

**rotronic**  
MEASUREMENT SOLUTIONS

**BECKER**  
REINRAUMTECHNIK

**weisstechnik**  
a schunk company

**ortner**  
cleanrooms unlimited

**pure<sup>11</sup>**  
clean room  
consumables

**PPS**  
PFENNIG PROFI SYSTEM

**-tec**

**hans j. michael gmbh**

**MT-Messtechnik**

**E+E**  
ELEKTRONIK®  
YOUR PARTNER IN SENSOR TECHNOLOGY

**ECOLAB®**

Ingenieurbüro &  
Reinraumservice  
Egon Buchta GmbH

**BRIEM**  
Steuerungstechnik GmbH

**ILMAC**

**CLEAR  
CLEAN**

# Hygiene technology versus corona virus



**Classifying certain professions as „systemically relevant“ is easy. Actually, protecting them effectively against imminent infections is much more challenging. The trade and public authorities still too seldom rely on technical protective equipment that has long been available. The German Cleanroom Institute (DRRI) provides hospitals, supermarkets and emergency services with ready-to-use technical protective measures against the corona virus.**

As long as no vaccine has been found, there seems to be only one strategy to fight the corona infection wave: We stay away from each other. However, social isolation, contact bans and curfews can only slow down the spread of the virus. They do not provide complete protection, especially not for those who continue to work at supermarket cash desks or in the transport industry, nor for those who provide indispensable services to the population in the health service and the police. All of them are either not or not sufficiently prepared for the encounter with the virus. Changes in behaviour are not enough. Technical solutions are needed.

The good news is that these solutions already exist – from a mobile hospital for 500 corona patients to air filters whose air flow forms a protective cover around cashiers and pharmacists, to the extension of corona tests to large sections of the population with laboratory capacities that are prepared in large laboratories. Solutions like these and more are available on call from companies in the cleanroom technology sector. They are technically mature and some of them have been used for decades in various industries such as medicine, microelectronics and food production. Due to the crisis, the knowledge of cleanroom technicians in dealing with dangerous germs is no longer only in demand in specific sensitive industries, but in the entire production and service sector as well as in public authorities. So why not also for the protection of employees at the supermarket cashier's desk?

## **Improvised protection in the supermarket is not a solution**

To categories certain professional groups as „systemically relevant“ is one thing. It would be much more challenging to effectively protect the endangered personnel at the cash desk, for example.

The virus still spreads much faster than practicable protective measures. Technical solutions in response to the corona crisis are largely unknown to the public. As the improvised protective measures at supermarket cashiers show, there is also little knowledge of professional protective measures in the retail sector. This will probably change as the crisis continues. Then, permanent solutions will be used to protect employees and the population not only from corona viruses, but also from other recurring infectious diseases, such as influenza, or allergenic pollen.

A solution for this, which could be implemented quickly, is offered by ventilation technology. It can effectively protect employees at cashiers' desks and product counters from germs carried in by customers. This is quite simple. All what is needed is a power connection for a filter-unit with the size of a package, which is suspended above every stationary sales workplace with customer contact. The easy-to-install air filter for protecting the cashier area cleans the air drawn in and generates a constant air flow as a protective cover for the employees. This displacement flow, a so-called laminar flow, constantly

## Hygiene technology versus corona virus

keeps germs, which are transported via the air, away from the employee. The flow is adjusted so that it is not perceived as unpleasant. Hospitals or the food industry already ensure locally clean workplace conditions. According to the manufacturer, the filter in the plug-in box lasts for about five years, the power consumption is about 150 to 250 watts/hour.



Instead of professional protection technology, however, you see mainly improvised makeshift measures when you buy. Employees are now sitting behind hastily attached Plexiglas panes or foils that reveal the good will of their employer, but hardly provide any protection. From the perspective of cleanroom experts, they have more of a symbolic meaning or provide moral support. Their dimensions and design are only randomly appropriate to the air currents on site, and they do not provide any protection against contamination via material flows. Goods and means of payment usually move from hand to hand.

A holistic, well thought-out concept would look very different. For example, it would include automated airlocks at particularly vulnerable points of sale such as the dispensing of medicines in pharmacies. These materials pass-throughs function without contact, are ventilated and offer a higher level of protection than non-ventilated dispensing systems. According to one of the suppliers, Ortner Cleanrooms Unlimited from Villach in Carinthia/Austria, they can be installed instead of the door and fitted with an intercom system. A systematic approach would also include the use of trained cleaning staff in department stores, as is common in cleanrooms. Instead of sporadically spraying the handles of freezers and showcases with a spray bottle, they systematically ensured a minimum of decontamination, despite public traffic.

### From portable hospital to mobile lock container

Trade is only one of the sectors with jobs in need of protection. On



the occasion of the Corona crisis, many cleanroom companies have called on their specialists to collect ideas on a wider scale: How can cleanroom and laboratory specialists help with solutions that significantly increase the level of hygiene everywhere in the economy and society? But when it comes to implementing the proposals, the companies are coming up against limits, literally. Many of their employees can only work and travel to a limited extent due to the quarantine measures imposed worldwide. Curfews and hurdles for imports and exports also hamper the business of cleanroom technicians.

One example is the production of a mobile hospital module in Ancona, Italy. Currently almost completely paralyzed by anti-corona measures in the crisis area itself, the mobile modules are more of an option for future disease prevention programs, despite current needs. „Shellbe“ is a transportable dust-free and germ-free clean room that can be set up faster than any stationary hospital. The expandable module of the German-Italian Adriatic Institute of Technology (AIT) could be used as a mobile hospital station, but also as an operating theatre, outpatient clinic, pharmacy or bio-laboratory. „Shellbe“, the English name given to the module, consists of „Shelter“ for shelter and „Shell“ for shell. The core is a basic module measuring 6 by 6 metres edge length and 3 metres height, no larger than a bus station. It can be completely disassembled and transported on normal pick-ups, whether on roads in this country or on rough terrain in a developing country. Further modules could be docked and just as easily transported away again. Systems with up to 1,000 beds are planned. Provided that they are procured with foresight, operators can build in line with demand and keep an eye on costs even in the event of a crisis.

Other and similar projects are in various stages of development. The engineering office DITTEL Engineering in Schlehdorf/Bavaria Highlands and Viessmann Technologies in Hof recently launched the mobile intensive care unit „DV Life Isle,“ for example. In this environment, which is isolated from the outside world by ventilation, one to six corona patients could be cared for. Mobile lock containers are also ready for use. The transition from the isolated inner area to the unprotected outer world poses a particular risk for medical personnel and emergency services. The danger in this changing room area lurks in skin contact with contaminated protective clothing when taking it off. The airlock container provides a remedy. Personnel in protective clothing undergo an air or wet shower in it and only change their clothes after this cleaning. This airlock system is also suitable for fields of application such as personnel control and decontamination in airports or the flow of visitors in hospitals and nursing homes.

Airlocks in the outer form of conventional containers could be set up as so-called Safety Health Chambers in entrance areas – wherever large numbers of people have to be guided through, checked, tested or examined.

### More testing: words can be followed by actions

Major laboratories are currently expanding their diagnostic capacities. For example, the laboratory LS SE & Co. KG in Bad Bocklet is, according to its own statements, „working flat out in coordination with the authorities to be able to contribute to the establishment of diagnostic capacities for the current case of infection“. In addition, the service provider is taking precautions to maintain the security of supply – i.e. testability – in its laboratories. All laboratory staff, including the specialist cleaning team and in-house technicians, are checked for microbiological contamination.

In addition to these crisis preparations on their own behalf, the assistance of laboratories is aimed at companies that have no expertise in the field of operational hygiene monitoring. They advise them on

## Hygiene technology versus corona virus

protective measures. The advice ranges from the concept to training, sampling and interpretation of the findings to the selection of the disinfectant. In order to determine whether a disinfectant is suitable at all, it must first be proven that it is effective against the so-called house germs found in the company.

Even if it is unclear how long the SARS-COV-2 virus survives on technical surfaces, it is undisputed that additional disinfection measures are useful. Not only hospitals can access the know-how of specialized disinfection service providers for the disinfection of their laboratory areas and quarantine and isolation stations. Medical and care facilities can also outsource the cleaning of highly contaminated workwear, for example to specialized dry-cleaning companies.

### Cleanroom Institute passes on hygiene know-how to other industries

Services such as these are provided by the German Cleanroom Institute (DRRI), which pools the cleanroom industry's expertise in the fight against the virus. Its contact partners pass on their know-how to hospitals, companies and institutions.

Founded in 2011, the organization represents the interests of the research-intensive cleanroom technology industry in German-speaking countries and has around 50 member companies. The cleanroom technology suppliers from Germany, Austria and Switzerland

are regarded as the global technology leaders. More than 15,000 cleanroom technicians in Germany alone are dedicated to keeping germs and particles away from people and products. They are used to finding tailor-made solutions, because there is no off-the-peg cleanroom, at least not one that works optimally.

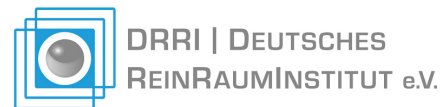
In addition to the transfer of knowledge and contacts to companies at risk of infection the DRRI also provides cleanroom operators with practical assistance in adapting to the new germ, for example in complying with the strict regulatory requirements for industrial hygiene. Microbiological services include sampling plans, the determination of suitable sampling points, cleaning and disinfection concepts and holistic hygiene concepts. Hygiene monitoring services range from external sampling to the counting and identification of microorganisms. Once the hygiene monitoring data have been evaluated and the causes of deviations have been found, corrective and preventive measures are proposed. In addition, training courses are offered that can be tailored to individual microbiological issues.

Cleanroom companies are learning by doing during the crisis. Vocational training institutions currently offer special behavioral training for cleanroom personnel and inform companies about internal ways of spreading the virus. The Corona virus is not simply a germ like any other, even for experienced cleanroom personnel. Due to the easy transmissibility of the virus, operators should put their barrier concepts and processes to the test, says the head of the Cleanroom Academy in Leipzig, Rüdiger Laub: „Corona demands intensive and targeted hygiene measures – also and especially in cleanrooms.

The range of ideas, products and services offered by cleanroom technology companies for use against corona virus infection is therefore broad. Using them can mitigate the course of the crisis. Because until a vaccine against Covid-19/SARS-COV-2 is developed, the following applies: The virus is a germ, hygiene is the answer.



More ...



Deutsches Reinrauminstitut e.V. (DRRI e.V.)

An der Breiten 1

82444 Schlehdorf

Deutschland

Telefon: +49 (0) 88 51 615900

E-Mail: [g.dittel@dittel-ce.de](mailto:g.dittel@dittel-ce.de)

Internet: <http://reinraum-institut.de/>



# VIRTUAL WORKSHOP ‚PHARMA´S JOURNEY TO DIGITAL MANUFACTURING‘

04th - 05th June 2020: Pharma´s Journey to Digital Manufacturing, Online Workshop

We offer the ISPE D/A/CH Online Workshop ‚Pharma´s Journey to Digital Manufacturing (OWN it - DRIVE it - WIN it)‘, which is still in great demand, as a virtual online Workshop.

Speakers have already confirmed their participation and the agenda is in progress to be only slightly amended for the virtual online needs. Your full remote participation will be possible, and tools will allow for active participation. Be the first to register.

The pharma industry is undergoing a significant transformation due to digital technologies.

Techniques such as visualization, modeling, automation, machine learning and artificial intelligence are dematerializing traditional processes and facilities, and drive productivity through fewer errors, higher output and improved quality, safety and speed of operations.

The event will highlight case studies, regulatory issues, opportunities, achievements and pitfalls on the path to digitalization and highlight the urgency of accelerating digital transformation in the pharma industry.

Unique to this workshop is that nine pharmaceutical manufacturers (Bayer, GSK, Johnson & Johnson, Merck, Novartis, Novo Nordisk, Roche, Sandoz and Takeda) will present and discuss their digital strategies and experiences.

This event is tailored for mid-senior level management, decision makers, and leaders who set strategy and direction for manufacturing, quality and CMC regulatory affairs in their organizations.

Event language: English.

Chair: Viktor Mettler, Global Quality Head REFS, NBS & Country Quality, Novartis, ISPE DACH Chapter representative

Co-Chair: Ursula Busse, Global Head Quality Intelligence & External Affairs, Novartis



More ...

ISPE - DACH

Deutschland - Österreich - Schweiz

Marienburger Str. 13 D 37120 Bovenden

Telefon: +49 (0)176 3966 9089

E-Mail: klaus.thornage@ispe-dach.org www.ispe-dach.org



May 2020

Dear subscribers,  
how quickly things change. While last year we were able to report a lot about trade fairs at this time, there is currently a lot of information about corona and protective measures. You can still find all events relating to cleanrooms at [www.cleanroom-online.com](http://www.cleanroom-online.com)

However, we have reduced the calendar of events in the DE-newsletter to **webinars**.

The presentation is clearly arranged in a monthly summary.

You can also print out the pages individually as a reminder.

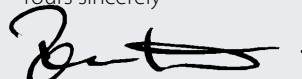
But do not forget: also to **Webinars** one must announce oneself frequently in time!

And always remember: If you offer webinars, you can enter these dates free of charge on [www.cleanroom-online.com](http://www.cleanroom-online.com)

In addition, there are some interesting articles in the newsletter:

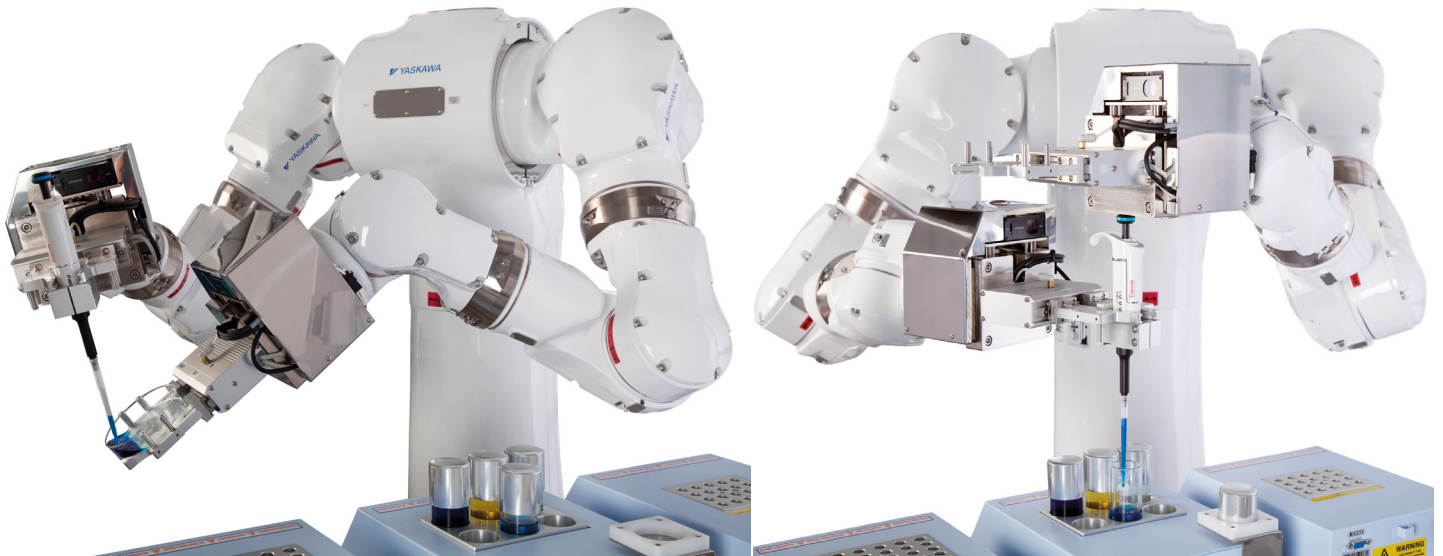
- > **Automated laboratory tests with robots**
- > **Efficient hygiene management reduces sickness rates and costs**
- > **Corona crisis brings together different kinds of companies to produce protective masks**
- > ...

Yours sincerely

  
Reinhold Schuster



More ...

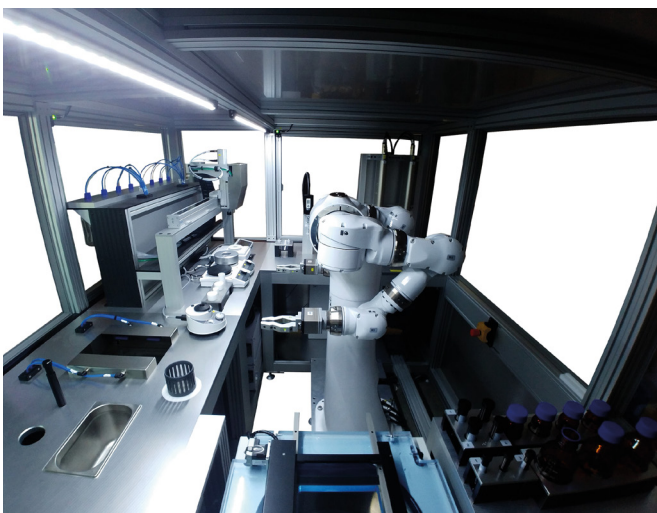


Ein speziell für die Laborautomatisierung entwickelter Roboter ist der Dual-Arm-Roboter Motoman CSDA10F von Yaskawa. (Quelle: Yaskawa)

# Automated laboratory tests with robots

**As the current crisis situation has shown, a health care system quickly reaches its limits when lab capacities are lacking, or if the existing test installations are not flexible enough to accommodate variants and new, modified test procedures. In this situation, lab robots offer a valuable alternative to manual testing.**

Robots have long since become established in industry, and automation is also gaining a foothold in laboratory environments. In research and development (pharmaceutical, chemistry, life science, bio- and nuclear medicine), blood analysis and individual cosmetics production, convincing results have been achieved over many years with robot solutions that are so flexible and versatile that they are also suitable for clinical infection tests. Besides easing the burden on laboratory staff, robots offer excellent and reliable process stability and quality.



In einem aktuellen Entwicklungsprojekt werden mit dem CSDA10F etwa ein Dutzend Prozesse für die vollautomatische Produktion von Nanopartikeln verkettet ausgeführt. (Quelle Anlage: Goldfuß engineering GmbH)

## There are basically two forms of robot-supported automation of lab processes:

- Partial automation, in which the robot performs the repetitive actions of the laboratory staff, thus facilitating routines. The robot assumes handling tasks, but process control remains with lab personnel or automatic analysis systems.
- Full automation of the testing procedure, including sample preparation, pipetting, test implementation and operation of all analytical equipment by the robot. The robot assumes process control and handling tasks. The aim is to construct universally usable standard work cells, with a two-arm robot as a central element that can be adapted and flexibly reprogrammed to any lab equipment. A solution of this kind can independently carry out lab processes 24 hours per day with the highest precision and repeatability.

## How fast can robot-supported automation solutions be installed?

Partial automation, i.e. retrofitting a robot for handling purposes, can be quickly completed with collaborative robots. In comparison, the design and installation of a new, fully automated robot cell takes several months. But once a standard robot cell of this kind has been constructed, the laboratory and analytical equipment has been installed around the robot with a gradually growing library of motion patterns, "these cells can be quickly and simply reprogrammed for new tasks," says Thomas Goldfuss, General Manager of Goldfuss Engineering Company that has already implemented several laboratory cells with Yaskawa robots for renowned customers.

## Automated laboratory tests with robots

### Fast solution: partial automation of handling tasks with a collaborative robot

Short-term relief of the laboratory staff can be achieved by partial automation of handling tasks at existing manual test stations. The robot performs repetitive movements, thus lifting the burden on qualified lab personnel. A collaborative robot that can be used in direct contact with humans and does not require a safety guard is predestined for the purpose.

One such robot is Yaskawa's MRK-capable Motoman HC10DT. Two versions of the six-axis robot are particularly suitable for use in the laboratory. These are the dust- and waterproof HC10DT IP67 (designed to meet the protective requirements of protection class IP67) and the hygienically designed HC10DTF, whose operating materials and gear grease are approved for contact with foodstuffs.

With the Direct Teach (DT) process the robot arm is simply guided from point-to-point in a sequence of motions. With the aid of pre-assigned pushbuttons on the robot, the operator can specify whether a gripper is to be opened or closed at certain positions. This motion sequence is saved in a library, and the robot can repeat it any number of times. To do this, the operator does not need to be a robot programming expert.

### Fully automatic workstation – with the CSDA10F two-arm lab robot

A robot specially developed for lab automation is Yaskawa's two-arm Motoman CSDA10F robot. With its human-like stature and two arms capable of individual or synchronized movements, thanks to multifunctional tools and grippers it is extremely versatile in use. It can work with almost any existing standard lab equipment and is able to handle conventional laboratory equipment as known from manual workstations: e.g. petri dishes, manual pipetting, incubators or reaction vessels. Automation-friendly equipment such as pipettors with expensive tips or microtiter plate stations are helpful in respect of accelerating throughput, but unnecessary.



In einem aktuellen Entwicklungsprojekt werden mit dem CSDA10F etwa ein Dutzend Prozesse für die vollautomatische Produktion von Nanopartikeln verkettet ausgeführt. (Quelle Anlage: Goldfuß engineering GmbH)



Für die Teil-Automatisierung von Handlungsaufgaben ist ein kollaborativer Roboter erforderlich, der im direkten Kontakt mit dem Menschen eingesetzt werden kann. (Quelle: Yaskawa)

## Automated laboratory tests with robots

The existing analytical equipment is adopted in its present form including software connections, even though it was not actually optimised for classical automation. Expensive liquid handling systems – with their costly consumable materials – are not strictly necessary, as the robot can directly assume this task. In its laboratory workstation the robot can perform a wide range of tasks that had hitherto been reserved for humans, such as the opening and closing of reaction vessels (not necessarily microtiter plates), pipetting and dosing of liquids or powders, production of nutrient solutions with spatulas. Furthermore, they can be used for the insertion and removal of samples as well as opening, filling and closing of reaction vessels, or the operation of devices such as centrifuges, vibrators or incubators.

The CSDA10F is ideally suited to complex, standardized test sequences according to protocols that were actually written for manual operation. The two-arm CSDA10F robot is also an interesting solution in process development, e.g. for the definition, safeguarding and optimization of process stages prior to the upscaling of throughput in a later production line. In Japan it is already being employed in larger installations for biomedicine synthesis (cancer drug development) and chemical analysis (sample preparation).

The CSDA10F is based on a robot that has already had a major impact on industry automation. This new version was specially designed to satisfy hygiene requirements in the laboratory, e.g. with a highly substance-resistant finish, washable hygienic design, H<sub>2</sub>O<sub>2</sub> sterilization and cleanroom compatibility acc. to ISO 14644-1.

Due to its high degree of flexibility, the range of applications for the innovative robot is broadly diversified – it can quickly and easily learn completely new work processes. Many characteristic movements (pipetting, opening/closing of “eppis”, handling microtiter plates, opening/closing of incubators or screw-top bottles) were already standardized and appropriately stored as modules in a movement library. The interface human/robot for operation and visualization can be realized via a PC or a touch panel. The HMI is either individualized, or connected to an existing workflow scheduling software (e.g. SAMI-EX from Beckman Coulter). Once the movement programs are stored in the library, the robot operator does not need to be an expert; the latter simply composes and parameterizes the individual process stages of the desired work sequence.

### Summary

Until now, classical automation in laboratories was often deemed to be inflexible and bulky. Today, easy-to-operate robot models are available that are capable of carrying out a multitude of different laboratory tasks. They can perform operations that are too dangerous or monotonous for humans. The use of robots also guarantees exact reproducibility of work results in the processing of a large number of samples. Lab automation not only saves time and costs, particularly with high throughput rates. Due to the unrivalled level of precision, it creates new prerequisites for research on input materials, the production of which was hitherto not sufficiently reliable or reproducible.

YASKAWA Europe GmbH  
D 85391 Allershausen



Roboter können im Labor viele Aufgaben erfüllen und damit Prozesse beschleunigen. (Quelle: Yaskawa)

# Energy efficiency is always in mind at BvL

## Resource conservation measures in construction projects and plant systems

The need to take action to protect the climate is a scientific fact and one of the most important issues of our time. On the terms of its Climate Protection Act, Germany aims to reduce emissions by at least 55 percent by 2030. In 2019, greenhouse gas emissions did fall year-on-year by 6.3 percent in Germany, according to figures from the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety. While this decline has also been made possible by corresponding activities in the manufacturing sector, maintaining and improving this trend is advisable and indeed essential. As a leading manufacturer of industrial cleaning systems, BvL Oberflächentechnik GmbH has long since introduced extensive measures to reduce energy usage in a wide range of relevant areas.

### New premises: an energy-efficient building

Continuous growth and a positive trend in incoming orders have enabled BvL to take the step of undertaking major expansion work at its head office in Emsbüren, Lower Saxony. In mid-2019, two more buildings were added at the site, taking the total number of buildings used for production to five. Staff were also able to move into a new, energy-efficient office building (German KfW 55 class) in February this year. Compared with the reference building from German energy-saving regulations (EnEV), the new energy-efficient office building needs just 55 percent of primary energy. This significantly figure for lower primary energy consumption translates into an annual saving of almost 220,000 kWh of primary energy, which equates to an annual reduction of 55,829 kg of CO<sub>2</sub>. These savings have been made possible by improved insulation standards for walls, roofing and the foundation, plus triple-glazed glass for window panes. Alongside the use of renewable energy sources, selected plant systems like heat pumps, efficient radiant heaters and ventilation systems with waste heat recovery provide eco-friendly heating for the building.



Thanks to its comprehensive energy-saving strategies, the new office building at BvL Oberflächentechnik cuts annual primary energy consumption by 45 percent compared to a reference building.

### Resource-friendly plant systems and part usage in line with our vision

Energy efficiency as well as ecologically and socially responsible business activities are key elements of the BvL Oberflächentechnik vision statement. Accordingly, ensuring resources are used responsibly when designing and building cleaning systems and accessory system components has a major role to play at BvL. Extensive energy-saving measures come as standard in terms of cleaning system features. In reducing energy use, one key approach taken is to maximise the level of insulation applied to system parts such as pumps, filters and piping.

### Smart cleaning: taking energy efficiency to the max

BvL employs a range of smart cleaning strategies to ensure that its cleaning systems are as environmentally friendly as possible. For many years now, all BvL cleaning systems have been fitted with Libelle Fluid Control as standard. With the help of associated sensor systems, bath quality is measured continuously to ensure that smaller volumes of water and cleaning agent need to be used compared to simply replacing the bath at regular intervals. Libelle Cleaner Control and Libelle Oil Control are also used by BvL to enable a more conservative use of resources: continuous measurement of cleaner and oil concentrations in the bath means that replacement only happens if and when necessary. The "Component ID" app used by the new Libelle Product Control uses a camera array to detect the optimum position and number of parts on the workpiece carrier – also so as to ensure maximum possible efficiency. At the same time, the system also switches to energy-saving standby mode as soon as it detects that no more components being fed into the system. Alongside the Libelle-based sensor system components, exhaust air is managed



## Energy efficiency is always in mind at BvL

by an exhaust air control based on the relative humidity of the exhaust air, while optimum drying times are assured by the drying control, based on current humidity in the drying chamber.



BvL cleaning systems are equipped with resource-friendly components such as insulation, exhaust air management and automated bath control units as standard.

### Future projects with a focus on resource conservation

Development projects in the pipeline at BvL for cleaning systems and system components are also focused strongly on reduced resource use. In its 2030 Vision, the company has also set itself the goal of a "self-learning cleaning system", for example. The idea here is to use AI in a way that means systems controlled by smart algorithms are independently capable of detecting system conditions and component/media parameters, comparing these continuously with actual/target states and learning from these results. Apart from reducing resource and personnel usage, the continuous process of monitoring and adaptation in these systems will ensure high-quality cleaning results over a longer period.

BvL Oberflächentechnik GmbH  
D 48488 Emsbüren

## Use the time, prepare decisions efficiently

**The AP&S Demo Center will help you. Request your wet process demonstration and be part of it live via video chat.**

It's a difficult time for the semiconductor industry, difficult time for decisions. Unrest and uncertainty lead to investments being postponed. But why not using this time effectively to gather relevant information for decision-making? Postponed decisions or not, every crisis is followed by an upswing and for this one should be prepared.

When it is about a decision concerning your next wet process tool, so the AP&S Demo Center supports you in making the right choice. The team of experienced process engineers will help you to seamlessly check all the relevant decision criteria and to prepare decisions in the best possible way.

### How does it work?

You send AP&S your request for a demonstration of a wet process tool, which is of interest for you. Via live video chat you can watch the wet process demonstration and see its results on your screen. Should you be unable to attend? No problem, the team of AP&S records the process with the integrated camera in the process chamber and sends you the recordings afterwards.

In addition, you will receive a detailed test report including all relevant process and tool parameters, information on the chemical consumption and more, so that based on this data you will be able to calculate the CoO of the equipment for your production.

Based on the process results of the demonstration, the process engineers will prepare a recommendation for a plausible tool configuration that is tailored to your needs and requirements.

Our Demo Center complies with purity class ISO5. This means that all process demonstrations are carried out under production-related conditions. By working under cleanroom conditions, processed wafers from the AP&S Demo Center can be analyzed and checked direct-

ly at the customer's site without additional cleaning steps.

The number of customer demonstrations at the AP&S Demo Center has been rising steadily since 2013. In 2018, the Demo Center was expanded with additional equipment and a state-of-the-art microscope with CCD camera was purchased. Both single wafer and some batch process demonstrations are available now.

AP&S offer the following processes in the Demo Center: Metal Lift-off, PR-Strip, Metal Etch with End-Point detection, further etching processes (dHF max. 0.5%), mask cleaning, various substrate cleaning processes, NID drying of standard substrates, Taiko, MEMS, thin wafers, etc.

AP&S International GmbH  
D 78166 Donaueschingen



# Measuring Instrument Calibration in the Accredited E+E Calibration Laboratory

**Austrian sensor manufacturer E+E Elektronik's calibration laboratory offers accredited measuring instrument calibration according to EN ISO/IEC 17025.**

**Austrian sensor manufacturer E+E Elektronik operates an EN ISO/IEC 17025 accredited calibration laboratory for humidity, dew point, CO<sub>2</sub>, air velocity, mass flow, temperature and pressure at its headquarters in Engerwitzdorf. Accredited calibrations are needed wherever particularly high accuracy of the used measuring instruments is required. The calibration certificates issued confirm the traceability of the measured values to the national standard to comply with globally recognised standards.**



„Use production downtimes now to have measuring instruments calibrated“, recommends Thomas Blumhagel, Head of Sales and Marketing at E+E Elektronik. (Photo: E+E Elektronik Ges.m.b.H.)

Measuring equipment monitoring plays a central role in modern, automated production processes. If measuring instruments do not deliver the required accuracy, this endangers a smooth process flow, safety and also the quality of the end product. For this reason, regular calibration of the used measuring instruments is an essential part of most quality assurance systems.

## Use Production Downtimes to Calibrate Measuring Instruments

„Due to the current corona pandemic, many companies have currently shut down or stopped production. This interruption can now be used to have the measuring instruments used in the production process checked and calibrated“, recommends Thomas Blumhagel, Head of Sales and Marketing at E+E Elektronik. The accredited E+E Elektronik calibration laboratory offers an option to do so.

## Calibration in the Accredited Laboratory

The calibration laboratory operated by E+E Elektronik GmbH is accredited by Akkreditierung Austria/Federal Ministry for Digital and Economic Affairs (Bundesministerium für Digitalisierung und Wirtschaftsstandort) according to EN ISO/IEC 17025 under the identification number

0608. The E+E Calibration Service includes manufacturer-independent measuring instrument calibrations for the measurands humidity, dew point, CO<sub>2</sub>, air velocity, mass flow, temperature and pressure.

The decisive feature of an accredited calibration is the traceability of the measurement results to a national standard, as it takes into account the measurement uncertainties of the entire calibration process. In contrast to ISO or works calibration certificates, only accredited calibration certificates are internationally comparable.

## Special Calibrations in the Designated Institute / NMI

Since 2004, the E+E calibration laboratory, as a Designated Institute of the Austrian Federal Office of Metrology and Surveying (Bundesamt für Eich- und Vermessungswesen – BEV), has provided the „National Etalon“ (measurement standard) for air humidity. In 2011 the designation for air flow velocity was also assigned. The calibration experts in Engerwitzdorf are thus the highest metrological authority in the country for these two measured variables.

As a Designated Institute, the E+E calibration laboratory can carry out special calibrations for humidity and air flow velocity at the level of a National Metrological Institute (NMI). This is of particular interest for other accredited calibration laboratories, Designated Institutes or NMIs.

Especially for the calibration of high-precision dew point mirrors, the metrological capabilities of the Designated Institute are in demand internationally. „In Europe and even worldwide, only a handful of laboratories cover a comparable scope of calibration,“ says Dietmar Pachinger, head of the E+E Elektronik calibration laboratory.

Detailed information on the scope of accreditation and calibration services is available on the website: [www.eplusecal.com](http://www.eplusecal.com).



E+E Elektronik operates an EN ISO/IEC 17025 accredited calibration laboratory at its headquarters in Engerwitzdorf, Austria. (Photo: E+E Elektronik Ges.m.b.H.)

Mehr ...



E+E Elektronik GmbH  
Langwiesen 7 A 4209 Engerwitzdorf  
Telefon: +43 7235 605 0 Telefax: +43 7235 6058  
E-Mail: [info@epluse.at](mailto:info@epluse.at) [www.epluse.com](http://www.epluse.com)

# Efficient hygiene management reduces sickness rates and costs

It is still too early to learn definitive lessons from the corona crisis. But one thing is already clear: hygiene is an economic factor that affects all industries, not just the health and food sectors. Moreover, it is becoming clear that service providers not previously perceived as systemically relevant are indeed systemically relevant. „The pandemic is making us all well aware of what the facts of the matter were previously and will continue to be in the future as well,” says Jürgen Höfling, CEO of the CWS Group. “Inadequate hygiene, especially inadequate hand hygiene, causes enormous economic damage. Suppliers and service providers who ensure greater hygiene must be recognized as systemically relevant in order to be able to maintain supplies across borders in an emergency.”



Juergen Höfling

The figures speak for themselves: companies in Germany incur annual costs of around EUR 130 billion as result of illness, for example due to the lost days it entails. That equates to around EUR 3,600 per employee. Much of the absences are caused by colds. Contrary to popular belief, flu viruses, for example, can materialize all year round. Like COVID-19, 90 percent of all colds are caused by viruses. And, just like the coronavirus, the pathogens of up to 80 percent of all infectious diseases are transmitted by hand contact, according to the WHO.

## A lot of potential for improvement

This figure – 80 percent – shows just how important hand hygiene is. Regular and correct handwashing can reduce the risk of catching colds by 50 percent. „Everyo-

ne will likely have become aware of the importance of washing hands in the course of the corona pandemic,” remarks Jürgen Höfling. „Generally speaking, however, companies should do everything possible to ensure that their employees are better protected against infection by viruses and bacteria.”

There is still an enormous need for improvement in this context. After a toilet visit, more than 30 million bacteria can accumulate on every square centimetre of the hand. But: 38.7 percent of all office employees do not wash their hands after using the toilet, and only 30 percent use soap to do so. Besides this, many do not dry their hands properly after washing. Damp hands can spread around 1,000 times more bacteria than dry hands, however. Each contaminated hand in turn spreads viruses or bacteria over more than five surfaces on average: on door handles, computer mice, keyboards, pens, tools, armrests and much more. They then remain active on those surfaces for up to 48 hours and longer.

## What concrete action can every company take?

The good news is: effective hand hygiene is extremely simple: thorough washing with soap is enough to remove viruses and bacteria from hands. Doing so prevents germs from penetrating the body through the mucous membranes of the eyes, nose and mouth. CWS therefore advises all companies to take three packages of measures:

1. Provision of information on correct hand hygiene in every company. Firms should provide information – for example, on notices in washrooms – emphasizing the necessity for and the right way of washing hands. This applies to the occasions (e.g. after using the toilet, before eating) but also the duration (20 to 30 seconds) and the technique (always use soap, rub into and lather all hand surfaces, dry thoroughly).
2. Adequate supply of soap and disposable towels in all relevant areas. If possible, washbasins should be equipped with systems that dispense water and soap already pre-mixed and that can be operated contact-free. Disposable towels do not have to be paper products to be subsequently thrown away. Reusable fabric towel rolls are more sustainable and environmentally friendly. With their 2-chamber systems, retractive towel dispensers ensure that sections that have already been used remain separated from the clean ones. In its ma-



## Efficient hygiene management reduces sickness rates and costs

nual on corporate pandemic preparedness planning, Germany's Federal Office of Civil Protection and Disaster Assistance expressly classifies the use of single-use textile systems as suitable for hand hygiene.

3. Only use disinfectants where washing hands with soap and water is not possible. In this case too, instructions on the correct dosage, duration and rub-in technique are also recommended, because the product must be massaged in carefully and for a sufficient time in order to work. For the duration of the pandemic, disinfectants should primarily be reserved for health-relevant companies and risk groups.

### Conclusion:

Hygiene as an essential part of occupational safety and health protection ought to be a top priority – in all sectors and industries. In the interests of ensuring that soap and disinfectants as well as other hygiene products can be delivered on time, it is of the utmost importance that suppliers are classified as systemically relevant. „The pandemic is making people ill, but impacting the economy as well,“ says Jürgen Höfling. „This is one reason more to foster a rapid economic recovery by way of relatively simple, company hygiene measures.“ This also inclu-

des measures such as protective face masks, transparent partition panels on counters and deactivating any further hygiene gaps by means of non-contact alternatives.

[More ...](#)

**CWS**

CWS.COM

CWS-boco Deutschland GmbH  
Dreieich Plaza 1A D 63303 Dreieich  
Telefon: +49 (0)6103 309 3333  
Telefax: +49 (0)6103 309 169  
E-Mail: [info.de@cws.com](mailto:info.de@cws.com)  
Internet: <http://www.cws.com>

## PIA Automation and Ruhlmat: Fighting the virus together

**Since the spread of the Corona virus can only be combated by joining forces, automation specialist PIA Automation and special machine manufacturer Ruhlmat have signed a license agreement. The aim is to make a rapid and significant joint contribution to minimize the high demand for facemasks.**

The demand for facemasks remains high and continues to rise. It will take time until an approved vaccine is available. That is why masks - apart from keeping a distance - are currently the best protection against being infected. Many machine manufacturers are working at full speed together with their customers to realize the machine production

of masks. Due to the increased number of requests and the need to provide mask production machines, PIA Amberg, the medical competence center of the PIA Group, has increased its capacities and started a 3-shift operation in compliance with all health and safety measures.

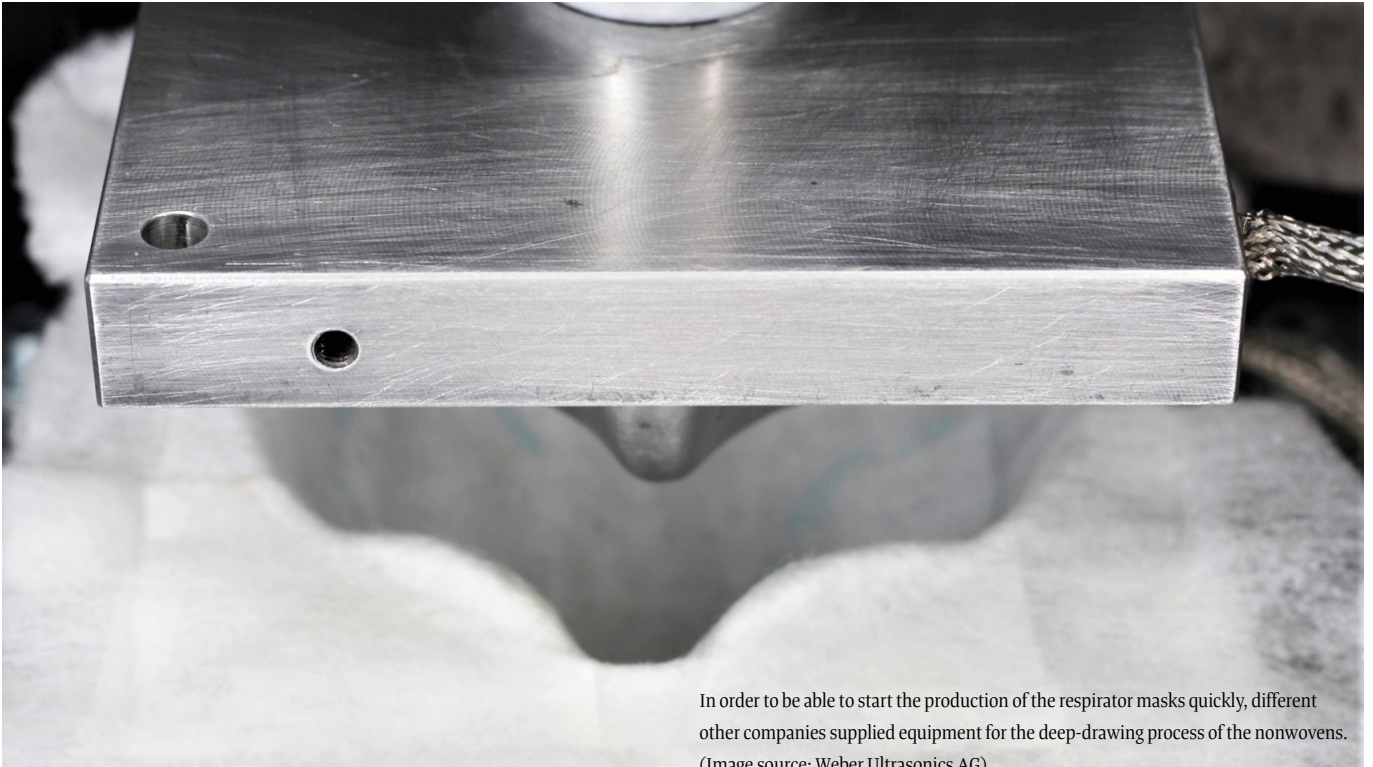
The virus is a powerful opponent that

can only be defeated by working together. Therefore, PIA has signed a license agreement for the production of mask machines with the company Ruhlmat. The special machine manufacturer from Marksuhl distributes and builds the mask production systems developed by PIA under license. The objective is to be able to quickly satisfy the high global demand for protective masks and to increase the sales and production of the urgently needed fully automatic machines in Europe. The development of the machines is also to be pushed forward together. In these difficult times, people have to maintain a distance, but in order to overcome the crisis, new paths have to be treaded and limits overcome. The cooperation between PIA Automation and Ruhlmat is an example of how - in addition to "social distancing" - "industrial approaching" can make a significant contribution to combating the virus.



Corona license agreement between PIA Automation and Ruhlmat.

PIA Automation Amberg GmbH  
D 92224 Amberg



In order to be able to start the production of the respirator masks quickly, different other companies supplied equipment for the deep-drawing process of the nonwovens. (Image source: Weber Ultrasonics AG)

# Corona crisis brings together different kinds of companies to produce protective masks

## Stronger and faster together

**When you think of respiratory and surgical masks, which are currently produced predominantly in Asia, ultrasonics is probably not the first thing that springs to mind. Yet ultrasonic welding plays an important roll in making these products. As an experienced technology provider for mask production equipment, Weber Ultrasonics AG now manufactures respiratory and surgical masks in Germany. This is made possible by the fast and active support of other companies as well as the huge dedication of its own employees.**

Efforts to stem the spread of Covid-19 make one problem of globalisation clear: the dependency on low-cost manufacturing countries for personal protective equipment (PPE). That is why, in addition to protective clothing and gloves, breathing protection and surgical masks have been in short supply in Germany and other European countries since the global spread of the corona virus Sars CoV-2. 'Since the Sars pandemic in 2002/2003, we have been producing equipment for the manufacture of different protective masks made of nonwovens based on thermoplastic synthetics. The equipment is primarily supplied to customers in Asia,' reports Christian Unser, Chief Sales Officer at Weber Ultrasonics AG. It includes components such as generators, boosters, converters and sonotrodes as well as complete systems for welding, laminating, cutting and embossing with ultrasound. Producing masks itself was never an issue for the component and plant manufacturer based in Karlsbad (Germany) – until the start of March 2020.

### Entering into production of FFP respiratory masks

What triggered it was an enquiry from a mechanical engineering customer who was unable to get filter domes for its special ventilated respiratory masks in FFP2 protection class as a result of the export restrictions in place for these products in virtually all countries. 'Together with the customer, we developed a plant design for producing the three-dimensional filter elements in a very short time. The customer immediately placed an order for three machines,' explains Christian Unser. In parallel with this development, Weber Ultrasonics converted the design into a standard machine for the production of complete breathing protection masks. The first process step of deep-drawing the masks represented a challenge. This takes place through hot-forming, which requires a suitable tool as well as special heating elements and corresponding control units. In order to be able to produce corresponding prototypes quickly, Christian Unser turned to

## Corona crisis brings together different ...

a market player that also works in this segment and spontaneously provided a heating element and control unit. The Head of Design at Weber Ultrasonics obtained a second one from his former employer. The necessary tool was made by a neighbouring model maker and long-standing partner of the company practically overnight. 'It really is great how different companies have offered spontaneous support and cooperation,' comments the Chief Sales Officer.

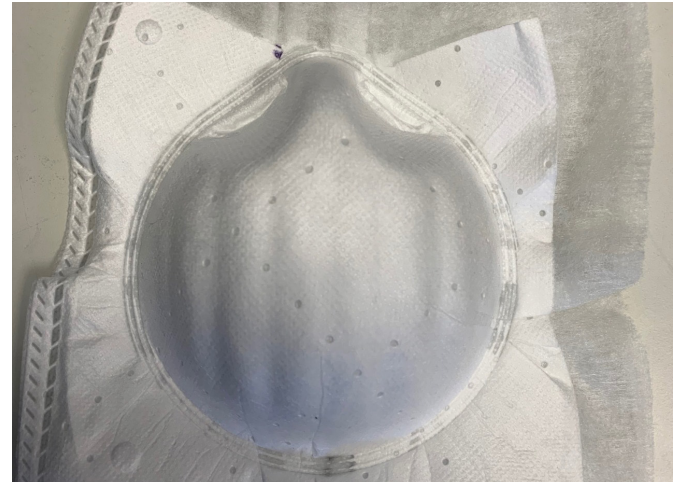
### 60 respiratory masks per hour with one machine

The production of the breathing protection masks takes place with this standard machine in a multi-stage process. In the first step, an open-pored fibrebond as stabiliser, a layer of meltblown nonwoven as particle filter and a layer of spun-bond are shaped through hot-forming. The edges of the masks are then joined in an ultrasonic welding process. To do this, an ultrasonic converter converts the electrical signal produced by the generator into mechanical oscillation. This is transferred via a booster and a customised welding tool, the sonotrode, onto the surface to be joined. The frictional heat this generates causes the nonwoven materials to melt specifically at the edges, where they form a permanent bond without distorting. At the same time, the reliable, energy-efficient and productive joining technology ensures a soft and skin-friendly surface. After the masks are then punched out mechanically, tapes are attached for fastening them.

The production capacity of the compact standard plant with a single tool is around 60 breathing protection masks per hour. The aim is to achieve protection class FFP3 for the masks produced according to the current standards and to perform an accelerated inspection of corona virus pandemic breathing protection masks for Germany.

### Virtual start-up with real twin for surgical masks

Weber Ultrasonics has also experienced increased demand for production equipment for surgical masks. The company's solutions in



The respiratory mask after deep-drawing and welding of the edges with ultrasound. (Image source: Weber Ultrasonics AG)

this segment so far enable the production of 200 masks per minute. 'For this application we are currently working all-out to set up a testing plant at our premises that will use a newly developed procedure for continuous ultrasonic welding. This will enable us to increase production capacity to 400, maybe even 600 masks per minute,' explains Christian Unser. This machine combines the steps of folding the fabric, integrating the nose wire, vertical and horizontal welding, welding on an elastic band and separating.

One reason for the fast implementation of this system in the factory in Karlsbad is the current travel restrictions. 'We now need to put the plants into operation virtually at our customers' premises and to do this it is important that we have the same performance here,' says Christian Unser. 'This also has the positive effect that we can push forward developments directly on the plant, perform tests for customers and above all produce surgical masks in large quantities ourselves.'

Weber Ultrasonics AG D 76307 Karlsbad-Ittersbach



For the respiratory masks produced according to the standards for protection class FFP3, an accelerated inspection of corona virus pandemic breathing protection masks for Germany will be carried out. (Image source: Weber Ultrasonics AG)

# Hahnemühle Delivers Consumables for New COVID-19 Cartridge-Based Test System

The new high-volume COVID-19 cartridge-based test system is capable of rapidly detecting multiple virus infections.

Within one hour, the system is providing positive or negative results for COVID-19, as well as more than 20 other viruses. Large quantities of patients can be tested through this industrial-grade test system, which is currently being deployed in the market via several medical hardware system providers. In this context, authorities classified Hahnemühle in March 2020 as a mission critical (systemrelevant) production facility to ensure continued production and supply chain peace of mind during this difficult period in the fight against COVID-19.

"Hahnemühle has been innovating in the area of life sciences since 1883, and is also known as one of the inventors of pure filtration and analytical systems. We provide these solutions to companies within the healthcare sector, hospitals, and laboratories. We are proud to be a contributor to the global fight against COVID-19", says Jan Wölfle, President and CEO of Hahnemühle FineArt Group.

This high-volume cartridge-based test system for coronavirus consists of a one-time use cartridge, including agents and substrates from Hahnemühle, plus a computer based analytical system from various hardware vendors. Samples are multiplied within the one-time use cartridge and results are delivered within one hour. The system can detect evidence of more than 20 viruses within the sample and was upgraded and approved in March 2020 to also detect COVID-19. Suspected cases can be tested faster, in higher volumes, isolated and,



if needed, treated much more efficiently and with more scalability than in the past.

"Fast testing to detect COVID-19 is essential in the fight to contain and mitigate the coronavirus outbreak. Many manufacturers are increasing their capacity as fast as possible and are requesting these cartridge-based consumables in high volumes from us. To that end, we are deploying additional resources and developing, in tandem with our customers, additional solutions to help fight this global pandemic. By the end of this year, we will increase our monthly capacity to provide consumables for up to at least 20 million COVID-19 tests per month. Special procedures have already been put in place since January to ensure that all guidelines from authorities are proactively followed globally. Our Production and Finishing Departments are in rotating 3-shift schedules, while the Sales and Administration Departments are working in a similar shift schedule both on- and off-site to ensure mission critical business continuity".



Consumables for Corona /Covid 19 Tests (@Hahnemuehle)

Hahnemühle FineArt GmbH  
D 37586 Dassel



Jan Wölfle; CEO Hahnemühle FineArt Group (@Sarah Brocke)

# Every cycle counts

**In the fight against the corona virus, it is not just every day that counts. Every additional cycle of a fully automated assembly line for the production of urgently needed protective masks is also crucial for fighting and containing the virus. As a systems integrator, PIA Automation is making an essential contribution to this cause.**

The corona pandemic is leading to an acute shortage of surgical face masks worldwide, which cannot be eliminated by manual production alone. PIA Automation's fully automated assembly lines for high-speed production provide the solution to this problem.

Since the rapid spread of the virus, PIA Amberg has received more than 100 inquiries from all parts of the world. The site in Bavaria, Germany, hosts PIA's medical competence center and has now been entrusted with the production of more than a dozen fully automated assembly lines for the manufacture of face masks. Many companies are responding to the Bavarian regional government's call to establish a national production for personal protective equipment. One of them is Zettl Automotive, which is now setting up the production of face masks in partnership with PIA. PIA supports Zettl in supplementing manual with machine production. The plans were put into concrete form with Bavaria's prime minister Söder and minister of economic affairs Aiwanger at a joint on-site visit at Zettl's plant in Lower Bavaria. The goal is the production of about 1 million surgical face masks per day! With this ambitious project both companies show that - in addition to „social distancing“ - an „industrial approach“ can also contribute to the fight against the virus.

While production is being shut down in many places, PIA's production facilities are not only open but: „Due to the high number of inquiries and the need to provide mask production machines, PIA

Amberg has also increased its capacities and is ready to start a 3-shift operation. Of course, all health and safety measures are being adhered to. It is planned that the first assembly lines will leave the facility in a record time of a few weeks," explains Lothar Mehren, Head of the Medical Division in Amberg. Each of these fully automated assembly lines for high-speed production can deliver a quantity of up to 140,000 units (depending on type and material) per day, which is far greater than what is currently produced manually.

In Europe, PIA can thus contribute to meeting the demand for such masks, especially in view of the expansion of mandatory wearing in more and more countries. North America is a current hotspot of the corona pandemic. PIA's local subsidiaries are already prepared for this. Thomas Ernst, CSO of PIA Holding, comments: „We are passing on all technical documentation and our experience to PIA North America so that systems of the same quality can be built there. At PIA, we have an advantage, as the intercontinental cooperation between our facilities worldwide works excellently - and we are trying to stay one step ahead of the virus“. PIA not only provides production processes at the highest level of security, but also offers fast, global solutions for special requirements.

PIA Automation Amberg GmbH  
D 92224 Amberg



V.l.n.r. Lothar Mehren, Head of Medical Division, Armin Schalk and André Vales, Managing Directors at PIA Automation Amberg GmbH



# Arburg and Ems-Chemie provide help

- Production of protective goggles for use in hospitals and rescue services
- Fast: Uvex helps by providing the certification
- Spontaneous: Joint campaign of the three companies
- Direct: Production starts immediately

These days, nothing is the same as it was a few weeks ago. And yet the Corona crisis has made one thing very clear: companies in Germany and Europe are showing solidarity to help quickly. On the initiative of the German plastics machinery manufacturer Arburg, the Swiss specialty chemicals group Ems-Chemie, the German safety eyewear manufacturer Uvex and Arburg have been thinking about how they can provide quick help to rescue services, hospitals and medical personnel in the current situation.

The answer: Producing protective goggles to protect the eye and conjunctiva tissue from contamination, intended for specialist personnel such as doctors, nurses and emergency responders.

Dr. Thomas Walther, Head of Application Technology at Arburg, received a „call for help“ from a doctor at the hospital in Rottweil on Monday (30/03). She had heard that, at a trade fair, Arburg had produced protective goggles that she and her colleagues urgently need and asked if he could help her. Thomas Walther passed this request directly on to Gerhard Böhm, Managing Director of Sales, who is already involved in various regional aid initiatives and has also initiated several brainstorming projects of this kind within the company. Both quickly agreed that help could be provided immediately with the resources that were already available. That’s how the „protective goggles“ project started. Gerhard Böhm states: „Whatever we can do in the current situation to help with our know-how and our capacities as one of the world’s largest manufacturers of plastics processing machines, we will put it into action quickly.“

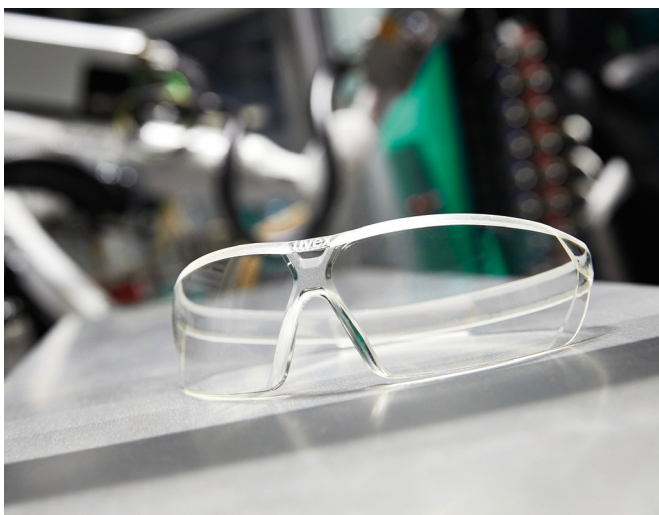
## Partnership between Ems, Uvex and Arburg

Regarding the protective goggles, it quickly became clear that with some coordination measures between the three companies, which had already been working together intensively as partners for a long time, these articles could be produced at Arburg in relevant quantities and with relatively little effort. It was therefore logical that

the production of an initial batch of 20,000 pairs of goggles at the parent plant in Lossburg should begin as quickly as possible in order to remedy the immediate shortage. „Because all three partners know what plastics can do, especially in medical technology. With our campaign, we are making sure that arising bottlenecks are immediately remedied. And this is for the benefit of many of the helpers who are now particularly important,“ says Gerhard Böhm.

## Arburg demonstrates goggles production at the trade fair K 2019

At the plastics trade fair K 2019 in Düsseldorf in October, Arburg demonstrated, together with the eyewear manufacturer Uvex and the material manufacturer Ems-Chemie, the fully automated production of sunglasses as trade fair demonstrators. Thanks to the unbureaucratic coordination between the parties involved, it was quickly decided that the already very dense sunglasses could also be transformed into protective goggles, using the same tools and also the same design. From there, everything else went quickly. After Ems had agreed to the use of the tools and Uvex was willing to make the goggles usable for the new application by means of a quick certification, Arburg set up the production system with removal robot in the new training centre



Uvex protective goggles in the latest design, as they come ready to use from the injection moulding machine. The goggles are distributed to care and medical personnel in Germany and Switzerland via official channels. (Photo: ARBURG)



Quick help: A trade fair demonstrator becomes a highly useful pair of protective goggles. (Photo: ARBURG)

## Arburg and Ems-Chemie provide help

in Lossburg. That's where, from the week before Easter, the goggles are mass-produced in a simplified injection moulding process, they come out of the machine ready to use. They are then packed individually with safety and information data sheets in tubular film bags by hand for final distribution. The material for the first batch of goggles, around 500 kilograms of transparent Grilamid TR (PA12), is provided free of charge by the material manufacturer Ems-Chemie from Domat in Switzerland – help with an European dimension. Once the eyewear packaging has been CE-marked and assembled, „it's quite likely that the distribution can already begin at the beginning of May," says Thomas Walther.

### Protective goggles ready to wear

The goggles are produced in one piece on an electric Allrounder 570 A with a closing force of 2,000 kN and Gestica control in a cycle time of around 50 seconds. Handling and depositing are carried out by a six-axis robot. Bad parts are sorted out and good parts are deposited on a cooling station. The packaging is done downstream by

hand. The packaging is carried out downstream manually by a packaging station of the packaging machine manufacturer Packmat from Villingendorf, which also entered the production chain completely unbureaucratically.

### Distribution through official channels

The cooperation partners Arburg and Ems-Chemie share the first 20,000 pairs of protective goggles and, according to Magdalena Martullo, CEO and main shareholder of EMS, distribute them free of charge via official channels to hospitals, nursing homes and civil defence organisations in Germany and Switzerland. In this context, Magdalena Martullo thanked Arburg again for the unbureaucratic and quick initiative and realisation of the aid idea, which cannot be overestimated in times like these.

ARBURG GmbH + Co KG  
D 72286 Loßburg

# Face masks in record time

## ENGEL and Haidlmair together against Covid-19

**Together with business partner Haidlmair, ENGEL is committed to improving the supply of face masks worldwide. In record time, mould maker Haidlmair developed and implemented a new mould solution for the production of reusable masks, which is now being used by plastics processing companies worldwide. ENGEL is delivering injection moulding machines geared for this, also in record time.**

The two-piece reusable masks, which are injection-moulded from TPE, provide protection for the mouth and nose for use in daily life and in certain work situations, for example in the construction industry. The masks can be cleaned and disinfected and different filter materials can be inserted.



ENGEL and Haidlmair are jointly committed to slowing down the spread of Covid-19: The injection moulding machines specifically tailored to the new mask mould can be delivered particularly quickly. (Picture: ENGEL)

In countries that have exempted face masks from medical device legislation due to the Covid-19 pandemic, these masks can be produced and marketed by companies from a wide range of industries. „This solution allows us to help companies change their production at short notice in order to actively participate in the fight against the further spread of Covid-19," says Dr. Christoph Steger, CSO of ENGEL.

ENGEL offers injection moulding machines specifically tailored to Haidlmair's mould solution. An ENGEL victory 330/80 for the single-cavity version, an ENGEL e-victory 740/160 for the two-cavity version and an ENGEL duo 1560/350 for the four-cavity mould. The ENGEL plants are giving highest priority to producing the machines ordered for Haidlmair's face mask moulds. ENGEL's decentralised machine production ensures the shortest possible lead times worldwide.

ENGEL and Haidlmair have been development partners for many years. „We are a well-coordinated team," says Steger. „And our customers are now benefitting from this, especially in these particularly challenging times."

ENGEL AUSTRIA GmbH  
A 4311 Schwertberg

# Softing Industrial Automation reinforces the Open Integration network

## Endress+Hauser partner program is gaining importance through IIoT solutions

How can field instruments and components be easily integrated into automation systems? The answer to this question is becoming increasingly important as industrial production digitalization progresses. The Endress+Hauser Open Integration partner program unites 13 manufacturers that want to ensure the streamlined interaction of their products. Softing Industrial Automation joined the partner network at the beginning of the year.



"Apart from networking process control technology, connectivity is playing an increasingly important role for IIoT solutions," explains Jörg Reinkensmeier, Marketing Manager at Endress+Hauser.

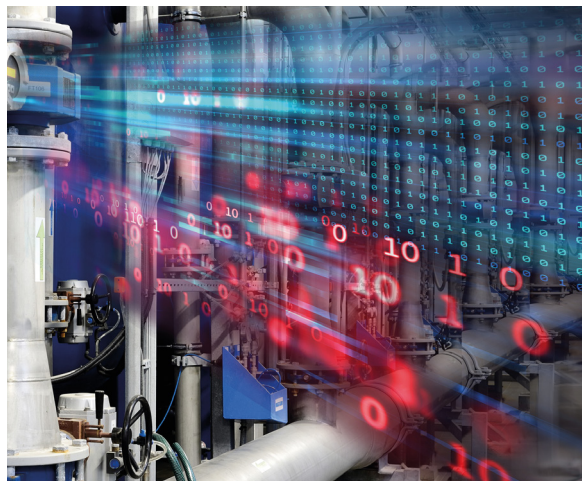


"We're looking forward to the coming years in which we will be helping our partners with the connectivity of their sensors," says Thomas Hilz, Vice President Strategic Accounts at Softing Industrial Automation.

The Open Integration cooperation partners test and document the interaction of their products for typical process automation applications. Users profit in two ways by being able to combine the best products for each application and through fast and smooth commissioning. Automation technology suppliers value the advantages of the Open Integration program as well. For these companies, it's important to be able to detect potential problems early and solve them prior to installing their products at the customer site.

"We go well beyond the established test methods within this program by scrutinizing the functionality of complete system architectures in a lab environment," explains Jörg Reinkensmeier, Marketing Manager at Endress+Hauser. "We do that for specific fields of application or customer solutions. After successful completion of the tests, the so-called reference topologies are published in the form of mutual recommendations."

Thirteen companies currently belong to the program. All the partners are suppliers of control technology, field-bus infrastructures, measurement technology or actuator technology: Auma Riester, Bürkert, Festo, Flowserve, Hima Paul Hildebrandt, Honeywell Process Solutions, Mitsubishi Electric, Pepperl+Fuchs, Phoenix Contact, Rockwell Automation, Schneider Electric, Turck and recently Softing Industrial Automation.



The goal of the Open Integration partner program is to ensure the streamlined integration of intelligent field instruments and components into different automation systems.

### Network technology specialist

Softing Industrial Automation is a leading provider of software and hardware products designed to integrate technologies and data in factory and process automation environments. "Our companies have enjoyed many years of successful cooperation, which has now manifested itself in our decision to join the Open Integration partner program," says Thomas Hilz, Vice President Strategic Accounts at Softing Industrial Automation.

"The reliability and outstanding quality that we know from Endress+Hauser is also a top priority at Softing Industrial Automation. The company, and I personally, are looking forward to the coming years in which we will be helping our partners with the connectivity of their sensors."

"Softing Industrial Automation strengthens our partner program with further expertise in the area of data exchange and providing information at the field level," says Jörg Reinkensmeier. "Apart from networking process control technology, connectivity is playing an increasingly important role for IIoT solutions. Our aim is to exploit this potential together with all of our Open Integration partners."

Endress+Hauser AG CH 4153 Reinach BL 1



Softing Industrial Automation is a leading provider of software and hardware products designed for technology and data integration.

# GMP “Quo Vadis” – comprei at Lounges 2020



Austrian company comprei – cleanroom expert in the field of process-oriented, realistic and tailor-made training as well as application-specific support in GMP questions – was present again this year at the LOUNGES – Cleanroom Processes event.

09th - 11th February 2021: LOUNGES 2021, Karlsruhe (D)

Company representative's involvement went beyond their many discussions with interested visitors at their booth in the VIP3000 area. The company made a high-quality contribution to the LOUNGE's specialist program with the lecture: "GMP Quo Vadis? Trends in Pharmaceutical Quality Management".

Experienced industry expert Dr. Michael Beranek was recruited to provide his academic input on the contentious topic of pharmaceutical quality management. This program point was presented as a double feature and highlighted the pharmaceutical QM system, especially with a view to the Consultation Document on Annex 1, Manufacture of Sterile Medicinal Products of the EU GMP Guidelines and its practical implementation.

In addition to a general overview of the EU GMP Annex 1 revision, the lecturer presented the risk-based approach – which occupies a prominent position in the Consultation Document – and substantiated the approach with practical examples.

For application-specific implementation, Beranek highlighted various methods of risk assessment, their possible tools and visualised the practical applications. The advantages and disadvantages of the methods under consideration were assessed along the

way, taking into account standardised quality criteria. This gave listeners the unique opportunity to recognise the value of different risk assessment systems for different functions and to see their utility in company-specific applications.

One practical example presented was a microbiological monitoring system design, which took into account the critical influencing factors for the design of the required measuring positions. In doing so, the practical implementation of quality risk methods and their instruments were demonstrated in

accordance with the requirements of the EU GMP Annex 1 revision.

For the first time, the practical implementation of the SWOT analysis in systematic relation to a TOWS matrix was shown in detail. It provided a concrete example of a possible risk assessment for pharmaceutical quality management, and highlighted the advantages and disadvantages. This gave the noticeably receptive audience the unique opportunity to experience a linked qualitative and quantitative "Mixed Methods Model" in action (see Fig. 1).

It was shown how the disadvantage of the purely qualitative-oriented SWOT analysis could now be neutralised by linking to the quantitatively oriented TOWS matrix. It offered the possibility of obtaining a key figure-based output from the "Mixed Methods Model" without losing creativity or design freedom during analysis.

With almost 100 attendees, the presentation was one of the best-attended lectures at LOUNGES 2020. The comprei experts present noted the exceptionally positive feedback on the refreshing approach of the double feature, as well as the well-founded input on application-specific implementation. It was followed up by fascinating in-depth discussions that took place at the company's booth. comprei is looking forward to building on this year's successful appearance and inspiring visitors in 2021.

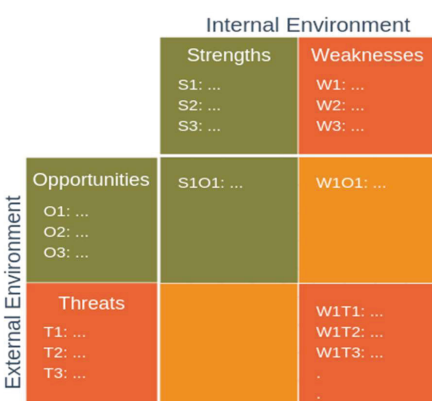


Fig. 1 – Mixed Methods Model

Mehr ...

comprei®

comprei Reinraum-Handel und Schulungs GesmbH  
Europastrasse 10  
A 9524 Villach  
Telefon: +43 4242 44075  
Telefax: +43 4242 41782  
E-Mail: office@comprei.eu  
Internet: http://www.comprei.eu

# Cleanzone 2020 takes the form of a modern city

18th - 19th Nov. .2020: CLEANZONE 2020, Frankfurt am Main (D)

New concept for Cleanzone 2020: The international trade fair for contamination control and cleanroom technology on 18 and 19 November in Frankfurt am Main is being transformed into a modern city. Product groups take the form of city districts arrayed around the marketplace. Cleanzone Avenue leads visitors through the entire cleanroom process.

The tremendous importance of contamination control has been demonstrated yet again by the ongoing fight against the novel coronavirus. Hospitals have been built with lightning speed, and companies from different sectors are suddenly producing medical equipment and supplies. Expertise in hygiene and cleanrooms is in greater demand than ever. On 18 and 19 November in Frankfurt am Main, the Cleanzone trade fair will be inviting professionals to engage in an international exchange on contamination control and cleanroom technology.

The 2020 event features an entirely new product group set-up that mirrors the structure of a city. The product groups are oriented according to material flows in industrial production processes where contamination control is essential, and are arranged as individual 'districts' around a central marketplace. Cleanzone Avenue links these districts and leads visitors through the trade fair. The focal point is Cleanzone Plaza, a marketplace where the Cleanzone Conference fosters international dialogue with a series of captivating presentations. This is also the location of the presentation of the Cleanzone Award, which is given by Wiley-Verlag and its ReinRaumTechnik trade journal in partnership with Messe Frankfurt.

Kerstin Horaczek, Group Show Director for Technology at Messe

Frankfurt, explains: "The arrangement of the product groups according to the structure of a city helps visitors find their way through the complex material flows of cleanroom production processes. Visitors can find all the providers for a particular step of the process in a single district, allowing them to compare what is on offer and get all the information they need. By implementing this new structure, we have further improved the trade fair experience and made a visit even more worthwhile."

## Visitors will be able to explore a total of seven city districts:

- Architecture, Planning, Engineering
- Construction, Building Technology, Material Delivery
- Inward Transfer, Equipment & Fixtures/Furnishings
- Measurement Technology, Validation/Qualification
- Hygiene, Components, Microbiology
- Outward Transfer, Packaging, Shipment
- Training, Regulations, Networking

Cleanzone is aimed at decision-makers from all industries that use or build cleanroom production facilities or that are considering their future use to ensure high product quality – from the pharmaceutical and medical technology industries to the food industry, the field of microtechnology and the automotive industry.

More ...

## cleanzone

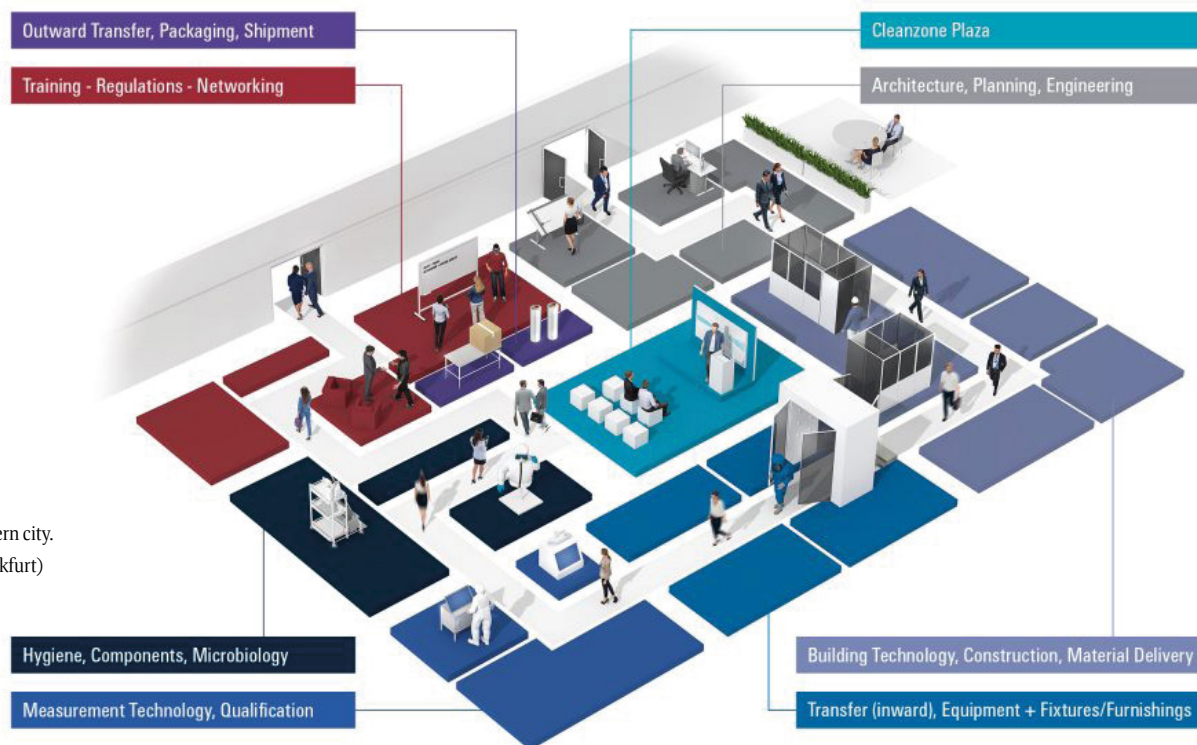
Messe Frankfurt Exhibition GmbH

Ludwig-Erhard-Anlage 1 D 60327 Frankfurt am Main

Telefon: +49 69 7575 6290 Telefax: +49 69 7575 96290

E-Mail: [anja.diete@messefrankfurt.com](mailto:anja.diete@messefrankfurt.com)

Internet: <https://cleanzone.messefrankfurt.com/frankfurt/de.html>



Cleanzone as a modern city.  
(Source: Messe Frankfurt)

# Call for Nominations for theACHEMA Start-Up Award 2021

## Create the Future of Chemistry, Process Engineering and Biotechnology

Entrepreneurial scientists, young founders and owners of start-ups can now apply for the ACHEMA Start-up Award 2021. For the third time DECHEMA, Business Angels FrankfurtRheinMain and High-Tech Gründerfonds are looking for ideas, concepts and business plans in the fields of chemistry, process engineering and biotechnology. For the first time participation is also possible for international founders. The finalists have the unique opportunity to present themselves to an international audience of experts at ACHEMA 2021. Three overall winners will also receive a prize money of 10,000 Euro each.

14th - 18th June 2021: ACHEMA 2021, Frankfurt am Main (D)

The chemical industry is a driver of innovation for numerous other industries. Innovations in chemistry, process engineering and biotechnology can fundamentally improve technologies and products on a broad scale. However, the number of new companies being founded in these areas is low. Good ideas and young companies need support in order to bring innovations to the market and open up new business fields. This requires access to experienced mentors, a strong network and financial resources.

Therefore, DECHEMA, the Business Angels FrankfurtRheinMain and High-Tech Gründerfonds are awarding the ACHEMA Start-up Award for the third time at ACHEMA 2021. Idea providers and company founders can apply now.

The competition has three phases - ideas can be submitted until 31 March 2020, concepts until 31 July 2020 and business plans until 30 November 2020. Particularly in the early phases, applicants have the opportunity from the outset to discuss their concepts with high-ran-



king mentors with specialist expertise and, on this basis, to obtain support for the preparation of their business plans. Already in this early phase, applicants as well as young start-ups founded or in the process of being founded after 1 July 2018 can be given access to potential investors in order to discuss the possibilities of financing. Irrespective of the time of entry into the competition, all business plans submitted by 30 November 2020 will compete for the places in the final round.

Up to ten promising start-ups or start-up ideas will be given the chance to present themselves and establish contacts at ACHEMA 2021 at the ACHEMA Start-up Award stand and within a special pitch and networking session. Three overall winners will also receive a prize money of 10,000 euros each.

The ACHEMA Start-up Award is presented by DECHEMA Gesellschaft für Chemische Technik und Biotechnologie e.V., DECHEMA Ausstellungs-GmbH, Business Angels FrankfurtRheinMain e.V. and High-Tech Gründerfonds. The ACHEMA Start-up Prize is also supported by the German Chemical Society (GDCh), the Association of German Engineers (VDI), the German Chemical Industry Association (VCI) and the German Federation of Industrial Research Associations (AiF) as well as the Business Angels Network Germany and the Forum Startup Chemistry.



# Digital and sustainable services throughout the machine life cycle

## Syntegon Technology Services at the Virtual Show 2020

- Remote Service: from machine support to platforms for spare parts management and training
- New digital solutions for pharma and food
- Sustainability as service focus for food manufacturers

Syntegon Technology is far more than a machine manufacturer: Syntegon supports customers with solutions and services throughout the entire machine life cycle, as the specialist for processing and packaging technology demonstrates at the Virtual Show 2020 from May 7 to 13. The virtual event emphasizes Syntegon's focus on its service portfolio. Amongst others, visitors will see how Syntegon will support them even better with intelligent and sustainable services in the future.

### Remote Services for secure access from afar

Considering the current circumstances, Syntegon not only offers a virtual event, but also provides services from afar. Right now, many customers use Remote Services when they need assistance with machine settings or troubleshooting. Visitors of the Virtual Show can look forward to an exclusive offer for this specific service.

Syntegon also provides further services and consulting offers, for which a Syntegon Technology employee would usually travel to the customer's site, via digital channels. For example, customers can order spare parts via the E-portal, Syntegon's online shop.

Operator training courses are also held virtually. Participants can choose the format according to their individual needs: Syntegon offers web-based and virtual reality training, as well as virtual classroom training on the online platform.



Syntegon Technology offers various remote services with secure remote access, including online operator training and the E-portal for easy spare parts ordering.

### Digital services for trouble-free operations

Digitization also plays a major role in the production environment: pharmaceutical manufacturers benefit from the long-standing experience of Syntegon experts in developing and implementing software solutions. The Pharma i 4.0 Solution Platform, for example, provides plant operators with important OEE data and monitors the status of machines and processes. It also supplies real-time information about events such as alarms or machine downtimes.

In addition to preventive maintenance, predictive maintenance will become increasingly important in the future: „Predictive maintenance makes downtimes foreseeable and ensures trouble-free production,“ explains Muhammed Ali Turac, product manager for digital services at Syntegon Technology. At the Virtual Show, the company presents MIRA (Machine Intelligence Reporting & Analytics) for the first time: thanks to intelligent algorithms, the modular software solution detects wear and tear on process-critical components such as fans. Up to six weeks before a potential failure, it announces that a component needs replacing. „The decisive advantage of this system is that it does not intervene with the machine controls. This means that retrofitted systems do not have to be re-qualified and validated,“ says Turac.

Syntegon Technology ensures trouble-free operations for pharmaceutical manufacturers with the patented Smart Skin Quantifeel™



After customers receive instructions via Remote Service from Syntegon's service experts, they can adjust machine settings accordingly.

## Digital and sustainable services throughout the machine life cycle

system. It reduces downtimes by optimizing the transport of glass containers. Which points in the machine indicate particularly high stress on glass containers due to impact, pressure or rotation? Sensors identify critical processes, which can then be eliminated reliably. This results in fewer downtimes and less waste due to reduced glass breakage.

### Efficient maintenance and optimized production with cloud platform

Thanks to the new, cloud-based Digital Shopfloor Platform, paper-based processes and unnecessary loss of time for maintenance work



Thanks to the new, cloud-based Digital Shopfloor Platform, paper-based processes and unnecessary loss of time during maintenance work are a thing of the past for food manufacturers.

are a thing of the past in the food industry. „Technicians have their task planning as well as all manuals and documentations virtually in their pocket,” says Sven Scharnitzki, product manager at Syntegon Technology. Using the interactive Performance Board with its intuitive interface, employees can see critical manufacturing data such as production time, losses and stops at a glance. They recognize optimization potential faster and can avoid downtimes. In addition, QR codes on the machines make sure that relevant data is displayed promptly and easily. This saves time and resources – and makes daily work easier.

### Upgrade on sustainability

Sustainability is a particularly important topic in the food packaging industry. With the new PHS 2.0 sealing jaw technology, Syntegon now offers a retrofit kit for vertical bagging machines, which reduces film consumption while increasing production speed by up to 25 percent. Food manufacturers looking to test sustainable alternatives for their existing lines can now use Syntegon’s material testing service. The service experts carry out tests on their own equipment so that customers do not have to interrupt their production. Detailed reports and recordings are then analyzed together with the customer.

Find out more about Syntegon Technology’s services at the Virtual Show from May 7 to 13, 2020.

Syntegon Technology  
D 71332 Waiblingen

# POWTECH INDIA postponed to February 2021

**POWTECH INDIA will be postponed due to current circumstances from its initial dates in September 2020 to February 2021. POWTECH INDIA will now take place parallel to HPCI India on 11 – 12 February 2021 in Mumbai. Companies can register for the trade fair with accompanying congress and supporting programme. Since 2010, NürnbergMesse India has been involved in organising events for the powder and bulk solids industries in India.**

**11th - 12th February 2021: POWTECH INDIA, Mumbai (India)**

POWTECH INDIA brings together India’s experts from the production and processing technology environment. Decision-makers from the chemical, pharmaceutical and food production sectors, but also from the energy, recycling and non-metallic mineral (pit and quarry) industries, can find out all about the technologies that matter to them at the exhibition and accompanying congress. The wide range on display and the presence of international market leaders make POWTECH INDIA, which was previously known as Powder and Bulk Solids India, an important industry gathering.

The upcoming POWTECH INDIA will take place at the Bombay Exhibition Center in Mumbai from 11 to 12 February 2021 and will now run parallel to HPCI India. The Home and Personal Care Ingredients Exhibition and Conference India is the only event in India focused on raw materials and techniques for the formulation of cosmetic and

cleaning products. POWTECH INDIA’s strategic partners are the associations APV, VDI-GVC, IND EX and DSIV. Interested exhibitors can still register. Please see [www.powtechindia.com](http://www.powtechindia.com) for updates and further information.

### Processing engineering worldwide

POWTECH World is a global network of trade fairs and conferences related to mechanical processing technology. The events of POWTECH World form the ideal platform for global knowledge-sharing and new, worldwide business connections.

NürnbergMesse GmbH  
D 90471 Nürnberg



# ACHEMA 2021 with a new look and new focus themes

14th - 18th June 2021: ACHEMA 2021, Frankfurt am Main (D)

More modern, more interactive and always at the pulse of the process industry: that will be the hallmark of ACHEMA 2021. With three new focus topics, a new website and new event formats, the world forum for the process industry is entering its next round. Exhibitor registration is open.

A year and a half before the 33rd ACHEMA opens its doors, preparations are already in full swing. This also includes the identification of three focus topics that will shape the industry as a whole affecting all exhibition groups. For the 2021 edition these are

## - Product and process safety

The increasing use of Internet of Things (IoT) devices in plant operation and production puts IT and cyber security at the top of the agenda. Cyber attacks are becoming more frequent. The interplay between the physical and virtual worlds must therefore be secured. Weak spots along the entire value chain have to be evaluated and eliminated, from the procurement of raw materials to the recycling of products at the end of their useful life.

## - „The digital lab“

It's in many cases still a long way to go before intelligent digital workflows will be implemented in a fully networked laboratory. The minimum basis is the construction of a powerful IT environment and fully integrated devices; but it can also go up to a complete redesign and repartitioning of laboratories. R&D laboratories and quality assurance laboratories may pursue different approaches. Therefore, a modular design is just as reasonable for the laboratory as it is for production facilities. Both laboratory types generate a large amount of data, which must be evaluated using big data methods.

## - Modular and networked production

Manufacturing processes in the chemical and pharmaceutical industries must be flexible, fast and cost-effective. Modular process skids that offer these features are pre-assembled, tested in the pilot plant and then assembled on site. The skids are equipped with their own programmable control logic or can be integrated into a higher-level process control system. Module Type Packages (MTP) with open standard interfaces allow for true interoperability. Modular systems are the key to meeting customer requirements for small batches of different products.

And there are yet more novelties: Based on the proven ACHEMA concept with its unique range of topics and the established interplay of exhibition and congress, the organizers at DECHEMA are currently working on new formats that will offer even more opportunities for discussion and networking. These include matchmaking tools as well as new interactive event formats. They are intended to stimulate discussion and provide additional impulses. The hall layout has also been slightly adapted to make optimum use of the structural changes on the exhibition grounds and to integrate the brand new Hall 12, located right in the center.

Thus ACHEMA, which celebrates its centenary in 2020, offers the opportunity to truly experience the latest solutions and products for the process industry and to make global contacts. The newly designed website provides an information centre that not only covers the latest news on the event but also puts a spotlight on important topics, thus giving exhibitors and visitors the opportunity to set the tone and find out about new trends in advance.

DECHEMA Ausstellungs-GmbH  
D 60486 Frankfurt am Main



## Impressum:

cleanroom online / W.A. Schuster GmbH · Mozartstrasse 45 · D 70180 Stuttgart · Tel. +49 711 9 64 03 50 · Fax +49 711 9 64 03 66  
info@reinraum.de · www.cleanroom-online.de · GF Dipl.-Designer Reinhold Schuster · Stgt, HRB 14111 · VAT DE 147811997

Original texts and images

The contributions mentioned by name are the responsibility of the particular author. Reprinting, also of extracts, are permitted only with the approval of the editor and with reference to the source. The publisher does not accept any responsibility for unsolicited manuscripts and illustrations. The publisher is granted the exclusive, spatial, temporal and contentual limited right to freely use the article in unchanged or edited form for all purposes as often as desired or to transfer it to third parties for use. This right of use relates to print and electric media (Internet, databases, data carriers of all kinds).