

NEW PRODUCTS

Focus on software, data acquisition, and instrumentation

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



Low-pulsation pumps

KNF has expanded its Smooth Flow pump series by adding two customizable models, the FP 7 and FP 25, which are suitable for demanding applications. With a built-in dampener to provide smooth, low-pulsation flow that minimizes friction in tubing and prevents bubble formation, the FP 7 and FP 25 reliably transfer fluids without the

need for additional equipment. They feature four-point valves for reliable self-priming, even at reduced motor speeds, and a digitally adjustable brushless DC motor for precise pump control and pinpoint matching to individual electronics. The FP 7 has a nominal flow rate of 70 ml/min, a minimum suction height of 2 m of water column (mH_2O), and a maximum pressure of 10 mH_2O . The FP 25 offers a nominal flow of 250 ml/min and a minimum suction height of 3 mH_2O . The pumps are also available in high-pressure versions: both the FP 1.7 and FP 1.25 achieve nominal pressures up to 60 mH_2O . **KNF Neuberger Inc**, 2 Black Forest Rd, Trenton, NJ 08691, <https://knf.com>

Signal generation software

Siglent designed its SigIQPro software to simplify general and standards-based signals creation for the development and verification of wireless signal devices. The PC-based software generates a rich variety of IQ (quadrature) signals and supports Bluetooth, internet of things, custom orthogonal frequency-division multiplexing, and more. It simplifies the test setup, reduces simulation time, and lowers test costs. Users need only set the basic parameter information of the signals to generate the required waveforms quickly and easily. SigIQPro's user-friendly interface provides insights and displays a wide array of performance metrics. The software is compatible with the company's SSG5000X-V series vector signal generator and SDG7000A series multifunction dual-channel arbitrary waveform generator. Waveforms can be transferred directly to the signal generators via GPIB, USB, and LAN. **Siglent Technologies NA Inc**, 6557 Cochran Rd, Solon, OH 44139, <https://siglentna.com>



Mathematical programming software

New functionality in Release 2024a (R2024a), an update to MathWorks' MATLAB and Simulink software, streamlines the development of artificial intelligence and wireless communications systems. The Satellite Communications Toolbox, which provides standards-based tools for designing, simulating, and verifying satellite communications systems and links, has been updated to enable users to model scenarios. It can be used to design physical-layer algorithms for RF components and ground station receivers, generate test waveforms, and perform golden reference design verification. R2024a's major updates to MATLAB and Simulink tools include the Computer Vision Toolbox, which provides algorithms, functions, and apps for designing and testing computer vision, 3D vision, and video processing systems; the Deep Learning Toolbox for designing and implementing deep neural networks; and the Instrument Control Toolbox, which connects MATLAB directly to instruments such as oscilloscopes, function generators, signal analyzers, power supplies, and analytical instruments. **The MathWorks Inc**, 1 Apple Hill Dr, Natick, MA 01760, www.mathworks.com



Compact parallel-kinematic multiaxis motion platform

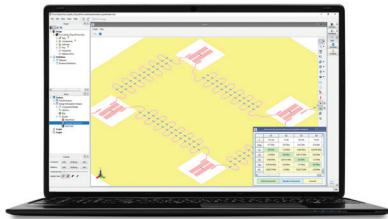
Physik Instrumente (PI) has unveiled the A-361, a planar XY-Theta-Z nanopositioning stage based on air bearings and direct drive motors. Unlike conventional multiaxis stages, the A-361 uses only one moving platform shared among its three axes. Despite featuring an integrated vacuum chuck to accommodate wafers or other samples, the stage has an ultralow profile of only 40 mm. With its noncontact components, the A-361 ensures frictionless operation and thereby offers ultrahigh precision, superior

performance, and a maintenance-free, virtually infinite service life. The built-in position-locking capability is useful for operations that require high stability with zero servo jitter. The contact-free operation and lack of lubricants make the stage suitable for clean-room applications. If precision motion in six axes is needed, as is often the case in photonics alignment and semiconductor inspection applications, the A-361 stage can be integrated with the company's A-523 Z Tip/Tilt stage to create a six-degrees-of-freedom nanopositioning system only 100 mm high. **Physik Instrumente LP**, 16 Albert St, Auburn, MA 01501, www.pi-usa.us

NEW PRODUCTS

Python package for digitizers and generators

Spectrum Instrumentation developed its `spcm` open-source Python package to make programming its current test and measurement instruments faster and easier. Python is simple and versatile and offers an extensive collection of libraries and frameworks, such as NumPy, that can accelerate programming development cycles. The `spcm` package lets users take advantage of the Python language by providing a high-level, object-oriented programming interface designed for the company's digitizer, arbitrary waveform generator, and digital input-output products. It includes the full source code and detailed examples. The Python package safely handles the automatic opening and closing of cards, groups of cards, and Ethernet instruments and the allocation of memory for transferring data to and from those devices. It offers sampling rates from 5 MS/s to 10 GS/s and supports the use of real-world physical quantities and units, such as 10 MHz, so users can directly program driver settings in their preferred unit system. Available on GitHub, `spcm` is free of charge under the MIT license. **Spectrum Instrumentation Corp**, 401 Hackensack Ave, 4th Fl, Hackensack, NJ 07601, <https://spectrum-instrumentation.com>



Quantum parameter measurements

Keysight has introduced QuantumPro, which the company says is the electronic design automation industry's first integrated workflow tailored for the seamless design of superconducting qubits. QuantumPro consolidates five essential functionalities—schematic design, layout creation, electromagnetic analysis, nonlinear circuit simulation, and quantum parameter extraction—into Keysight's PathWave Advanced Design System 2024 software platform. It translates traditional microwave outputs into easily adjustable quantum pa-

rameters. The electromagnetic solution uses the method of moments to provide a cost-effective simulation that can accelerate the design cycle. Instead of solving for the electric field in the full volume, the method of moments solves only for the currents on the metal surface. Co-simulation and parametric analysis enable seamless tuning of qubits and resonators. The new release also includes an alpha feature for a Python console that lets users control workflow, modify workspaces, automate tasks, and customize the user interface. **Keysight Technologies Inc**, 1400 Fountaingrove Pkwy, Santa Rosa, CA 95403, www.keysight.com

PT



MadAFM™ - Multimodal AFM



High performance
Closed loop nanopositioners
AFMView® software

Tabletop design, simple installation

Options: c-AFM, STM, MFM & more

sales@madcitylabs.com • www.madcitylabs.com

GradSchoolShopper

presented by
AIP American Institute of Physics

GRADUATING SOON?

Find your future at **GradSchoolShopper.com**
the most comprehensive directory of grad
programs in the physical sciences.

Browse by sub-field

Sort programs by acceptance rate &
application deadline

Get direct access to program faculty &
research areas, and more!

Visit **GradSchoolShopper.com**
to get started!

