

Focus on semiconductors and software

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new products

Focus on semiconductors and software

The descriptions of the new products listed in this section are based on information supplied to us by the manufacturers. PHYSICS TODAY can assume no responsibility for their accuracy. For more information about a particular product, visit the website at the end of the product description.

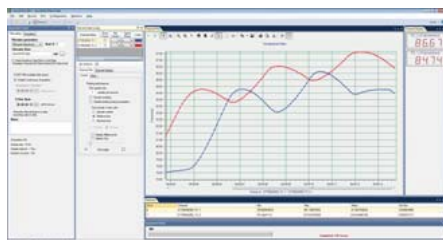
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AFM semiconductor characterization system

Bruker has introduced a new atomic force microscope configuration called the Dimension Icon SSRM-HR (scanning spreading resistance microscopy–high-resolution). It integrates the large-stage, low-drift, and fine force control of the Dimension Icon platform with the SSRM application module and is designed for HR semiconductor characterization, SSRM-DIA (diamond) probes, and environmental control. Incorporating the AFM platform with an environmental control system capable of 1-ppm gas purity and high-vacuum control provides repeatability and high spatial resolution in semiconductor carrier profiling. The system can detect buried gate oxide layers as thin as 5 Å. After samples are seamlessly transferred from a high-vacuum sample preparation chamber, their oxygen and water content are controlled at the 1-ppm level during AFM imaging. *Bruker Nano Surfaces Division, 112 Robin Hill Road, Santa Barbara, CA 93117, <http://www.bruker.com>*

Data acquisition application software

Data Translation has announced that its new software application, QuickDAQ 2013, is available free of charge and supports all the company's data acquisition modules. Single-channel and advanced two-channel FFT analysis add-ons are offered to build onto the capabilities of the base package. QuickDAQ 2013 fea-



tures out-of-the-box measurement data support; the ready-to-measure application software allows users to configure, acquire, log, display, and analyze data from any of Data Translation's more than 150 data acquisition modules. Many customizable features are included to meet individual needs. Engineers and scientists can apply FFT algorithms embedded in the signal analysis software to the measured data in order to view performance characteristics. *Data Translation Inc, 100 Locke Drive, Marlboro, MA 01752-1192, <http://www.datatranslation.com>*

Laboratory automation control platform

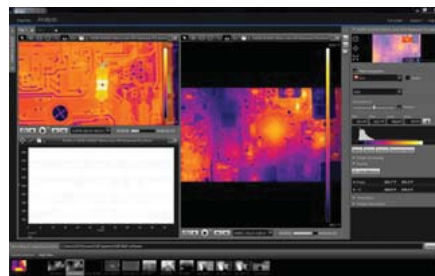
Aerotech's new Ensemble LAB control platform can automate laboratory and light industrial manufacturing applications. The full-color, touch-screen display enables quick access to core functionality, and an intuitive tabbed interface provides single-press access to setup and operation screens. A front-



panel USB port allows for connection of a keyboard and other peripherals to help in the creation of complex program sequences. Ensemble LAB is designed for applications for which ease of operation is desired without sacrificing overall system capability. The front-panel interface allows operators to quickly execute simple operations such as jogging, homing, and moving to fixed positions. For more complex operations, onboard memory stores programs that can be accessed from the front panel or through remote control. *Aerotech Inc, 101 Zeta Drive, Pittsburgh, PA 15238, <http://www.aerotech.com>*

IR camera control for high-speed imaging

The new ResearchIR thermal measurement, recording, and analysis software from FLIR Systems has been designed for R&D and advanced science applications. The software provides acquisition, diagnostic, and data-sharing tools that include customizable, savable workspaces. Users can arrange how



imagery, data, charts, and plots are displayed. ResearchIR connects directly to FLIR cameras via USB, Firewire, Gigabit Ethernet, and Camera Link for fast viewing of thermal snapshots and movie files. It supports such options as pre- and post-trigger recording based on user-configured start and stop times, scene temperature thresholds, and frame rates. ResearchIR performs real-time image analysis with an extensive set of measurement modes and features zoom and pan for closer examinations. Preset sequencing and superframing let users analyze scenes with large temperature differences or targets with rapid thermal dynamics. *FLIR Systems Inc, 27700A Southwest Parkway Avenue, Wilsonville, OR 97070, <http://www.flir.com>*

Catalyst quantification

The Hiden Catlab integrated microreactor and mass spectrometer (MS) system now features LABview-based control. The user-definable software can establish MS data acquisition parameters; input gas or vapor flow through up to eight mass flow controllers; record



furnace temperature and ramp rates; and provide valve switching functions, including pulse gas injection for chemisorption measurements. The temperature profile defines the trigger points to change gas composition, inject gas pulses, and stop or start data acquisition. The Catlab system is engineered for combined reactor and MS system operation, but it can easily be decoupled to enable operation of the mass spectrometer as a standalone laboratory and process gas analyzer. Reaction products are monitored directly from the sample position via the primary sampling interface embedded within the 1000 °C fast-response furnace. A secondary interface then provides a decoupling point for offline MS operation. *Hidden Analytical Inc, 37699 Schoolcraft Road, Livonia, MI 48150, <http://www.hiddenanalytical.com>*

Temperature controller card

Lake Shore now offers a four-channel option card for models 336 and 350 temperature controllers used for low-temperature physics research in university and commercial laboratories. The new card increases the controllers' utility by doubling the number of inputs.



The model 3062 card adds four additional input channels for cryogenic temperature sensors that can be used for monitoring or control. The scanner option channels can be configured for diode, negative temperature coefficient resistor, or positive temperature coefficient resistor sensors. The model 3062 scanner card can easily be installed in the field, with no need to send the controller back for upgrade. The scanner card is supported by model 336 firmware version 2.3 and later and model 350 firmware version 1.1 and later. To update models 336 or 350, users can visit <http://www.lakeshore.com/products/pages/firmwareupdater.aspx> to download the free Lake Shore firmware updater software and the most up-to-date instrument firmware. *Lake Shore Cryotronics Inc, 575 McCorkle Boulevard, Westerville, OH 43082, <http://www.lakeshore.com>*

Mathematics software

Maplesoft has announced a new release of its Maple mathematical computing software for education and research in mathematics, engineering, and the sciences. Maple 17 introduces more powerful mathematics and a large collection of enhancements that support the creation of interactive Maple math apps for teaching and learning. The apps can be used not only in Maple 17 but through Maplesoft's recently announced Möbius Project initiative, which provides new ways to bring the power of Maple to more people. Maple 17's functionality includes solutions to a new class of differential equations, advancements in solving systems of equations, an extensive package for working with algebraic groups, new signal processing tools, expanded support for differential geometry, and new tools for physics. *Maplesoft, 615 Kumpf Drive, Waterloo, Ontario N2V 1K8, Canada, <http://www.maplesoft.com>*

Software for creating Origin Project files

OriginLab has released a 64-bit version of its Orlab DLL (dynamic-link library) for creating Origin Project (OPJ) files. Tailored to the needs of scientists and engineers, the data analysis and graphing capabilities of Origin and OriginPro have the flexibility and functionality to manage complex data analysis and graphing tasks. Hardware and software vendors and instrument manufacturers can work with large volumes of data, export them as OPJ files, and save data and associated metadata using Origin's flexible and hierarchical project structure. Metadata can be saved into Origin workbooks, worksheets, and columns and used for graph annotation and analysis. *OriginLab Corporation, One Roundhouse Plaza, Suite 303, Northampton, MA 01060, <http://www.originlab.com>*

Low DC current measurements

A new feature that RBD Instruments has added to its Actuel data logging software enables multiple 9103 USB picoammeters to be synced and may open up new applications for low DC current



measurement. The 9103 USB picoammeter is designed to provide bipolar DC current measurements in the range of picoamps to milliamps. An ASCII-based command structure enables users to quickly incorporate the 9103 into their custom software application. The 9103—named for the working current range from 10^{-9} amp to 10^{-3} amp—is a tool for engineers and researchers who need to measure low DC currents economically and plot the current versus an applied voltage. The Actuel software included with the 9103 displays the measured current in a virtual panel meter on the PC monitor. Users can change all functions, such as current range, sample time, bias, and grounding. Data can be logged and graphed in a variety of output options. *RBD Instruments Inc, 2437 Northeast Twin Knolls Drive, Suite 2, Bend, OR 97701, <http://www.rbdinstruments.com>*

Integrated spectroscopy and imaging software

Craic Technologies designed its LambdaFire microspectroscopy and imaging software package to collect, analyze, and process both microspectra and images from Craic microspectrophotometers

