

NEW PRODUCTS

Focus on software, instrumentation, and data acquisition

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 its description. Please send all new product submissions to ptpub@aip.org.

Andreas Mandelis

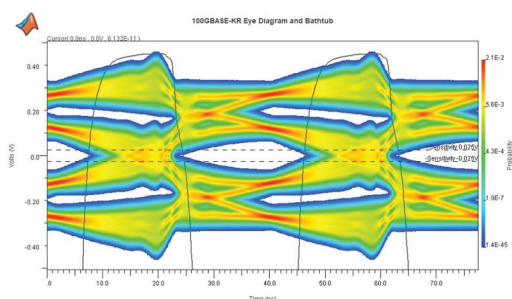
Software for parametric test system

According to Tektronix, its KTE V7.1 software, which is now available for the Keithley S530 Series Parametric Test System, will help accelerate semiconductor-chip manufacturing. The upgraded software and hardware enable high throughput and single-pass testing—users can test up to 1100 V on any pin with a single probe touchdown. Compared with version KTE V5.8, KTE V7.1 reduces test times by more than 10%. Options available for the first time with the KTE V7.1 release include a parallel test capability that optimizes the efficiency of all system resources and a high-voltage capacitance test option for emerging power and wide-bandgap applications. A new test-head design gives users the flexibility to employ a variety of probe cards, and the recently released System Reference Unit shortens calibration time to less than 8 h. **Tektronix Inc**, 14150 SW Karl Braun Dr, PO Box 500, Beaverton, OR 97077, www.tek.com



Diaphragm liquid pump

KNF has expanded its series of smooth-flow liquid pumps that combine the low pulsation of gear or centrifugal pumps with the strengths and advantages of diaphragm pumps. The new KNF FP 70 model delivers up to 850 mL/min while producing pressures up to 29.4 psig (2 bar) under continuous operation. Thanks to the patented four-point valves, the KNF FP 70 is reliably self-priming, even at very low motor speeds. It can safely run dry, handles liquid transfer gently and cleanly, and is available with chemically resistant flow-path materials. Integrated pulsation-dampening technology eliminates the need for additional pulsation-dampening elements and tubing. The versatile FP 70 is available with a selection of motors from high-end brushless DC to lower-end DC. Other options include a selection of hydraulic connections and various flow-path materials. Applications for the FP 70 include analytical instruments, medical technology, and 3D printing. **KNF Neuberger Inc**, 2 Black Forest Rd, Trenton, NJ 08691-1810, <https://knf.com>



Toolbox provides functions and apps for designing high-speed serial and parallel links. R2021b also includes major updates to the Symbolic Math and Lidar Toolboxes, Simulink Control Design, and other products in the areas of predictive maintenance, deep and reinforcement learning, and statistics and machine learning. **The MathWorks Inc**, 1 Apple Hill Dr, Natick, MA 01760-2098, www.mathworks.com



Software-defined instrumentation platform

The Moku:Pro system from Liquid Instruments is a software-upgradeable platform that integrates multiple stand-alone devices and allows users to dynamically switch between them. Based on the field-programmable gate array, the Moku:Pro hosts nine instruments with real-time measurement capabilities: an oscilloscope, DC–600 MHz lock-in amplifier, proportional-integral-derivative controller, phasemeter, arbitrary waveform generator, data logger, spectrum analyzer, frequency response analyzer, and waveform generator. Advanced analog-to-digital converter blending technology ensures that each instrument functions with optimal sensitivity from RF to acoustic frequencies. Though designed to support research in physics and engineering in fields such as aerospace and semiconductors, Moku:Pro's instrument suite is particularly suitable for photonics applications, including spectroscopy, microscopy, metrology, gravitational-wave detection, active laser stabilization, and quantum computing. **Liquid Instruments**, 740 Lomas Santa Fe Dr, Ste 102, Solana Beach, CA 92075, www.liquidinstruments.com

Mathematical programming software

MathWorks is now offering Release 2021b (R2021b) of its MATLAB and Simulink software. In addition to many updated features and functions, new capabilities in MATLAB include code refactoring, block editing, and the ability to run Python commands and scripts from MATLAB. Simulink updates let users run multiple simulations for different scenarios from the Simulink Editor and create custom tabs in the Simulink Toolstrip. R2021b introduces two new products that support wireless communications: The RF PCB Toolbox enables the design, analysis, and visualization of high-speed and RF multilayered printed circuit boards; and the Signal Integrity

NEW PRODUCTS

RAN analytics software

Nemo 5G RAN Analytics software from Keysight is a fully automated cloud-based solution designed to speed analysis of a mobile operator's 5G radio access network (RAN) performance and to streamline data processing, reporting, and analytics. Based on a centralized, web-based data management platform, the software combines data analytics built on artificial intelligence and machine learning frameworks with an intuitive user interface to efficiently manage large amounts of data captured in a live 5G network. Nemo 5G RAN Analytics is available as software as a service. It connects with Keysight's other Nemo solutions, including the Outdoor 5G NR Drive Test Solution, a laptop-based software for measuring the real quality of the end user's experience; the Cloud Remote Monitoring Solution; and the Handy handheld measurement software. When combined, Keysight's Nemo solutions enable users to quickly and reliably upload data captured in the field and share a common set of analytics reports across the organization. **Keysight Technologies Inc**, 1400 Fountaingrove Pkwy, Santa Rosa, CA 95403-1738, www.keysight.com



Software for signal creation and analysis

Rohde & Schwarz and Cadence have collaborated to produce a tool for signal creation and analysis to help speed the development of RF components used in wireless communications and radar design. The R&S VSESIM-VSS functions as an addition to the Cadence Visual System Simulator (VSS) software. It expands the capabilities of the VSS software by adding realistic signals for both simulation and testing, thereby increasing simulation accuracy and simplifying the design process. The tool combines the signal-generation and signal-analysis functions from two R&S soft-

ware tools for testing operative circuits, modules, and devices—the WinIQSIM2 simulation software and the VSE vector signal explorer—and adds plug-ins for Cadence electronic design automation tools. The data sink plug-ins provide access to the signal at any point in the design process. The R&S VSESIM-VSS supports all major standards such as 5G and the latest Wi-Fi evolutions. **Rohde & Schwarz GmbH & Co KG**, Muehlendorfstrasse 15, 81671 Munich, Germany, www.rohde-schwarz.com

Say NO to



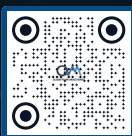
- ⊗ Starting from scratch
- ⊗ Wasting time on AWGs, Lock-ins, digitizers, and signal generators
- ⊗ Waveform loading time
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- ⊗ Dead time and unpredictable things

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Motion-control platform

Aerotech has upgraded its Automation1 motion-control platform, adding several new drives and other improvements to version 1.2. Linear-Theta gantry control, which is now included in the Software-Based Machine Controller (iSMC), enables more flexibility and better performance for gantries. The iSMC's new C language Application Programming Interface library lets users easily integrate any or all Automation1 functions within their custom applications. CADFusion has been updated to export to Automation1's AeroScript programming language format, which lowers implementation risk and delivers improvements in part quality and

throughput. AutoFocus, designed to simplify sensor integration and increase system performance in surface profiling and scanning applications, is now standard on all Automation1 drives. Also standard is the Enhanced Throughput Module, which improves the positioning performance of high-dynamic motion systems by directly measuring the unwanted motion of the machine base and communicating it back to the controller. *Aerotech Inc, 101 Zeta Dr, Pittsburgh, PA 15238-2811, www.aerotech.com*

High-speed waveform-generator-and-digitizer platform

Spectrum Instrumentation has added eight high-speed models to its range of hybrid-NETBOX products. The hybridNETBOX instrumentation platform combines a multi-channel arbitrary waveform generator (AWG) and a digitizer in a single portable unit. Capable of simultaneous signal generation and acquisition, the instruments are suitable for applications involving stimulus-response or closed-loop-type testing. The new models offer a choice of two or four AWG channels combined with the same number of digitizer channels. The AWG channels can generate almost any waveshape. Models are available with output rates of either 625 MS/s or 1.25 GS/s and signal bandwidths up to 400 MHz, with 600 MHz optional. For signal acquisition, the digitizer channels provide 16-bit resolution and sampling rates of 180 MS/s or 250 MS/s, or 14-bit resolution and sampling rates of 400 MS/s or 500 MS/s. Both the AWG and the digitizer feature a flexible clocking system that allows users to select almost any output or sampling-rate setting, which enables them to generate or acquire signals at exactly the required speed. *Spectrum Instrumentation Corp, 401 Hackensack Ave, 4th Flr, Hackensack, NJ 07601, <https://spectrum-instrumentation.com>*



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The Department of Physics at the University of Notre Dame invites applications for a **tenure-track position in theoretical nuclear physics**. The Notre Dame nuclear theory group currently includes three faculty members with broad interests in nuclear astrophysics and nuclear structure.

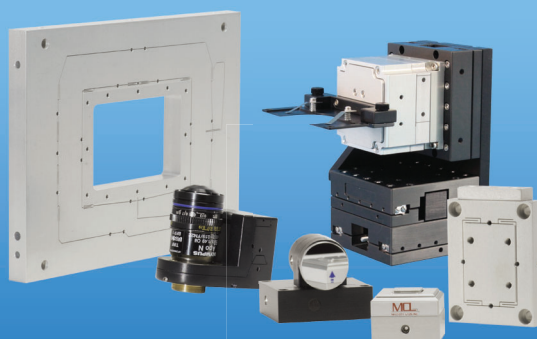
We seek faculty committed to developing and sustaining an environment of inclusive excellence in research, teaching, and service. The successful candidate must demonstrate the ability to develop a highly successful research program, attract independent research funding, teach effectively at both the graduate and undergraduate levels, and engage with students from diverse backgrounds. Applicants must have a Ph.D. or equivalent advanced degree. Salary and rank will be commensurate with the successful applicant's experience and research accomplishments.

Submit applications at <https://apply.interfolio.com/97827>. Review of completed applications will begin on December 31, and applications will not be accepted after January 17.

ND Physics is committed to diversifying its faculty and encourages applications from women and members of traditionally underrepresented groups.

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NEW PRODUCTS

Thermal analysis software

Waters Corporation has made available TRIOS AutoPilot software for use with the thermal-analyzer product line of its TA Instruments division. The software is designed to help materials science laboratories conducting R&D and quality control to automate and standardize workflows. By simplifying the process of making analytical measurements, the software can improve laboratory efficiency, ensure product quality, and reduce risks, according to the company. TRIOS AutoPilot is the first thermal analysis software to be based on Google's visual programming interface, Blockly. With that intuitive open-source software, users can create custom scripts and configure them for thermal-analysis applications without having to learn a higher-level programming language. The software comes with prewritten express scripts for automating many common procedures such as sample loading, instrument calibration and verification, and formatting and exporting data files into laboratory information management systems. The OneTouch interface guides operators with video and text prompts. **Waters Corporation**, 34 Maple St, Milford, MA 01757, www.waters.com



Data-acquisition software

CAS DataLoggers has introduced the ProfiSignal 20 (PS20) software package from Delphin Technology. The software allows data collected with Delphin data-acquisition systems to be visualized and analyzed on a personal computer, tablet, or smartphone. The Go version of PS20 can be used for quickly visualizing, monitoring, and archiving measurement data. It includes configurable single and multiaxis trend charts and multi-

track diagrams that allow measurement data from multiple channels, both digital and analog, to be displayed synchronously; statistical functions for data analysis; and data export for third-party software applications. The Basic version of PS20 extends the capabilities of Go with a range of configurable control and monitoring widgets that can be used to create user-defined dashboards. A key innovation in PS20, the Scan and Check function, allows projects to be built with a custom QR code. When a smartphone scans the code, it displays live data for the project, including any custom visualizations. **CAS DataLoggers**, 8437 Mayfield Rd, Unit 104, Chesterland, OH 44026, www.dataloggerinc.com

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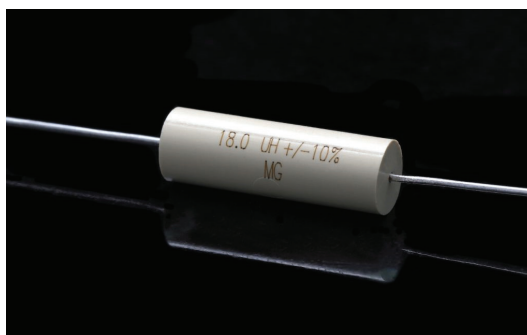
Hydraulic data logger

Webtec has unveiled the versatile HPM7000 handheld hydraulic data logger, the successor to its long-standing HPM6000 model. The HPM7000 lets users working in R&D or doing testing, repairs, or inspections connect up to 48 sensors and create different hardware configurations simply by adding or changing input modules. Test-stand technicians can monitor and record variables such as flow, temperature, pressure, current, rotational speed, and contamination, for example, following the repair or rebuilding of pumps, motors, pistons, or valves. R&D users developing and analyzing hydraulic machinery such as tractors, excavators, and industrial systems

can use the HPM7000 to collect traditional flow, temperature, and pressure readings and seamlessly integrate new J1939 or CANOpen sensors of different types or manufacturers into a single data-logging device. The compact data logger can be powered by a battery or an external power supply and used as a portable or fixed device. **Webtec LLC**, 1290 E Waterford Ave, St. Francis, WI 53235, <https://en.webtec.com>

Nonmagnetic RF inductors

Gowanda Electronics designed its 28MG series of nonmagnetic RF through-hole (leaded) inductors to address the need to achieve inductance values of up to 18 μH . The series is suitable for use in MRI and specific types of x-ray equipment and other applications where the presence of magnetic materials could compromise system performance. Those include telecommunications; instrumentation; and equipment for laboratory analysis, electronic testing, aviation, and navigation. The performance range provided by the 60 discrete parts within the 28MG series includes inductance from 1.2 μH to 18 μH , DC resistance from 0.079 Ω to 4.15 Ω , and DC current rating from 315 mA to 2400 mA. Gowanda's nonmagnetic surface mount and through-hole inductors provide relative permeability of less than or equal to 1.00003. The 28MG series' operating temperature range is -55°C to 125°C . The 28MG inductors are epoxy encapsulated to withstand all types of reflow soldering and protect the environment. **Gowanda Electronics**, 1 Magnetics Pkwy, Gowanda, NY 14070, www.gowanda.com **PT**



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PRECISION MEASUREMENT GRANTS

The National Institute of Standards and Technology (NIST) anticipates awarding two new Precision Measurement Grants that would start on 1 October 2022, contingent on the availability of funding. Each award would be up to \$50,000 per year with a performance period of up to three years. The awards will support research in the field of fundamental measurement or the determination of fundamental physical constants. The official Notice of Funding Opportunity, which includes the eligibility requirements, will be posted at www.Grants.gov.

Application deadline is tentatively **February 2022**.
For details/unofficial updates see: physics.nist.gov/pmg.

For further information contact:

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