactions.

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Fast Analytical Raman Spectroscopy System:

The Explorer Series I from Instruments S.A. uses laser and filter technology, spectroscopic components, and data handling software to provide analysis results. The reduced-footprint system is suitable for R&D labs, production control labs, or contract analytical labs. Applications include chemicals and polymers, semiconductor materials, pharmaceuticals, and environmental monitoring.

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Handheld Infrared Camera:

FLIR Systems' Prism SP enables users to pinpoint a specific area within the scene being viewed and accurately measure temperature at that point. Color output also provides temperature gradient analysis of the entire image, and the camera can detect thermal energy through obstructions such as smoke and dust or through total darkness. Existing Prism Viewer cameras from FLIR Systems may be upgraded to include Prism SP features.

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Spectrally Resolved Scanning Photoluminescence System:

Scat-Spec Imageur from DCA Instruments offers two modes of scanning photoluminescence spectroscopy to characterize compound semiconductor materials. One mapping mode analyzes radiation via a 25cm grating monochromator, allowing the full spectrum to be recorded for each point of the scanning area. The other mode uses selective filters to analyze radiation and transmit a broad band of the spectrum to the detector. Both modes have a double resolution feature of the 4-in. scanning stage to permit inspection of wafers using 50 μ m steps or mapping on small areas using 1 μ m steps. Standard spectral range is 600–2,500 nm.

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Optical Analyzer: The *n* & *k* Analyzer from *n* & *k* Technology simultaneously and unambiguously determines the thickness, optical constants, and energy bandgap of semiconductor and dielectric films. The optical constants (the refractive index *n* and extinction coefficient *k*) are determined from 190 to 900 nm. Applications include a-C:H, a-Si:H, SiN_x:H, and SiO_x:H films deposited on various substrates. Once established, the *n* and *k* spectra and the bandgap energy are correlated to other film characteristics.

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Linear Array Camera: The INTEL CAM UDM 5000 from The Cooke Corporation provides hardware programming for a conditioned signal that is a direct measurement of the position of a high contrast edge to a resolution of 1/5000 with a data rate of 1,800 bits/s. The camera functions in backlit or frontlit situations, and optics can be modified for measurement of materials up to 2500°C. Six measurement modes may be programmed, and interchangeable flange-mounted lenses determine the measurement range. Various illuminators and laser collimators are optional.

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Multistream Selector Valves: Hidden Analytical's Proteus valves can perform sample switching between up to 40 sample streams and a single-point gas analyzer. The valves use a self-compensating face seal arrangement with a high integrity seal and low wear rate for high frequency automated operation. Response times are less than 1 second, and flushing delays and memory problems are eliminated. Actuation occurs by direct drive stepper motor with integral encoder for closed-loop position control. Operation is from vacuum to 4 bar and up to 120°C.

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