

Pittcon Showcases Latest in Lab Innovation

A Specialty Gas Report Review

The 64th Annual Pittsburgh Conference and Exposition on Analytical Chemistry and Applied Spectroscopy — Pittcon 2014 — was held from March 2–6 at McCormick Place in downtown Chicago, IL. More than 16,200 conferees and exhibitor personnel gathered from around the world to show off the newest lab-related technology and products.

The annual event always draws a diverse crowd, and 2014 was no exception. First-time attendees made up 36 percent of the conferee number. Twenty-six percent of the attendees were from outside the United States. Attendees included lab managers, scientists, chemists, researchers, and professors representing industrial, academic, and government labs.

The busy exposition floor accommodated 935 exhibitors from 32 countries who hosted 1,763 booths displaying the latest innovations in laboratory science. Included in this were 119 first-time exhibitors.

Pittcon itself offered new technology and amenities to those who participated. Featured was a Twitter Café; Tweet-Ups; a social presence on LinkedIn, Facebook, and Twitter; and a dedicated hashtag for the event. A new mobile app allowed users to view the program in its entirety, and to schedule appointments from their mobile devices.

Throughout the conference and expo, the Employment Bureau and Employer Information Center helped connect job seekers with hiring companies. And for the second year, the co-location of Food Labs Conference, organized by Innovative Publishing and Food Safety Tech, was held in conjunction with Pittcon.

Next year, be sure to join Pittcon from March 8 – 12, 2015 at the Ernest N. Morial Convention Center in New Orleans, Louisiana.

Airgas

On-call at Airgas' Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy booth was Doctor Chromatography, otherwise known as Frank Kandl, Product Manager for Specialty Gas Equipment. A quick quiz allowed visitors to test their knowl-

edge of helium vs. hydrogen as they are used in GC analysis. Airgas specialty gas experts provided a sneak peek at Airgas' new gas manual, "The Chromatographer's Guide to Gas and Gas Delivery Systems," which Kandl co-wrote with Reginald Bartrom.

The newly developed resource guide provides detailed information on the requirements needed to design and construct the gas delivery systems used in gas chromatography (GC) and other high purity analytical applications.

The guide provides in-depth expertise in selecting the correct gas purity, understanding how purity is determined, and how purity affects applications. It also explains how proper component selection can ensure process accuracy, extend component life, and create necessary consistencies. Additionally, the guide details laboratory gas safety codes needed for compliance and offers an extensive reference section on the safe handling of gases, including an at-a-glance troubleshooting section that sets forth performance issues, gas stream contaminants, and possible causes and corrective actions.

Erlab



Erlab focuses on the research and development, design, and manufacturing of cutting-edge toxic gas air filtration in the laboratory. At Pittcon, the company introduced its Halo Lab Air Change alternative. An alternative to high air change rates, Halo continuously processes and treats the air while returning clean air back to the lab. The laboratory-grade molecular filtration system contains Neutrodine, a powerful ac-

tivated carbon mixture combined with a pre-filter that captures a large variety of airborne contaminants which, left untreated, could represent a potential health hazard.

A series of light pulsation signals provide lab occupants with the assurance that the air is always being cleaned. Integrated with each Halo unit a web user interface portal can be accessed through a network-assigned IP address providing real time status on air quality and Halo unit conditions via any smartphone, tablet, or computer. Halo provides healthier air for your laboratory by safely capturing chemicals while saving energy.

Gow-Mac

GOW-MAC® Instrument Co., close to unveiling two new products, showcased their line of high performance gas analysis analytical instruments. These instrument are designed for anyone involved with the detection, analysis, production, or supply of gases within the global industrial, medical, and specialty gases industries, and include gas chromatographs, trace gas, and total hydrocarbon analyzers.

Kin-Tek



Kin-Tek showed off its new FlexStream™ Humidification Module. The FlexStream™ Humidification Module adds variable levels of humidity to trace gas mixtures produced by the

FlexStream™ system. Typically, the unit can be used to add adjustable humidity levels between 20% and 90% RH (though not all levels can be achieved at all flows).

The FlexStream™ system uses Trace Source™ permeation tubes to create trace concentration gas mixtures by mixing the output from the permeation tube with a clean dilution gas. Humidity is added by splitting that dilution flow into two parts. One part remains dry and passes over the permeation tube to mix with the permeate. The other part is saturated with water. The two parts are mixed, and the proportion of wet/dry gas determines the relative humidity. The FlexStream™ internal computer sets both the dilution flow needed to achieve a specific concentration, and the proportion of wet gas needed to create the required humidity level.

The technique used to add moisture to trace concentration mixtures is critical. If the mixture is bubbled through water, or even makes surface contact with liquid water, its concentration may be changed by loss of the component to the water. In the FlexStream™ system the trace concentration mixture contacts only water vapor, and flows through inert materials.

Norgren



Norgren is one of the largest suppliers of motion and fluid control components and systems, and a milestone in their growth is the recent investment in Analytical Flow Products (AFP), with a portfolio of innovative chromatography valves and accessories. AFP is an innovative manufacturer of precision diaphragm and rotary valves, fittings, and tubing for gas and liquid chromatography instrumentation.

The Norgren booth featured an impressive array of products. Notable was the Sample Stream Selection Valves, DV Series (DV3/6 and DVS), which emphasized the leak prevention capabilities of the company's products. Whether used for injection, isolation, or flow diversion, the sample stream selection valves' revolutionary design optimizes the flow path by providing no dead-volume, individual port control, and pneumatic or electrical actuation. When these valves are attached to a multi-port sample stream, it allows the operator to take an analysis from any port even at extreme pressures up to 2,000 psi without contaminating the entire sample, and does not have to be sequential.

Temp Shield

Temp Shield showcased prototypes of their next line of Cryo-Gloves, including pink gloves to support breast cancer awareness. They were getting customer feedback at the show in order to test out and work on improvements in their grip technology. They are focusing in particular on the gloves used in labs and in industrial applications. Additionally, Temp Shield is focused on adding face shields, which were on display, and oxygen monitors.

Thermo Scientific

New Options for Thermo Scientific's Trace™ 1300 Series GC system were on view at the Thermo booth. The TRACE 1300 Series GC system is designed to conserve helium usage, automate sampling gas workflows, perform flame photometric detection, and allow for the use of multiple detectors simultaneously.

The new options for the platform include the Instant Connect Helium Saver module, designed to reduce helium consumption an average of 80 percent, for significant cost savings during the analytical run or when idle, compared to a non-equipped instrument. Instant Connect design lets the user easily install and replace modules without tools.

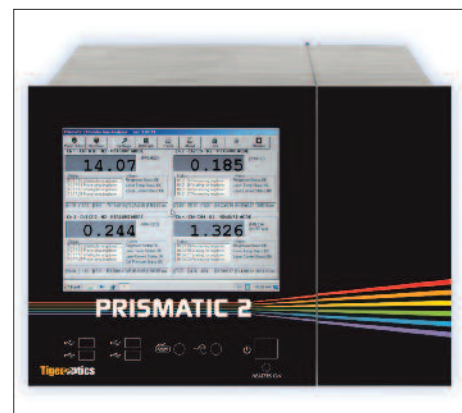
The high-capacity TRACE 1310 auxiliary oven, with multi-valve, multi-column capacity, enables the use of up to four conventional detectors simultaneously. This is expected to be particularly useful for chemical and petrochemical applications. A dedicated Instant Connect flame photometric detector finds traces of sulfur, phosphorous, or tin-containing species. Food and environmental testing are targeted major applications. And an Instant Connect gas sampling valve module is

designed for automating sample gas analysis workflows, and introduces precise amounts of gas samples directly into the capillary or packed columns.

The TRACE 1300 Series GC and the recently released Thermo Scientific ISQ Series single quadrupole GC-MS systems can now be controlled by the Thermo Scientific Dionex Chromeleon chromatography data system, designed to streamline the path from samples to results by simplifying workflows.

"These new capabilities reflect our ongoing efforts to empower GC customers to maximize laboratory productivity without compromising performance," said Massimo Santoro, Thermo Fisher Scientific GC Marketing Manager. Existing TRACE 1300 Series GC instruments are compatible with these new instant connect modules, which can be simply plugged into the mainframe.

Tiger Optics — Prismatic 2™ Multi-Species Gas Analyzer



Tiger Optics LLC introduced its Prismatic 2 multi-species analyzer at the Pittcon Conference and Expo. The Prismatic 2 tops its award-winning predecessor by packaging the sensor and electronics — previously housed in two boxes — in a single unit that requires half the space of the system that garnered "Best of Show" and Golden Gas awards at Pittcon 2010. Those prizes were awarded by *Gases & Instrumentation International* magazine.

With its ability to measure parts-per-million to parts-per-trillion of multiple analytes, the Prismatic 2 provides a critical tool for use in laboratory research and industrial settings where continuous gas monitoring is essential. The device can help ensure the quality of high purity hydrogen necessary for research into alternative energy sources, such as hydrogen fuel cells.

Methane, moisture, carbon monoxide, carbon dioxide, ammonia, and hydrogen sulfide are among the species frequently selected for trace analysis. Any four such analytes can be measured simultaneously in a variety of background gases. Tiger Optics can customize the Prismatic 2 for specific analytes, matrices, and ranges.

With developmental support from the National Science Foundation, the Prismatic 2's multi-species analysis incorporates Brewster's angle prism retro-reflectors in a single sensing system that utilizes Tiger Optics' field-proven technology known as Continuous Wave Cavity Ring-Down Spectroscopy (CWCARDS). Tiger's patented technology offers absolute accuracy, with no external calibration required. As with all Tiger Optics devices, the Prismatic 2 helps customers manufacture and develop new processes and products more efficiently, thereby reducing waste, improving yields, and increasing profits.

Xylem



In conjunction with highlighting their market solutions approach at Pittcon 2014 this year, Xylem rolled out a number of new products across multiple brands. Xylem's YSI and OI Analytical showcased new products, as did Xylem's Bellingham + Stanley and ebros brands.

OI Analytical presented a poster titled, "De-

tection of Low-Level Sulfur Compounds in Spearmint Oil Using the Pulsed Flame Photometric Detector (PFPD)." Their patented Model 5380 Pulsed Flame Photometric Detector (PFPD) represents the latest advance in flame photometric detector design, optimizing selective detection of sulfur, phosphorus, and 26 other compounds.

From traditional FPD methods to additional, harder-to-perform applications, the PFPD can be configured for a wide variety of methods with improved results. The PFPD provides a 10–100x increase in signal-to-noise and a 10x increase in selectivity over traditional FPDs while requiring minimal maintenance and decreased gas requirements.

The 5380 PFPD consists of a 5380 Detector assembly, 5380 Detector Controller, pneumatic components located either in the Detector Controller or in the gas chromatograph (GC), and WinPulse user interface software. ■

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