Renovation and modernization accelerate innovation

Skalar Analytical houses production and lab under one roof

By Vincent Hentzepeter | Photos by Foodnote | Translation by Word's Worth

"The whole renovation project started in March 2019 and was completed the following winter. All the while, we had to keep running our business as usual," said Rob van Turnhout, Sales Manager for the Netherlands and Belgium at Skalar Analytical. "When a property across the street became available, the management decided to buy it to house all our offices and to convert our existing location into a production and testing site only. Apart from the 400 square meters of space that was freed up by moving the offices, we also extended it by an extra 1200 square meters. The building was gutted. All interior walls were taken down and new floors were put in. We doubled our lab space and transformed it into a modern facility. Currently, our lab employs a permanent staff of 20. Our production department, helpdesk, technical services and sales reps got a lot more room, too. Those departments employ about 60 people. Including the back office, there are 150 employees in Breda. And we're still growing!"

Talent

After the renovation, the company did a lot of hiring. "We expanded our workforce with a large group of young talent who are eager to team up with the experienced core team and help Skalar

Skalar integrated its R&D and labs, doubling its lab space in the process.

grow," said Van Turnhout. "This gives us a healthy balance between fresh ideas and valuable knowledge acquired through years of experience. New employees profit from this experience. People learn from each other and keep each other on their toes." In light of Skalar's continuing growth, there is always room for highly motivated people with the right skills. As Van Turnhout put it: "We're always on the lookout for talented people with a chemistry or engineering background who are ready for a challenge and who like to travel."

Single locatione

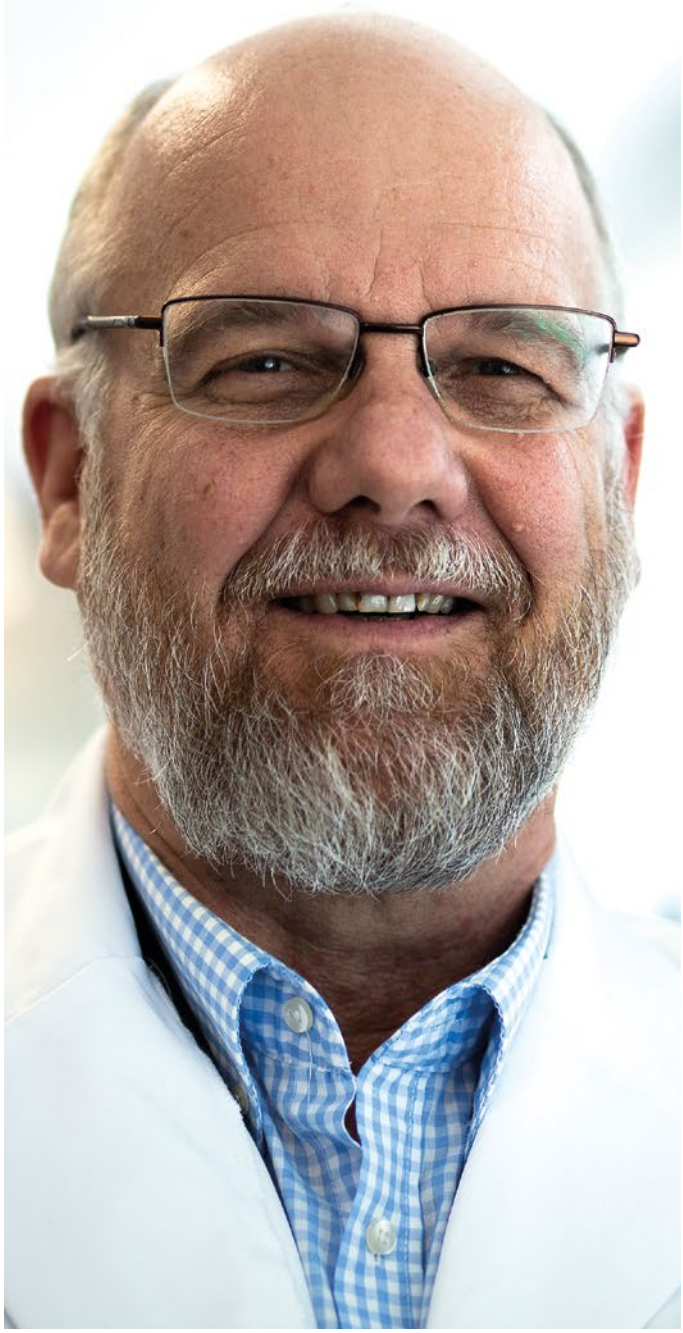
Logistically speaking, the renovation was also a major step forward. "We can now produce and test robotic analyzers on the same premises. Before, production was in a different location down the street. Everything is now in one location. We've invested in a big freight elevator to carry the robotic analyzers and other equipment from the ground floor to the top floor where they'll be tested in the lab. This saves a huge amount of time." The lab layout is spacious, with a separate room in the back right-hand corner that houses the application lab. "That's part of our R&D department, where new equipment and analysis methods are developed. And we also have a separate demo room now, where we host customers for demonstrations and training."

Discrete environmental analyzer

One section of the lab has been set aside for a new analyzer. The BluVision discrete analyzer is one of Skalar's latest innovations. It was developed to address the changing needs of labs in the environmental analysis market. Last year, it was ready to market. "Environmental labs are specifically looking for an analyzer that can handle discrete analysis of a large variety of water samples for various parameters, in a fully automated process, of course. The BluVision is highly versatile, but has a relatively small footprint," said Van Turnhout. An earlier version of the analyzer never left the R&D department. "We never brought the first generation to market, because the technology wasn't ready for high throughput, which is part of what makes this a worthwhile investment for labs. We achieved that with the cuvette wheel. The principle behind the technology is a large pipetting station with a cuvette wheel, 100 sample positions and 32 positions for reagents. It dispenses a sample and color reagent in a cuvette, measures the absorption and delivers the test results."

Rob van Turnhout, Sales Manager at Skalar Analytical:

"Our new premises and modern facilities have increased our efficiency and enable us to better serve our customers worldwide."



Lower-level detection

It's as simple as that, yet it outsmarts the competition. For example, this analyzer can detect lower concentrations than any other discrete analyzers currently on the market. Because environmental regulations keep getting stricter, that is a big plus, according to Van Turnhout. "The BluVision uses disposable cuvette blocks, but ones with a 15-millimeter path length. This longer optical path length enables lower-level detection, and that's exactly what many labs want, as our market research tells us. The need to detect lower levels has everything to do with stricter norms. Extra path length translates into a lower light intensity and a stronger signal when leaving the cuvette. The analyzer detects as little as 1 ppb, that's 1 microgram of nitrogen per liter."

A fume extraction system and separate pressurized compartments for samples and reagents help to lower the detection limits even further. "This prevents fumes from contaminating any samples. It can detect ammonium, in any case, with even more accuracy than any other analyzer on the market. NEN-ISO 15923 describes the determination with this technology and our analyzer stays well under the detection limit."

Robust and high-capacity

The analyzer is a real workhorse. "It's robust and designed to analyze a variety of sample types and matrices with a low detection limit." The disposable cuvettes were a conscious choice. "Most environmental labs prefer them. If you opt for flow-through cells or for cleaning and reusing cuvettes, you lose speed, because you need to wait for the rinse cycle to end. You also increase the risk of cross-contamination if you want to detect many high-low variations in level."

The BluVision's sample capacity is big. The cuvette wheel contains 160 testing positions, while the autoloader can hold another 480 test positions ready to load. "The analyzer automatically loads the waiting cuvettes into any empty test positions in the tray to a maximum of 640. It can handle about 150 analyses per hour with a single reagent and a single sample type. You can also add cuvettes during analysis and the BluVision can even run at night to increase lab capacity and extend the working hours of the lab."

Automated sample preparation

Over the years, automation has become Skalar's trademark. The company started with the robotic automation of pH, EC, Biological and Chemical Oxygen Demand (BOD and COD), and over time it gradually included ever more options. Automating sample preparation is the next step. "It's no longer just the actual analyses that are being automated. The industry is now looking to automate the whole sample preparation process," Van Turnhout said. "That's because sample prep is considered the most laborious factor in labs. To maintain speed, you need to overhaul the preparation phase." To illustrate, he mentioned water labs that want to put the sampling containers they use to collect samples in the field directly into their analyzers without first having to decant the

samples into cups. “Capping and decapping the sample tubes has been automated. This usually requires some customization, because labs often use a particular type of sample tube for determining pH, EC, alkalinity, turbidity, color, and so on. Even laborious manual titrations can be automated. With the additional benefit of improving accuracy. We can integrate third-party peripherals, for instance, or connect with our customer’s existing lab equipment. That’s the next efficiency improvement in lab automation.”

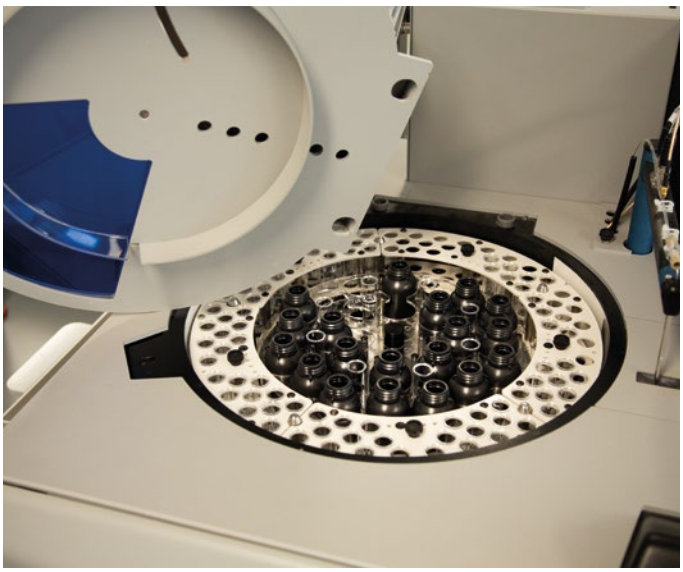
Beer analysis during brewing

Skalar’s new lab has various automated lab set-ups on display. Van Turnhout showed one for a brewery that not only analyzes the end product; it also automatically prepares the beer samples. All these applications have been integrated into the design, Van Turnhout explained while pouring a beer from a bottle at the test stand. “This piece of equipment can be installed directly in the brewery’s quality control lab. The greatest benefit is that the analyses can be done during the production process. The automated analyzer degasses, defoams and analyzes the beer. The only thing the operator needs to do is to fill a beaker with beer, press a button and the analyzer takes it from there. Typical beer parameters such as bitterness, pH, color, sulfite content and Free Amino Nitrogen (FAN) can be determined in close proximity to the brewing process. It’s an alternative for flow analysis, including sample preparation, and can be run by process operators.” This combines Skalar's extensive robotic automation know-how with its years of wet chemistry experience and perfected chemistries according all relevant international norms.

‘Automating sample preparation is the next step’

Future-proof

All the renovating and modernization will mean big changes for Skalar in the next few years, Van Turnhout said. “We’re going to solidify and expand our position in the lab world by automating the sample preparation procedures of various analyses and by continuing to sell our discrete analyzer and our wide range of other products, like robotic analyzers, TOC/TN analyzers and automatic wet-chemical analyzers. At the same time, we’ll continue to improve our applications and analyzers and to develop new applications in close consultation with our customers. In other words, innovation coupled with great customer support and service. Many of our analyzers have found their way to labs specialized in environmental, agricultural and beverage analyses. We’re also considering broadening our horizons. There appear to be great opportunities for our products, particularly in the food industry. Our new premises and modern facilities have increased our efficiency and enable us to better serve our customers worldwide. We’re ready for whatever the future brings!”



Above: Mike Zegers, Product Specialist Discrete Analysis, demonstrates the BluVision, Skalars discrete analyzer for environmental analysis.

Middle: Inserting cuvettes, which can even be done during a run.

Below: A fume extractor and separate pressurized compartments for samples and reagents prevent fumes from contaminating the samples.