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New Products

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. To facilitate inquiries about a particular product, a Reader Service Card is attached inside the back cover of the magazine.

Lawrence G. Rubin

Focus on Software

Visualization Software

The Numerical Algorithms Group's IRIS Explorer version 5.2 is now available for the Mac OS X platform. The IRIS Explorer is a system for visualizing scientific data; it has a programming interface that enables users to build applications from software modules, a design that facilitates maximum flexibility in visualization development. The point-and-click application development environment shortens the time needed to develop and prototype solutions. Applications can be distributed across a network that can include a variety of platforms, such as Microsoft Windows, Linux, SGI, Sun, IBM, and HP, in addition to Mac OS X. Explorer also allows researchers to share a visualization pipeline with users on other machines in a heterogeneous network. *The Numerical Algorithms Group Inc, 1431 Opus Place, Suite 220, Downers Grove, IL 60515-1362, <http://www.nag.com>*

www.pt.ims.ca/6085-131 or circle #131

Software for Mass Spectrometry

Cerno Bioscience has announced MS Integrity, a software system that can improve the results from any mass spectrometer whether it be unit mass instruments such as quadrupoles, time-of-flight, or ion trap designs. By combining novel calibration techniques with the practical application of modern mathematical principles, the system can routinely improve the mass accuracies of unit-mass resolution instruments to as high as 5 ppm. MS Integrity can also improve the mass accuracy of high-resolution MS systems by $3 \times$ or better. On all instruments, significant enhancements in signal-to-noise ratio and thus lower detection limits are also achieved. It is possible that the application of advanced data processing algorithms such as those used in MS Integrity can be extended to other areas of research. *Cerno Bioscience LLC, 5 Science Park, Suite 13,*

New Haven, CT 06511, <http://www.cernobioscience.com>

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Image Analysis Upgrade

Sensors Unlimited Inc (SUI) has introduced enhanced software that allows control of the high-speed windowing functions on the company's NIR Windowed Snapshot MiniCamera SU320MSW-1.7 RT. The stand-



alone, executable software options include full control of four preset regions of interest or windows in the center of the frame; alternatively, variable windows can be established. The user may select the window's position, size (from 320×256 pixels to 16×16 pixels), and square or rectangular shape. The PC-based image acquisition, analysis, storage, and retrieval software includes line profiles, region histograms, and spot meter region-of-interest display features. This software is free when paired with any SUI shortwave IR camera. *Sensors Unlimited Inc, 3490 US Route 1, Building 12, Princeton, NJ 08540, <http://www.sensorsinc.com>*

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CAD Tool Suite for MEMS

SoftMEMS has released MEMS Pro 5.1, a computer-aided-design tool suite for the design and analysis of MEMS and their associated electronics and packaging. Features include mixed MEMS/IC schematic capture and simulation, full custom mask lay-

out capabilities, 3D-model generation and visualization, behavioral model creation, and links to 3D-analysis packages. The software provides improved interoperability with finite-element solvers that offer more output formats for 3D-geometries, better material properties handling, and improved meshing capabilities. The link between 2D- and 3D-layout has been improved. MEMS Pro 5.1 has enhanced libraries for system-level models that include expanded support for mixed electronic/optical devices and a methodology for design for manufacturing. *SoftMEMS*, 14109 Capri Drive, Los Gatos, CA 95032, <http://www.softmems.com> www.pt.ims.ca/6085-134 or circle #134

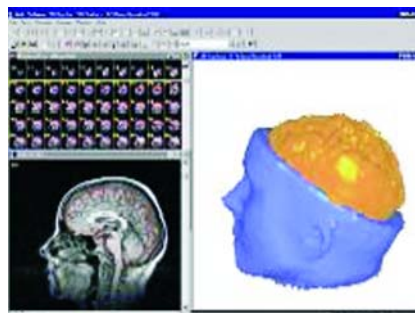
Multiphysics Modeling Software

COMSOL has announced FEMLAB 3.1i, a multiphysics modeling package that is now available in English, French, German, Italian, Korean, Japanese, Swedish, and Chinese. With the local language support, users all over the world can more easily take advantage of the features in the recently released version 3.1 of this software. Among those features are 64-bit computational technology for large modeling projects and faster and more memory-efficient solvers. The new version uses add-on packages that address specific problem areas such as electronic cooling, biological heating effects, and MEMS. The software has a new plot type for particle tracing, in which particle trajectories can be visualized in fluid flow and electromagnetic fields, and improved movie generation and animation on all platforms. *COMSOL Inc*, 1 New England Executive Park, Suite 350, Burlington, MA 01803, <http://www.comsol.com>

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Medical Modeling and Imaging

3D Doctor from Able Software Corp is a vector-based, 3D-imaging, modeling, and measurement software for magnetic resonance imaging, CT, positive emission tomography, microscopy, and volumetric images. The 3D-surface-modeling algorithm has been enhanced to provide faster rendering and high-quality models. 3D Doctor creates 3D surface models and volume rendering from 2D cross-section images in real time on a PC, and it can calculate volume and make other 3D measurements for quantitative



analysis. It can be used in surgery and treatment planning, surgical simulation, and 3D rapid prototyping applications. 3D CT and MRI images can be resliced easily along an arbitrary axis. Misaligned slices can be automatically or semiautomatically aligned using the program's image alignment functions. *Able Software Corp*, 5 Appletree Lane, Lexington, MA 02420-2406, <http://www.ablesw.com>

www.pt.ims.ca/6085-136 or circle #136

Text Analysis and Data Visualization Tool

Thomson ResearchSoft has developed RefViz 2, a text analysis and data visualization software that is designed to provide researchers with a powerful way to explore reference literature visually. It analyzes large numbers of references by thematic content and presents an overview of the main topics discussed in the reference set. RefViz 2 introduces the company's Reference Retriever, a search interface that queries multiple data sources simultaneously and eliminates duplicates automatically. It simplifies data gathering and analysis and provides more flexibility in handling visualizations. References can be moved easily among the company's bibliographic management products. RefViz 2 is designed for Mac OS X and Microsoft Windows NT/ME/2000/XP. *Thomson ResearchSoft*, 2141 Palomar Airport Road, Suite 350, Carlsbad, CA 92009 <http://www.researchsoft.com>

www.pt.ims.ca/6085-137 or circle #137

RF and Microwave Design Software

Eagleware-Elanix has introduced Genesys 2005, a new release of its RF and microwave design suite. The software package includes WhatIF, a new simulation technique that analyzes spurious performance of intermediate frequencies; Cayenne, a time domain

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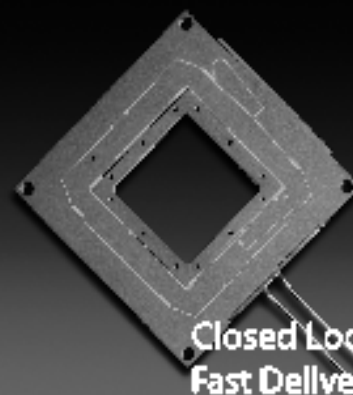
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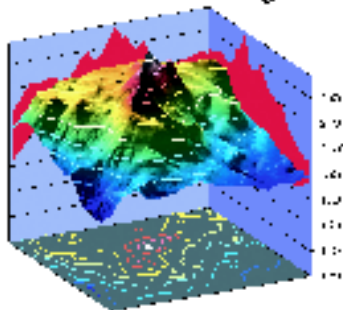
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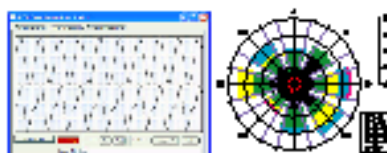
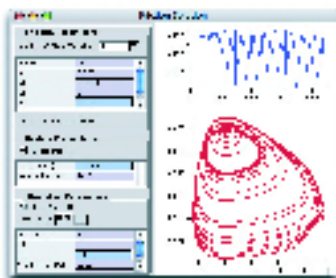
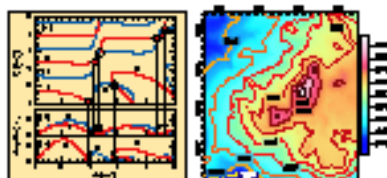
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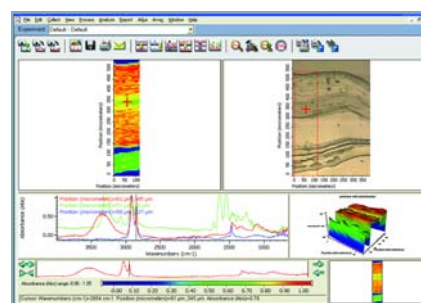
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simulator; Amplifier, a synthesis module that facilitates the design of linear, low-noise RF amplifiers; and Mixer, a synthesis module that allows the user to design and analyze mixer configurations using a variety of topologies as starting points. There are also enhancements to the linear, nonlinear, and system architecture simulators, a revamped user interface, a filter synthesis that supports generation of different filters, and an oscillator synthesis for closed-loop time domain analysis. *Eagleware-Elanix Corporation, 3585 Engineering Drive, Suite 150, Norcross, GA 30092, <http://www.eagleware.com> www.pt.ims.ca/6085-138 or circle #138*

Imaging Software

Thermo Electron's OMNIC Atlas 7.2 software for IR and Raman microspectroscopy and imaging has the ability to analyze quantitative information from video and chemical images for particle dimensions and advanced image statistics. The new software automates the collection of spatially resolved spectra from the company's IR and Raman instruments, including the imaging microscope Nicolet Continuum XL, which combines white light microscopy with



advanced imaging. OMNIC Atlas 7.2 also has comprehensive 2D- and 3D-visualization capabilities; full automation for the collection of images; point, line, and area maps; fast processing of large images; chemometric tools for image and data processing; and the ability to copy spectra and images into other Microsoft Windows applications for reporting. *Thermo Electron Corporation, 5225 Verona Road, Madison, WI 53711, <http://www.thermo.com/spectroscopy> www.pt.ims.ca/6085-139 or circle #139*

Optical-Simulation Software

ASAP 2005 from Breault Research Organization is the next generation in optical-simulation software. It enables product designers to accurately

predict the real-world performance of bio-optic, imaging, and coherent systems; automotive lighting; displays; light pipes; luminaires; and medical devices. The software comes with new modeling and analysis capabilities, several new graphical user interface features, and interoperability enhancements such as the seamless file transfer from mechanical engineering environments to the ASAP optical engineering environment. ASAP 2005 can import and export complex field distributions for the finite-difference, time-domain code FDTD Solutions by Lumerical Solutions Inc. The combined programs can model a wide range of optical systems. *Breault Research Organization Inc, 6400 East Grant Road, Tucson, AZ 85715, <http://www.breault.com> www.pt.ims.ca/6085-140 or circle #140*

Physics Teaching Software

Lenox Softworks has announced VideoPoint Physics Fundamentals, a new version of its VideoPoint, which is a video analysis software package that allows users to collect position and time data from digital video in the form of "video points." The Physics Fundamentals program is tailored primarily to high-school and introductory college physics students and teachers. It features a simplified interface and only the most commonly used analysis options taken from the original VideoPoint. Its main goal is to demonstrate the basic concepts in physics using video analysis. The software includes sample analysis, related movies, and activity guides for topics such as kinematics and dynamics. The new package is integrated with the company's VideoPoint Capture so that teachers can customize the program to fit their curriculum by creating their own movies. *Lenox Softworks, 114 Main Street, Lenox, MA 01240, <http://www.lsw.com> www.pt.ims.ca/6085-141 or circle #141*

Viscosity Measurements

Malvern Instruments has added the SV-10 Vibro viscometer to its range of material-characterization instruments. The viscometer gives rapid, accurate viscosity measurements in the range of 0.3–10 000 centipoise. The main application works in conjunction with the company's Zetasizer Nano to improve the accuracy of size and zeta-potential measurements.

When measuring size by dynamic light scattering or by zeta potential that uses microelectrophoresis, the accuracy of the result depends on the accuracy of the dispersant viscosity used. The SV-10 determines the viscosity by vibrating at constant amplitude two gold paddles immersed in the sample; the damping effect on the vibration is related to its viscosity. *Malvern Instruments Inc., 10 Southville Road, Southborough, MA 01772, <http://www.malvernusa.com>* **www.pt.ims.ca/6085-142 or circle #142**

Nondestructive Microspectral Analysis

CRAIC Technologies has introduced the QDI 2000 microspectrophotometer for use in the UV, visible, and near-IR wavelength regions. Designed for spectral analysis of microscopic samples as small as 1 μm , the instrument can measure by transmittance, absorbance, reflectance, fluorescence, and polarization. Due to its cooled CCD array detector, the QDI 2000 can make these measurements in as little as a millisecond with very low noise. It also incorporates high-resolution digital imaging. The microspectrophotometer can also be supplied with optional packages, such as thin-film thickness measurement software, statistical analysis routines, instrument automation, and NIST-traceable standards. *CRAIC Technologies, 2400 North Lincoln Avenue, Altadena, CA 91001, <http://www.microspectra.com>* **www.pt.ims.ca/6085-143 or circle #143**

Mass Spectrometer

Comstock has developed the miniTOF II, a linear, orthogonal-injection, electron-impact-ionization, time-of-flight mass spectrometer. It incorporates a flight path of about 40 cm from repeller to a discrete dynode-type detector that is both sensitive and durable. A time-to-digital converter on a PCI card converts to digital form the time elapsed between repeller time and detection at the end of the flight. The time resolution of the system clock (bin width) is 10 ns, the time count is 32 bits long, and the event count capacity used in the PC is 64 bits. The miniTOF II has a guaranteed mass resolution $M/\Delta M$ about 600, a mass range of 1 to about 600 nominal, a peak-shift stability of less than 0.02%, and a minimum detection limit of less than 5 ppm without

preconcentration. *Comstock Inc., 1005 Alvin Weinberg Drive, Oak Ridge, TN 37830, <http://www.comstockinc.com>* **www.pt.ims.ca/6085-144 or circle #144**

Ultrasonic Flaw Detector

Panametrics-NDT, a business of R/D Tech Instruments, has released the EPOCH LT, a handheld, digital, ultrasonic flaw detector for weld inspection, bond detection, thickness gauging, and general flaw detection. The thin 1-kg instrument features automated transducer calibration and an internal numeric data logger that stores up to 500 calibrations and 10 000 thickness measurements with an expanded memory option. The EPOCH LT has a high-resolution LCD with full- or split-screen views and a fast minimum display-update rate of 60 Hz. It also provides a display freeze mode that holds waveform sound-path data, peak memory, and an RF display mode. The internal rechargeable battery has a nominal operating time of 6–8 hours. *Panametrics-NDT, 48 Woerd Avenue, Waltham, MA 02453, <http://www.panametrics-ndt.com>* **www.pt.ims.ca/6085-145 or circle #145**

On the Web

The Artera Group has made available Rev the Web, a free internet acceleration service that enables web surfers to access the internet five times faster through a dial-up line and three times faster through a broadband connection. It also accelerates the delivery of web-based email, attachments, and file downloads. *Artera Group Inc., 20 Ketchum Street, Westport, CT 06880, <http://www.revtheweb.com>* **www.pt.ims.ca/6085-146 or circle #146**

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