The benefits of a clean environment in the Electronics Industry

When it comes to sensitive advanced electronics, companies cannot risk any particulate contamination.

Diverse with a wide spectrum of processes, the electronics sector covers semi-conductors, display panels, circuit boards and nanotechnology, among many other applications. The ESD (Electrostatic Discharge) Association estimates that 25% of all electronics damaged for unknown reasons can be attributed to ESD and the cost of damage to the Electronics industry to be $5 billion (USD) per year.

Static electricity is impossible to see, touch or smell; however the results of static charge build up are quite noticeable. Static charge build-up is caused by one of two processes: either by friction between two surfaces or by proximity to an electrostatic field.

Static build up in manufacturing environments often causes a reduction in productivity and a drop in the product quality. Static charges can cause severe damage to sensitive electronic components, requiring costly rework or repair.

Humidity and temperature levels affect static charges. A high humidity removes ESD; however raises the level of moisture in the air, increasing the risk of corrosion and the growth of micro-organisms. Therefore it is important to establish a balance in your humidity and temperature levels to minimise these risks, maintain high levels of quality and reduce overall defects in your finished electronics products.

A suggested relative humidity of 40-60% should be maintained in the manufacturing environment, alongside a temperature range of 20-25°C; however to ensure you are achieving your required level of humidity, a risk assessment should be carried out on each of your individual manufacturing processes. The inclusion of a temperature and humidity control within your cleanroom will ensure that these levels are consistently achieved.

Preventing ESD in your Cleanroom

To minimise the risk of failure to their products, electronics manufacturers must first ensure the cleanliness of their manufacturing space. Connect 2 Cleanrooms understands how critical controlling contamination is to an electronics manufacturer's success and the risks to electronic and nanotechnology components from static charges and UV exposure. Their range of bespoke modular cleanrooms can be constructed using antistatic components that can help ground static electricity, to protect sensitive products from the damage these charges cause – such as latent failure to product.

The inclusion of a temperature and humidity control system within your cleanroom will ensure the recommended levels of humidity and temperature range are consistently achieved.

The most employed method of limiting electrostatic charge is by grounding people and objects. The

The benefits of a clean environment in the Electronics Industry

use electro conductive floorings combined with conductive footwear constitute a key part of this. ESD Anti-fatigue mats and flooring guarantee the lasting elimination of electrostatic charges while taking into account people's safety.

As well as the prevention of ESD, it is important that employees have enough light to carefully handle small components. Connect 2 Cleanrooms can incorporate UV lighting and specialist wall panels to block certain spectrums of UV light within your cleanroom solution.

Selecting ESD and anti-static apparel and accessories for your cleanroom

Cleanroomshop.com, the consumables division of Connect 2 Cleanrooms supplies a range of anti-static and ESD cleanroom apparel, cleaning supplies and furniture, which can monitor and eliminate static or negative pressure.

Antistatic clothing is the most effective way to protect your electronic circuits. ESD Clothing including coveralls, lab coats and footwear eliminates electric charge as well as ensuring the highest standard of particle control, offering your employees both comfort and protection.

Static meters are an effective product for identifying static problems within your processes and the inclusion of the ionising bars can help eliminate the issues identified.

Designed primarily with the electronics industry in mind, the wide variety of high and low ESD chairs suit a range of applications and will ensure your employees comfort over long periods of time within your critical environment.

Anti-static sprays prevent charge generation and other static related problems, with cleaning accessories, such as bin liners being ideal for static sensitive areas where electrostatic contamination can be a problem.

The expert team at Cleanroomshop.com can help advise you on the most suitable products to ensure your critical environment is static-free and dust-free. Call them today on +44 (01524) 813022.

Connect 2 Cleanrooms have proven success in supporting companies in their production capabilities within the electronics sector, supporting new innovations and processes including smart watches, heads up display, aero blades and electronic tablets.

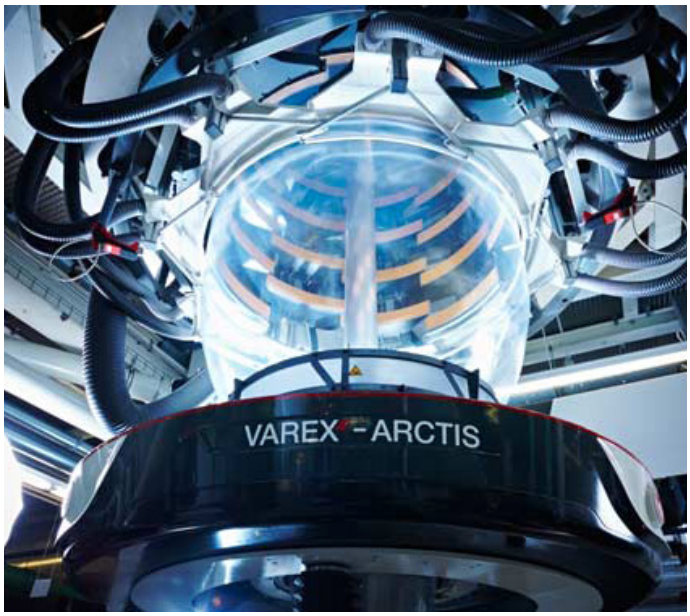
More information on Connect 2 Cleanrooms' modular cleanrooms can be found at www.connect2cleanrooms.com or contact a member of the projects team on +44 (0)1524 813020.

Connect 2 Cleanrooms
Riverside House, Forge Lane
LA2 6RH Halton, Lancashire
Vereinigtes Königreich
Telefon: +44(0)1524 813022
Telefax: +44(0)1524 811589
E-Mail: info@connect2cleanrooms.de
Internet: http://www.cleanroomshop.com

Bischof + Klein is investing in pioneering clean room and film technology

New standards

Demand for high-purity packaging for the pharmaceuticals and medical technology industries has been increasing for a number of years. Bischof + Klein is responding to this trend by investing in a completely new coex extrusion line, thus doubling its extrusion capacities for CleanFlex® clean room films.



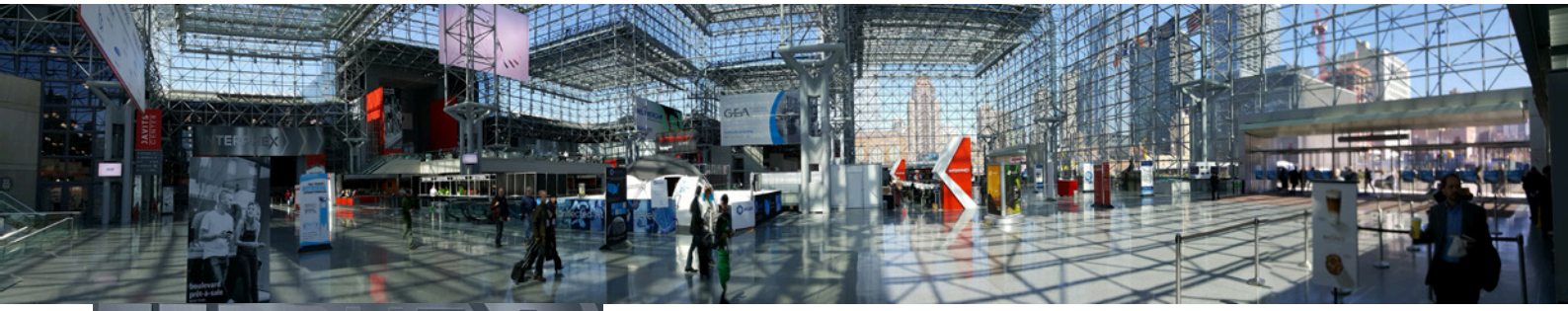
Cutting-edge extrusion and clean room technology is being used at Bischof + Klein

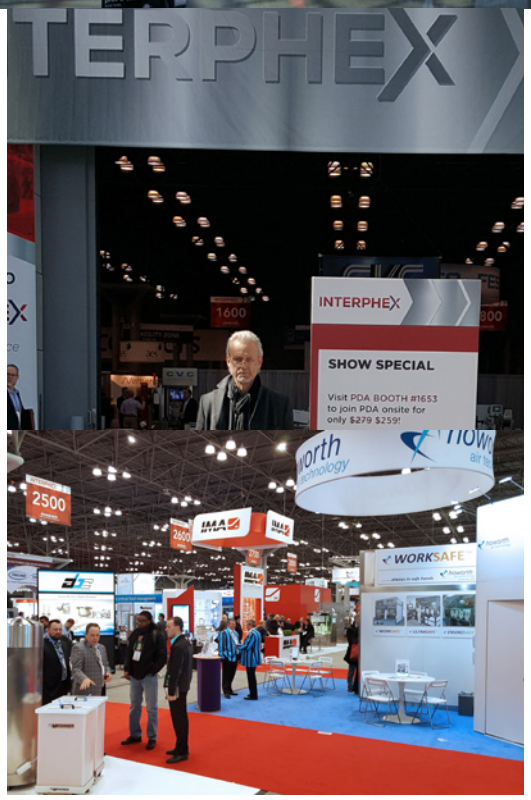
The existing ISO class 5 clean room according to DIN EN ISO 14644 is being extended and a new extruder tower with a total height of 18 metres is being built for this new line. The intention is to manufacture both existing product solutions as well as new developments, which have not yet been produced under clean room conditions, on the new machine. The extension is taking place away from the current clean room extrusion facilities, resulting in two spatially separated extrusion areas. This is also of importance to risk management, as production can switch to another extrusion area in the event of malfunctions, thereby ensuring supply security.

Planning and construction were undertaken using of state-of-the-art clean room construction on the basis of current standards such as DIN EN ISO 14644, and the latest online monitoring technology has been implemented. Following successful initial qualification of the new clean room as well as qualification and validation of the new production line and the products, production is scheduled to start in the spring of 2017.

With this groundbreaking investment in the latest clean room and film technology, B+K is laying the foundations of a new level of quality for its B+K CleanFlex® product range. B+K CleanFlex® sales manager Benjamin Kepp is certain that this investment has really hit the spot, and that the company is once again setting new standards for the future of clean room packaging.

Bischof + Klein SE & Co. KG
D 49525 Lengerich



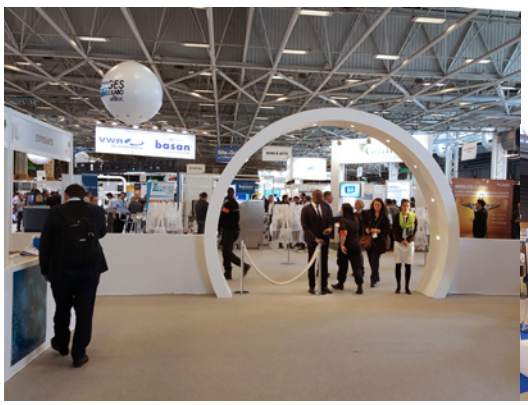


cleanroom online all over the world...

In March I´ve been travelling a lot in the cause of cleanroom, with INTERPHEX in New York and ContaminExpo in Paris being the two most important marking points on my little world tour. In both events I recognized a strong interest in our publication – for understandable reasons especially in our online offerings such as newsletter and web-platform. But even our printed offer (I had brought some printed copies in my luggage) was received so warmly that I will have even to send several copies by (air) mail. This is when it shows to be an advantage to publish in two languages.

I knew in advance that NYC is worth visiting but I was still impressed by the Javits Centre Fairground where INTERPHEX (International Pharmaceutical Expo) was held from 21 to 23 March as well as by the warm welcome in an open and friendly atmosphere which was offered to me on all booths. I could gain a thorough overview of the market and make quite a few important contacts. On top it was great pleasure to meet several "good old friends" from fairs like LOUNGES or cleanzone in the middle of big apple, such as: PMT, MK Versuchsanlagen, SKAN, Bosch Packaging, Burkert, Dockweiler, Dycem, Elpro, Gerflor, Nora, Schreiner, Siemens, Steris, TSI, Vaisala...

It was apparent that Europe is quite far away for American firms as they don´t really show any strong interest to sell their products in here. Those who don´t have European sales partners already seem to avoid the effort and risk to engage themselves abroad. Strong competition seem to be the repellent.



At least, this same reason does not apply to those more than 130 exhibitors of ContaminExpo which was held from 28 to 30 March in Paris. Here too, I met quite a few well known firms such as Camfil, Gerflor, AAF, Initial, M+W Group, Schülke or Steris, which are selling throughout Europe. Maybe the other companies are being put off selling directly here because of the language barrier. I got along with some words in French and some English and finally enjoyed the offered glass at the stand of a Champagne company (seems to be a MUST in France). I think I might go on tour again some day...

Ihr Reinhold Schuster

UV-C disinfection is a technology that has been used for decades to remove bacteria from water, surfaces and air. Its good biological effectiveness against bacteria, fungi, yeasts and viruses is well proven – but the risks to humans are also well known. How can this method be used as an additional kind of disinfection in commercial laundries? What are the best places and purposes to choose for its application? What measures need to be taken to protect workers? Here we give answers to some of the main questions.

UV-C disinfection in commercial laundries: benefits and risks

Biologically highly effective: that's how UV-C disinfection works

Ultraviolet („UV") radiation is invisible to humans. It is optical radiation in the short-wave electromagnetic frequency spectrum – right next to the part of the visible light spectrum which the human eye perceives as the colour violet. UV radiation is divided into three ranges by wavelength: UV-A (400–315 nm), UV-B (315–280 nm) and UV-C radiation (280–100 nm).

Microorganisms that are exposed to UV-C radiation are irreversibly deactivated in anything from seconds to a few minutes. Most bacteria, with the exception of spores, are killed in about 2 minutes even in daylight.

It is because of this excellent biological effectiveness that disinfection using UV-C radiation is used alongside thermal and chemical disinfection, especially to purify drinking water and water for swimming pools, water for industrial processes and sewage water, before it is piped. Work surfaces in clean rooms, isolation facilities, for example in hospitals, and sterile workbenches are treated with UV-C light to kill bacteria. In principle, therefore, both aqueous media and hard surfaces can be microbially decontaminated using UV-C.

Use and benefits in laundries – technical and commercial aspects

When disinfecting with UV-C radiation, the general principle is: where there is any dirt or shadow, the radiation is not effective. Consequently only clean, smooth surfaces that are accessible to the radiation can be effectively treated. So in practice this always means 2 work processes: first, cleaning and then disinfecting. This is an aspect that needs to be taken into account by any company considering using this method – whether as a decontamination alternative for technical surfaces which have previously usually been cleaned by wiping with chemical disinfectants, or for container airlocks that are disinfected thermally.

The use of UV-C disinfection in HGV loading areas is currently the subject of scientific debate and trials. Until now, disinfecting has often been carried out by spraying or wiping. The aim of the research and development is to replace the spraying method, which is not ideal because of its health risks, the risk of explosion and its inadequate effectiveness. UV-C seems to be the method of choice here – but only if it can be proven safe and effective to use.

Health risks and workplace protection

UV radiation in all three frequency ranges, A, B and C, is carcinogenic and can cause skin cancer. This applies particularly to UV-B and to a lesser extent to UV-C radiation. Sunburn, for example, is a clear indication that someone has been exposed to too high a dose of dangerous UV radiation.

That is why the eyes and skin of employees must be protected when working in the presence of this radiation: that is enshrined in EU directive 2006/25/EC and has been implemented in German law since 2010.

A laundry owner is, therefore, like any employer, obliged to measure, calculate and evaluate the UV radiation to which the employees in their company are exposed. This has to be carried out at appropriate intervals and by qualified people or organisations. The data that is collected must also be saved in such a way that it can be viewed at a later date.

On the basis of the information obtained in this way, the employer is then obliged to take measures to limit or avoid UV exposure in order to keep within the legal limits. For UV-A, -B and -C radiation, that maximum radiation dose is Heff = 30 J/m2 over a period of 8 hours, i.e. over a working day.

Special protective measures in laundries

In principle in the laundry industry, a distinction needs to be made between two places where UV-C disinfection systems could be installed and operated: in „enclosed" systems on one hand and „open" systems on the other.

Fully encapsulated or enclosed systems would include, for example, an HGV loading area or the airlocks on laundry containers. Those are areas where no-one is present while the system is operating and from which no UV-C radiation can escape. Here, the workplace protection requirements are met and there is no risk to laundry workers. Incidentally, even where enclosed systems have viewing windows made of normal glass, there is no risk because conventional glass is impermeable to UV-C radiation.

Open systems, where people are present while they are operating and so could be affected by the UV-C radiation, include the pressing area or the laundry sorting conveyor belts. Here, measures must be taken to protect workers. In an ideal situation, that would mean further enclosing the UV-C lamps as completely as possible. Where that is not possible, employees must be provided with appropriate non-UV-Cpermeable protective clothing and goggles.

In practice, as a rule of thumb for open systems, the following applies: if you cannot see the beam of the UV-C lamp, everything is OK. If you can see the lamp shining – be that directly or as a reflection! – then eyes and skin must be appropriately protected with non-UV-C-permeable goggles and UV-C-proof clothing.

Conclusion

UV-C is a sensible option for commercial laundries because of its proven good biological effectiveness in practice. Where and how the technology is best used in individual companies can only be determined by taking account of the specific balance of technical and commercial factors in each case.

Factors to be considered include the suitability of the premises or surfaces, including the required cleaning work, the installation costs for the UV-C equipment, whether it can be efficiently supplemented with other decontamination methods, the number of employees in the company and therefore the cost of the necessary workplace protection measures. These considerations of the costs and benefits should also include risk management in the event of any harm being caused.

Hohenstein Laboratories GmbH & Co. KG D 74357 Hohenstein

Cleanzone takes part in the special showcase "Living in Space" at the Techtextil trade fair

Top theme for Cleanzone 2017: **From cleanrooms to outer space**

17th - 18th October 2017: Cleanzone 2017, Frankfurt am Main (D)

Registration for Cleanzone 2017 off to a successful start

Without cleanroom technology, reliable space exploration would be inconceivable. For satellites to function properly, they must be free of even the tiniest particles of dust, because once a satellite is in space, it cannot be cleaned or repaired. Space probes, such as those sent to Mars to search for life, cannot have any traces of micro-organisms, in order to ensure that they do not generate false results. These demanding requirements can only be satisfied when production takes place in cleanrooms. One of the top themes at the next Cleanzone, the international trade fair and congress for cleanroom technology (17 and 18 October 2017 in Frankfurt am Main), is the importance of cleanroom technology for space exploration. Under the motto "From cleanrooms to outer space", Cleanzone will be taking part in "Living in Space", a special showcase at Techtextil, the leading international trade fair for technical textiles and nonwovens (9 to 12 May 2017 in Frankfurt). Techtextil is presenting this special showcase in collaboration with the European Space Agency (ESA) and the German Aerospace Center (DLR).

Ruth Lorenz, Vice President Technology & Production at Messe Frankfurt, explains: "We are very pleased that Cleanzone is able to take part in Techtextil's "Living in Space" special showcase, as it allows us to demonstrate the importance of cleanroom production for space exploration. With more than 28,000 international trade visitors from a wide range of high-tech industries, including the medical technology, aerospace, chemical and electrical industries, Techtextil offers an outstanding platform for strengthening the importance of Cleanzone, and therefore of cleanroom technology, both in Germany and internationally. Especially with an event that addresses such a wide range of sectors as Cleanzone does, we are able to benefit from tremendous synergies with other international trade fairs here in Frankfurt."

In addition to the importance of cleanroom technology for space exploration, two other top themes for Cleanzone 2017 have already been set: "Digitisation in cleanroom production" and "GMP – a challenge for the life sciences". Digitisation includes the use of robot technology, automation and digital monitoring. Anyone involved in production in the life sciences must orient their manufacturing process according to GMP guidelines. Cleanzone offers best practice examples and presents solutions for new requirements.

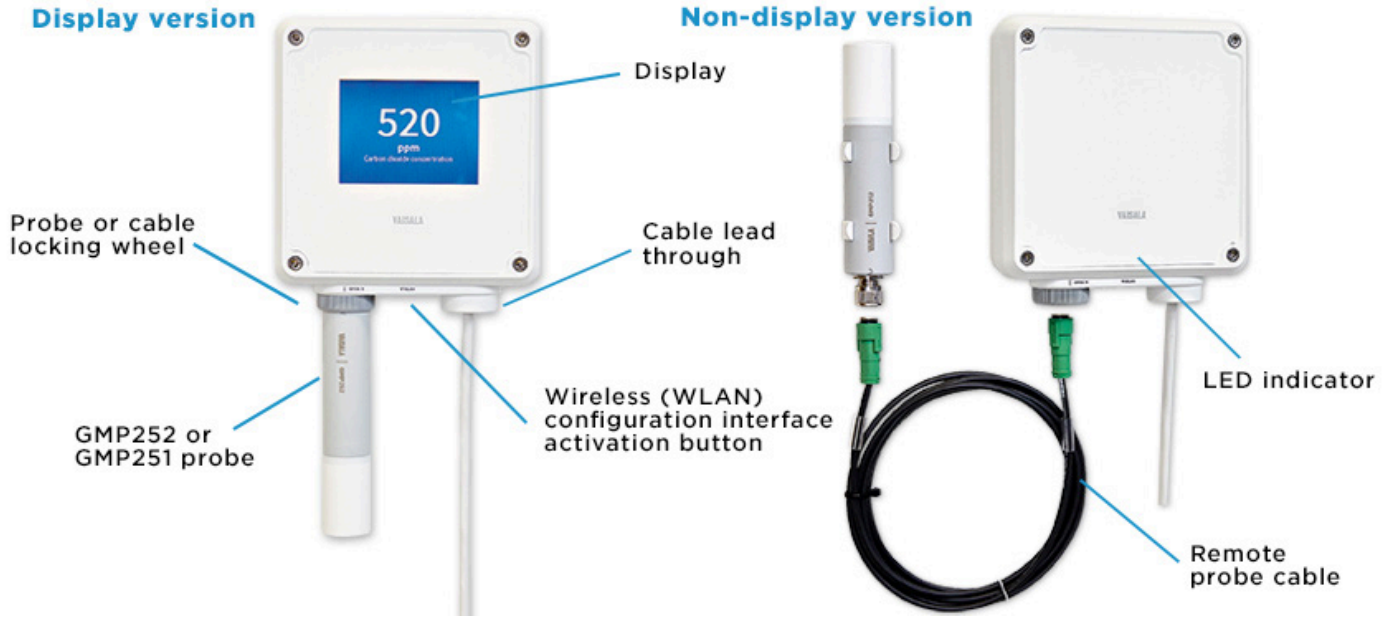
Registration for Cleanzone 2017 kicked off in January, and there has already been a great deal of interest from the industry. Cleanzone's interdisciplinary approach makes it useful for all industries where production is carried out under cleanroom conditions, and focuses equally on the life sciences and micro-technology. The event draws decision-makers from around the world to Frankfurt. More than one third of the trade visitors come to the fair from outside Germany. The products and services on offer cover the entire cleanroom production value chain, extending from the design, planning and constructing of a cleanroom to its validation/qualification, operation and monitoring. Cleanzone 2016 drew 86 exhibitors from 12 countries and 759 visitors from 35 countries*. In October 2017, Cleanzone will be taking place in Hall 1.2.

cleanzone

cleanzone
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
Internet: http://www.messefrankfurt.com

Vaisala launches a new host device for GMP251 and GMP252 carbon dioxide probes. Indigo 201 is a first product in a series of host devices, designed to extend functionalities for existing and future Vaisala's Indigo compatible probes. Indigo 201 provides an optional display, analog outputs and relays, and a wireless user interface accessed easily by, for example, a mobile phone.

Vaisala Introduces a New Series of Host Devices with Indigo 201



The currently available Indigo compatible CO2 probes, GMP251 and GMP252, are designed for harsh and humid environments. They are used in life science incubators, agriculture, cold storages, and in demanding HVAC applications, such as swimming halls.

„Today, carbon dioxide is more and more often used, for example, in refrigeration systems, because it is more environmental friendly and has a lower impact on global warming than the restricted CFC, HCFC and HFC refrigerants," says Maria Uusimaa, Product Manager at Vaisala. At the same time it is important in these systems to monitor the CO2 levels with reliable measurements for human safety.

Wireless Interface Offers Ease of Use

The Indigo 201 uses a wireless user interface for easy configuration: Users can easily configure the host using any device with a WLAN connection, such as a laptop, computer or a mobile phone. Also temporary viewing of measurement data of the attached Indigo compatible probe can be done wirelessly.

The host also allows for minimal downtime as the probe can be easily removed and changed to a new one. Users can also calibrate the probe with the help of Indigo 201.

The measurement result can be shown on the display, or be converted into other formats, for example, analog output signals and for relay activation. These features are useful in various control and monitoring systems, and the relays can be used even to build small scale system to e.g. turn on/off a fan or giving an alarm.

VAISALA

Vaisala GmbH
Adenauerallee 15
D 53111 Bonn
Telefon: +49 228 249710
Telefax: +49 228 2497111
E-Mail: vertrieb@vaisala.com
Internet: http://www.vaisala.com

The EE310 industrial transmitter measures humidity and temperature up to 180°C (356 °F). The multi-functional display gives full information on current and recorded measured data.

High-End Humidity and Temperature Transmitter with Multi-Functional Display

The highly accurate EE310 humidity and temperature transmitter from E+E Elektronik is dedicated for demanding process control. The modern multi-functional display with data logging function enables intuitive operation and offers an optimum overview of the measuring task. Extensive settings and diagnostics can thus be performed directly on the device.

EE310 Wall-mount version with 3.5" TFT colour display. (Photo: E+E Elektronik GmbH)

The EE310 measures relative humidity and temperature, and calculates dew point temperature, frost point temperature, wet-bulb temperature, water vapour partial pressure, mixing ratio, absolute humidity and specific enthalpy.

The 3.5" TFT colour display shows simultaneously up to four measured or calculated values. All settings and even error diagnosis are easily performed with push buttons. The integrated data logger stores up to 20,000 values per measurand. The recorded data can be shown on the display, or downloaded via the USB interface for further processing.

The EE310 transmitter is available for wall or duct mount, as well as with remote probe. Various remote probes can be employed up to 180 °C (356 °F) and 20 bar (290 psi). The probes are also available as pluggable versions for quick and easy replacement.

EE310 Humidity and temperature transmitter from E+E Elektronik. (Photo: E+E Elektronik GmbH)

The E+E proprietary sensor coating brings relevant advantages when it comes to use in harsh industrial environment. It protects the sensing elements from corrosive and electrically conductive contamination, which leads to reliable and long-term stable measurements.

The modular enclosure simplifies installation and maintenance of the EE310. The upper part of the transmitter, which accommodates the electronics and the probe, can be easily plugged off for service or adjustment, while the wiring remains untouched.

The measured values are available on two analogue outputs and the Modbus RTU interface. Two freely configurable relay outputs can be used for control or alarm purposes. Configuration and adjustment of the transmitter can be performed via display or with the free EE-PCS software using the USB interface.

E+E ELEKTRONIK

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

Anniversary: Freudenberg has been producing filters for six decades

60 years of responsibility for clean air and clear water

This year, Freudenberg's filter business will be celebrating an anniversary. Sixty years ago, the pioneer in nonwovens wrote the first chapter of a new success story with the introduction of nonwoven filter mats. From these beginnings, a flourishing business developed, which has been operated since 2009 by an independent company: Freudenberg Filtration Technologies. With around 2,300 employees at more than 30 locations, the company is today one of the world's technology leaders in filtration technology.

Setting trends with innovations

The history of the filter business at Freudenberg has been characterized by technical innovations and market trends since 1957, which the company itself has set. Examples include the development of the synthetic Viledon® compact pocket filters in the 1970s as well as a good decade later the launch of micronAir® automotive cabin air filters. Freudenberg was the first ever supplier to ensure that no dust, soot, pollen, noxious gases and unpleasant odors could enter the interior of vehicles. To this day, micronAir® is the world market leader in the automotive business.

Holistic system provider

What started life as a pure supplier of filter materials has steadily evolved over the decades. Complete cassette, pocket and HEPA filters, filter bags and cartridges have gradually been added to the range. Today, Freudenberg Filtration Technologies specializes in holistic system solutions, which comprises of the engineering, construction and operation of complete filtration plants, including a comprehensive package of services with online monitoring and on-site service technicians.

Technical diversity

The nonwoven medium still plays a significant role in air filtration and is being continuously developed. For example, for several years, Viledon® NEXX filter bags have been fulfilling demanding dust removal tasks in steel works or foundries in a particularly resource-conserving and energy-efficient manner. The basis for this is the filter medium itself: a form of Evolon® optimized for this application. Evolon® is a nonwoven made from microfilaments and was developed and patented by Freudenberg.

Complete service portfolio

In the area of gas-phase filtration for protecting sensitive electronics against corrosion or the treatment of effluents in dairies or whisky distilleries, completely different technologies now supplement the original nonwoven filter medium: for example, ChemControl pellets, Honeycomb modules or Aquabio membrane bioreactors. Freudenberg Filtration Technologies has successfully extended its service portfolio in recent years from its original concentration on the filtration of air particles to completely new applications of this kind. This development into a comprehensive range of products and services from a single source is unique on the market and is a key success factor for the current filter business at Freudenberg.

Global set-up

A further area of focus was and remains early-stage globalization. In the Japan Vilene Company, Freudenberg found a reliable partner in the nonwoven and filter business as far back as the 1960s. Among other regions, the fruits of this strategic partnership are currently visible in China, where Freudenberg and the Japan Vilene Company have been present for 20 years and are producing filters for customers in the Far East at three locations – three of more than 30 sites around the world, through which Freudenberg Filtration Technologies is represented in all relevant markets.

Sustainable solutions for many industries

Filtration technologies from Freudenberg currently ensure clean air, pure gases and liquids in many industrial sectors: in vehicles, gas turbines and compressors, surface treatment, the food and beverage industry, healthcare, petrochemicals and mining. Innovative filtration technologies make processes cleaner, safer and more energy-efficient everywhere. Freudenberg's aspiration is to use its knowledge to support the long-term business of its customers as comprehensively as possible, thereby ensuring greater quality of life. In this way, filtration solutions from Freudenberg have been helping to protect people and the environment against pollution and conserving natural resources for 60 years.

Past and present: Freudenberg exhibition stand, filter mats production and Freudenberg location in Weinheim. (Picture: Freudenberg & Co. KG)

Freudenberg Filtration Technologies SE & Co. KG
D 69465 Weinheim

Josè-Carrera Centre for Somatic Cell Therapy

Reliable Vacuum Supply for Isokinetic Sampling in Clean Rooms

At the José-Carreras Centre for Somatic Cell Therapy at the University Hospital Regensburg, it is imperative that the particles in the air in clean rooms are measured continuously and reliably. The isokinetic sampling is carried out at five sterile workbenches, with the number of particles measured across a defined air flow. The air flow is generated by Mink MV claw vacuum pumps from Busch Vacuum Pumps and Systems. These have an intelligent drive that allows the exact volume of air required to flow past the measuring probe, while ensuring that there is never an irregularity, malfunction or failure after a year of operation [as at May 2015].

Built in 2008 and 2009, the José-Carreras Centre for Somatic Cell Therapy (JCC) is a specialist centre for the pharmaceutical development and production of cell therapy products. It is a facility of the University Hospital Regensburg, located in the Clinic and Polyclinic for Internal Medicine III. The construction of the centre was funded by the José-Carreras-Leukämie-Stiftung e.V., by the European Union as part of its regional support, and by the University Hospital Regensburg. The centre offers all technical possibilities for the development of modern cell-based therapeutic approaches for applications within clinical trials, and therefore represents an important infrastructural premise for numerous translational research projects, both at the university hospital and beyond.

For the aseptic production of medicinal products – which also include the cell therapy products produced at the JCC – the EU guideline for good manufacturing practice (EU GMP guideline) stipulates that the number of particles must be continuously monitored in clean room class A – the highest class. In clean room class A, the particles are measured directly at the five sterile workbenches by means of permanent isokinetic sampling. A partial flow is extracted from the air via the particle counter, which must be exactly one cubic foot/minute (1 cfm) or 28.3 litres per minute. The particle counter uses a laser to measure the number of particles per defined air volume, and transfers the measured values to an independent monitoring system where the permissible thresholds are stored. If a threshold is exceeded, the system triggers a visual and acoustic alarm. However, it is not only the number of particles that are monitored by the monitoring system, but also the adherence to the prescribed flow rate at the individual particle counters. After all, this is the only way to ensure that the measured values are evaluated correctly against the thresholds per cubic metre of air as defined in the EU Good Manufacturing Guideline (GMP). The system also emits an alarm (flow alarm) as soon as the prescribed flow rate is exceeded or falls short.

Originally, a dry-running rotary vane vacuum pump was used for each separate particle counter, which generated the flow rate. There were two major disadvantages to this system. Firstly, it had no redundancy. If one vacuum pump were to fail, it was no longer possible to use the associated particle counter, and as a result the entire sterile workplace was out of use. Secondly, it was not possible to regulate the old pumps, meaning that it was not possible to compensate for fluctuations in the flow rate – and so this would constantly result in flow alarms. Furthermore, the vacuum pumps started to show considerable signs of wear after just a few years and would have to have been exchanged successively.

For the head of operations at the laboratory centre, Dr. Andrea Hauser, this was an unacceptable state of affairs, especially since any disruptions to the continuous particle monitoring are extremely critical when it comes to the production of pharmaceuticals. After each „flow alarm“, a time-consuming troubleshooting and analysis procedure had to be carried out and, if necessary, the particle counters then had to be sent off for inspection and recalibration. This was very costly in terms of both time and money, and in fact was more costly than the price of a new vacuum pump. Operating technician Erich Six therefore contacted Busch Vacuum Pumps and Systems, and together they developed a new concept: a central vacuum supply for all particle counters using two vacuum pumps, which operate according to the Mink claw vacuum principle. These are also equipped with an intelligent drive with a frequency converter, which enables the vacuum pumps to be regulated such that they permanently operate at the required performance, even if the process conditions change. In May 2014, two Mink MV 0040 D claw vacuum pumps were installed in the technical centre of the JCC and operated redundantly. This means that only one of the two vacuum pumps is in operation, while the other acts as a stand-by. The two new vacuum pumps are programmed to maintain a precise standard flow of 28.3 litres per minute at the particle counters. The entire control system for the vacuum pumps was programmed and implemented internally by operating technician Bernhard Horn.

Fig. 1: Two redundant Mink MV claw vacuum pumps from Busch in the engineering room of the laboratory centre.

Mink claw vacuum pumps operate dry, meaning that they are free from operating fluids in the compression chamber and operate contact-free. Unlike dry-running rotary vane pumps, there is no wear, thanks to this method of contact-free operation. It is another reason why this type of vacuum pump permanently generates the required pumping speed. The operation without operating fluids and without wearing parts makes the Mink claw vacuum pump virtually

Reliable Vacuum Supply for Isokinetic Sampling in Clean Rooms

maintenance-free. Both vacuum pumps are connected to the building control system and constantly monitored, with any malfunctions immediately displayed. The vacuum system is in use around the clock, with the control system designed by the technical centre of the university hospital in such a way that the vacuum pumps operate alternately and therefore both spend the same amount of time in operation. In the event that one of the vacuum pumps malfunctioned, the control system would immediately ensure that the other pump springs into operation and the vacuum supply does not fail.

This new vacuum technology has been in operation at the José-Carreras Centre since May 2014, and so far there have been no „flow alarms“ in the clean room or any other malfunctions or disruptions to the vacuum supply. Furthermore, until now [February 2017] no maintenance work has been required on the vacuum pumps. Dr. Andrea Hauser and operating technician Erich Six are confident that the Mink vacuum technology has provided the perfect solution for their vacuum generation.

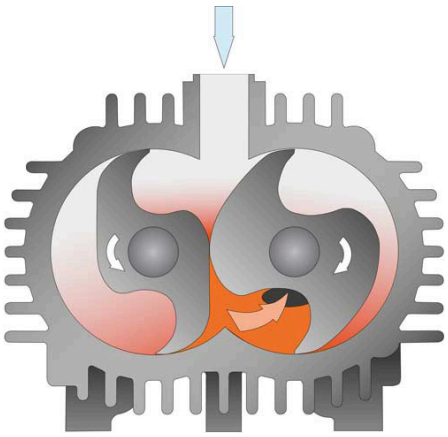


Fig. 2: Operating principle of a Mink claw vacuum pump.

Busch Dienste GmbH
D 79689 Maulburg

Gerresheimer modernizing its Pfreimd site

Gerresheimer is sparing little expense in bringing cutting-edge technology to the buildings at its German production site in Pfreimd. The first phase of the construction process – renovating the whole of the clean room in Hall 2 – has just been completed, with Halls 1 and 3 to follow. This switch to a more powerful, more energy-efficient technology is being driven by a close partnership between the production and building management teams that has seen construction work finish in just eight weeks.

With Hall 2 last undergoing such a major renovation 14 years ago, an overhaul was a logical step, both for quality reasons and in view of the potential energy-saving measures identified. The rebuilding work involved gutting the entire clean room down to its shell and rebuilding it, fitting state-of-the-art ventilation technology equipped with fan filter units (FFUs). The total investment for this construction stage ran into the low seven-figure range. Oliver Burgel (Global Executive Vice President Operations, Purchasing & Quality, Management Board, Gerresheimer Regensburg GmbH, Regensburg) has been impressed by the sheer speed of the rebuild: “This investment marks a clear commitment to Pfreimd – one of our most important sites. Despite a whole host of obstacles including frost, flooding, and material supply issues, the project was accomplished incredibly fast. This couldn’t have been possible without our employees and suppliers working resolutely hand in hand throughout.” One by one, each area of the hall was closed off to production and then renovated over an eight-week period. This meant removing the entire technical infrastructure, including the ventilation, water supply, lighting, and electrics as well as all the walls and ceilings in the space of a fortnight and then completely installing, certifying, and commissioning everything again within six weeks.

Rebuilding work is part of daily life at Gerresheimer’s production sites because virtually every new generation of products in the demanding pharma and medtech market calls for project-specific modifications to the premises. When added together, however, these minor construction measures can unsettle the overall manufacturing and technological balance in a building. This is why a major renovation requires all the various uses of a site to be considered separately from individual projects, evaluating technical availability issues and future requirements and bringing them together in an overall concept. Implementing this concept involved radically overhauling over 3,000 square meters of floor space in clean room PU 2 alone and creating a new production area measuring some 400 square meters. The whole of the airlock zone in PU 2 has been redesigned as a clean-room-type air shower and the working areas outside the clean room have been rearranged as well. As well as the rejuvenating treatment handed out to the buildings and their technical systems, the coolants used in the chillers also now comply with the latest legal requirements, with the new FFU technology ensuring that energy is used much more efficiently. The revamped rooms benefit employees too in the form of more daylight, more space, and less walking to get from A to B.

Hall 2 (assembly line) at Gerresheimer Regensburg GmbH in Pfreimd has been fitted with more powerful, more energy-efficient technology.

Gerresheimer AG
D 40468 Düsseldorf

In mid January 2017, a part of Lindner Group reinvented itself and started with a new name: IWS Lichttechnik GmbH changed its name to Leuchtenfabrik GmbH and merged with Lindner AG´s division Lights and Luminaires.

Leuchtenfabrik: Lights on!

The standard range of Lindner luminaires and custom lighting solutions for projects of all sizes around the world are being produced at the site of the former subsidiary IWS Lichttechnik in Mettenbach near Landshut as well as in the production facilities of Lindner AG in Arnstorf. The main emphasis of the product range lies on ready-to-connect panel and surface mounted light fixtures with efficient LED technology: ranging from project-specific solutions and freely configurable light channels to workplace lamps framelessly integrated in metal ceilings and downlights, including extremely flat panel-mounts for fire protection ceilings and large luminous ceilings as well as elegant pendular lights for workplaces. The range is extended by specialised variants for clean rooms, laboratories and operating theatres, meeting utmost demands on visibility.

Architects, planners and builders profit from numerous years of expertise and innovative developments with high production depth, including an electronics workshop and in-house measurements of light and spectral distribution. Through widespread competences of Lindner Group in interior fit-out and facade construction, interfaces in regard of technology and organisation are effectively minimized. Apart from positive quality aspects, the customer also gains advantages connected with cost and schedule security for projects.

One „wonderful“ example for productive cooperation within Lindner Group can be found within the new German Football Museum in Dortmund. In the course of this project, the Lights and Luminaires Division developed and produced custom LED lights. These are fitted discreetly and neatly into the overall concept and the design guidelines of the Museum while underlining the individual effects of special exhibits. At the very beginning of the tour, on the second floor, is the “kick-off point” with the original ball of the 1954 Finals. The distinctive presentation area with an oblique-angled ceiling suspension features an organically integrated light channel with absolutely homogenous illumination, which puts the theme “The Miracle of Bern” in the right light. This construction required careful and complicated planning as well as precise execution, which was solved through cooperation of three Lindner Departments: Research and Development (R&D), Interior Fit-out and Furnishings (Objektdesign) and Lights and Luminaires.

The newly structured Leuchtenfabrik GmbH adds further capability to Lindner Group in being a reliable partner for architecture and functional illuminations, offering bundled competence in consultation, planning and execution of highest quality requirements.

Leuchtenfabrik GmbH
D 84051 Essenbach

Gerresheimer complements its primary packaging portfolio introducing ready-to-fill vials

- Gerresheimer partners with Ompi, Stevanato Group, to offer standardized solutions to customers
- Ready to fill packaging solutions for vials based on Ompi EZ-fill packaging design
- Ready to fill vials and cartridges will extend the broad Gerresheimer portfolio

Gerresheimer, a worldwide leader in primary packaging solutions for the pharmaceutical industry, will enhance its portfolio by adding Gx RTF vials. Ready-to-fill or ready-to-use vials are the state of the art solution to fulfill customer requirements regarding quality, flexibility and less complexity. To achieve this, Gerresheimer and Ompi have signed a mutual agreement in order to allow Gerresheimer to use the Ompi EZ-fill packaging technology. The new products will provide the customers with more flexibility: either with small batches, initially at the clinical trials stage, or with industrial production.

“Our new portfolio will meet the growing demand for comprehensive solutions. Together with Ompi we will make a further step towards establishing one standardized platform for ready-to-fill vials, which make the customer process very easy and smooth,” said Uwe Röhrhoff, CEO of Gerresheimer AG.

“We’re glad our leading technology has been adopted by Gerresheimer. Our solution, which has proved to be scalable, will benefit the customer with more flexibility, increased quality and safety and quicker time to market,” said Mauro Stocchi, General Manager Pharmaceutical Systems division at Stevanato Group.

Vials are the standard primary packaging for parenteral drugs. Gerresheimer offers vials in all sizes corresponding to international standards and pharmacopoeia requirements. The Gerresheimer offering does include solutions for biotech and other specialist pharma drugs. The new Gx RTF vial portfolio will be based on already established quality offerings for vials like PharmaPlus and Elite Glass. By adapting this knowledge to vials and combining it with the well-established Ompi EZ-fill packaging solution provides added value to customers, enabling them to source one identically packed vial from two suppliers.

Ready-to-fill vials are washed and sterilized solutions provided in trays or in nests and tubs. The pharmaceutical customer can immediately fill the ready-to-fill vials without any further process. Gerresheimer has been producing RTF glass syringes (ready to fill) for more than 15 years already and has recently launched RTF COP syringes produced in Europe.

Gerresheimer AG
D 40468 Düsseldorf

Concentration measurement technology bolsters flow portfolio

Endress+Hauser acquires SensAction

Endress+Hauser has acquired SensAction AG, a manufacturer of innovative systems for measuring the concentration of liquids. With this move, the Switzerland-based Group intends to strengthen its quality measurement portfolio. SensAction will remain headquartered in Coburg, Germany and keep the current staff of 13 employees.

SensAction will operate as a division of the Endress+Hauser center of competence for flow measurement technology headquartered in Reinach, Switzerland. "This innovative technology is an excellent fit with our modern flow measurement portfolio," says Dr Bernd-Josef Schäfer, Managing Director of Endress+Hauser Flowtec AG. "It allows us to further expand our range of products for measuring quality parameters."

Already, Coriolis flow measurement devices from Endress+Hauser can determine not only mass flow, but density as well. Electromagnetic instruments are capable of measuring conductivity parallel to the volume flow. "These physical analysis parameters create direct value-add for the customer," emphasizes Bernd-Josef Schäfer. Endress+Hauser plans to integrate the SensAction instruments into its own program and open up new markets via the Group's international sales structures. In addition, plans are in place to eventually combine the technology direct with Endress+Hauser flow instruments.

Innovative technology

The systems from SensAction measure the concentration of liquids with the help of surface acoustic waves, which are high frequency sound waves whose behavior can be compared to seismic waves created by earthquakes. By analyzing the transmission time and amplitude, the acoustic parameters of the liquid, such as sound wave velocity, impedance and density, can be measured in order to quickly and precisely determine the concentration. Because they contain no moving parts, the systems are maintenance-free and do not suffer from wear-and-tear.

Apart from developing and manufacturing concentration measurement systems, SensAction also offers supplementary services, such as software products that rely on a laboratory measurement to provide a high degree of accuracy and user-friendliness for the customers' applications. The key fields of application for the SensAction instruments include concentration measurements for liquid process media.

The acquisition of SensAction will be effective retroactively from 1 January 2017. Both parties have agreed to not disclose the details of the transaction. Stefan Rothballer and Michael Münch, two of SensAction's founders, will continue to manage the innovative company's business.

Endress+Hauser AG
CH 4153 Reinach BL 1

Endress+Hauser has acquired German company SensAction. The company's LiquidSens systems determine the concentration of liquids in process and laboratory using surface acoustic waves.

SensAction nutzt die Technologie des akustischen Wellenleiters erstmals auch in einem mobilen Messgerät.

The managing directors of SensAction, Stefan Rothballer (left) and Michael Münch.

The online version of the LiquidSens measurement system for integration in a plant.

M+W Group on a Successful Streak with Semiconductor Awards

Leading global high-tech engineering company, M+W Group is celebrating their recent successes in semiconductor projects with awards in both China and Taiwan.

M+W Group in China has recently received the "Excellent Contractor Award" from Semiconductor Manufacturing North China (Beijing) Corp. (SMNC) for the "SMNC B2A Cleanroom Project".

This award was in recognition of M+W Group's outstanding project execution performance for the "Design and Build" of a total 30,000 square meter Class 100/1k Cleanroom 300mm wafer fab, the SMNC B2A Cleanroom Project.

M+W Group was the only contractor invited to the "B2A Cleanroom Completion Ceremony" by SMNC. This is testament to the client relationship and recognition of the company's solid performance. The Chief Operating Officer/Executive Vice President of SMNC China, Dr. Zhao Haijun, made a sincere and appreciative speech during the ceremony and presented the Excellent Contractor Award to M+W Group China's Chief Executive Officer, Mr. Frank Lorenzetto.

In addition to China's success, M+W Group in Taiwan has won the „Excellent Equipment Supplier" for their work associated with the Taiwan Semiconductor Manufacturing Company's (TSMC) F2&5 Project.

M+W Group's Taiwan Managing Director, Mr. Detlef Nagel who has been based in Hsinchu, Taiwan with the company for over 20 years said "This is another solid performance and terrific achievement demonstrating M+W Group's commitment to the advanced technology facilities core market. It reinforces the strength of our team and highlights the value we bring to top tier clients like TSMC."

M+W Group was represented at the 2017 Semicon China exposition which was held during 14th to 16th March at the Shanghai New International Expo Center. This is the largest gathering in the world for major players in the global semiconductor industry.

M+W Group GmbH
D 70499 Stuttgart

Pharma-Multi-Act Combines Cleverly Designed Marking with Practical First-Opening Protection

Innovative Syringe Label

Schreiner MediPharm has developed a novel marking solution for syringes: Pharma-Multi-Act. The label, together with the cap, is easy to open with one flick of the wrist, which makes it particularly user-friendly. Pharma-Multi-Act also offers reliable and irreversible first-opening indication and may include various additional security and indicator functionalities. At interpack in Düsseldorf from May 4 to 10, 2017, Schreiner MediPharm will be presenting the wide range of possibilities offered by the label's special design as part of its lineup of innovative solutions in Hall 7A, Booth B02.

Pharma-Multi-Act by Schreiner MediPharm has a unique feature: a label-integrated perforated tab that ends on the syringe cap. The marking label's first-opening indication is automatically triggered along the perforation when opening the cap. As a result, the label and the container are opened at the same time by a single flick of the wrist, without requiring another step to remove the seal.

Syringes require special tamper protection solutions that can be activated fast and effectively without impairing the injection process: the fewer moves needed and the simpler the activation, the better. In many cases, it is also necessary to document the administered medicine in the patient's file or vaccination card.

In the process of opening Pharma-Multi-Act, a readily accessible, detachable documentation label is exposed on the cap, which can be easily peeled off even with gloves. In addition, the area underneath the detachable label can be used as an indicator field for various functions. Examples range from an initially covert warning message, an additional security feature for authentication, an integrated NFC chip for interactive applications through to a temperature or UV indicator that is activated by opening the label.

04th - 10th May 2017: interpack, Duesseldorf (D)

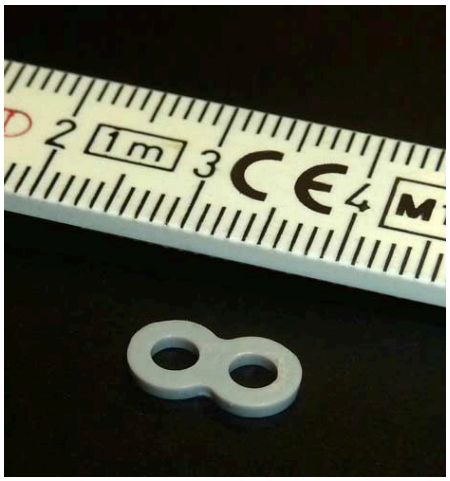
Schreiner MediPharm
D 85764 Oberschleissheim

Plasticizing unit of an injection moulding machine for micro injection moulding

BOY obtained another patent

BOY was granted a new patent so that the company extends its portfolio by another important division.

From the simple production of small parts to the production of precision and micro-injection moulding parts, the screw piston plasticizing unit with a diameter of 8 mm offers the ideal solution for micro-injection moulding and short dwell times.



Micro-Osteosynthesis plate with a part weight of only 0.078 g

For the first time at the last Fakuma the world premiere of the smallest screw piston plasticizing unit was presented.

Thus, BOY sets new standards in the serial production of micro parts and smallest parts as well. The screw piston plasticizing unit scores with a significantly shorter dwell time of the plasticized material in the screw channel without pre-plasticizing. With a pitch volume of only 1.9 cm^3 the BOY XS offers with this plasticizing unit a big advantage in the processing of thermally sensitive materials.

For example, when producing micro-osteosynthesis plates (see photo) with an injection volume of only 0.06 cm^3 and a part weight of 0.078 g on a BOY XS, the material PBT remains in the plasticizing unit for only about 5 minutes. Compared with 12 mm diameter screw the dwell time is reduced by more than 75 per cent and in case of a 14 mm diameter screw by approx. 82 percent.

Reduced dwell time due to lower pitch volume

Short dwell times of the material within the plasticizing unit and a more gentle material processing after the First in - First out


Bundesrepublik Deutschland

Urkunde

über die Erteilung des
Patents Nr. 10 2015 116 625

Bezeichnung:
Plastifiziereinheit einer Spritzgießmaschine für das Mikrospritzgießen

IPC:
B29C 45/58

Inhaber/Inhaberin:
Dr. Boy GmbH & Co. KG, 53577 Neustadt, DE

Erfinder/Erfinderin:
Kaiser, Martin, 56567 Neuwied, DE; Schiffer, Alfred, 56593 Obersteinebach, DE

Tag der Anmeldung:
30.09.2015

Tag der Veröffentlichung der Patenterteilung:
12.01.2017

Die Präsidentin des Deutschen Patent- und Markenamts

Cornelia Rudloff-Schäffer

München, 12.01.2017

Den aktuellen Rechtsstand und Schutzumfang entnehmen Sie bitte dem DPMAregister unter www.dpma.de.

offer advantages in the processing of temperature-sensitive materials.

The range of applications covers medical technology, automotive and electronics as well as optics and microfluidics.

The 8 mm plasticizing unit was included in the BOY product portfolio as a supplement to the BOY XXS and XS.

Dr. Boy GmbH & Co. KG
D 53577 Neustadt-Fernthal

M+W Group receives Chinese Grade A License as a Building Project General Contractor

M+W Group has recently been granted the Grade A Building Project General Contractor License Certificate from the Ministry of Housing and Urban-Rural Development of the People's Republic of China. This license enables the company to build a wide range of high-tech engineering projects throughout the country.

M+W Group's Chinese subsidiary, M+W Shanghai Co. Ltd., has recently received a Chinese Grade A General Contractor License as a Building Project General Contractor. This certification is the result of a complete official audit of related project references and staff qualifications confirming M+W Group's world class in-country capabilities. The license was issued after a thorough review by the Ministry of Housing and Urban-Rural Development of the People's Republic of China.

This important recognition builds on the "Grade B Building Project General Contractor License" that M+W Group had held for many years. The Grade A General Contractor License makes M+W Group one of only two Wholly Owned Foreign Enterprises to obtain distinction as a Grade A Building Project General Contractor. Having this important license means that M+W Group in China is qualified to fully execute all Advanced Technology Facilities including Semiconductor, Display and Battery as well as Life Sciences, Chemical projects and Data Centers.

"This is a tremendous achievement for our operations in China. Our clients will benefit from having a trusted partner to fully deliver all building components along with critical process and building services. This will maintain continuity of work flow and improve speed-to-market outcomes; thus providing second to none technical expertise and a competitive advantage in our dynamic domestic environment," expressed Mr. Frank Lorenzetto, Chief Executive Officer, M+W China.

This latest achievement complements M+W Shanghai Co. Ltd.'s existing Grade A Mechanical & Electrical Project General Contractor License.

M+W Group GmbH D 70499 Stuttgart

Changes have been made to M+W Group's executive board. Dr Wolfgang Büchele will be the new CEO and Mr Roberto Penno will be the new COO.

New leadership at M+W Group

Effective 1 March 2017, M+W Group has appointed a new Chief Executive Officer (CEO) and a new Chief Operating Officer (COO).

The former CEO, Dr Herbert Demel left on 28 February 2017, passing the baton to Dr Wolfgang Büchele. Herbert Demel had joined M+W's executive board in January 2014 and assumed its leadership in November 2014.

From 2014 until the end of 2016, Dr Wolfgang Büchele, who holds a PhD in chemistry, was CEO at Linde AG. From 2012 until 2014, he was CEO of the Finnish chemicals company Kemira, and before that, from 2009 to 2011, he held the same position at the Hungarian chemicals company BorsodChem. Previously, Dr Büchele gained extensive experience in plant engineering and construction during a 20-year stint at BASF AG. He is Chairman of the supervisory board at Merck KGaA, member of the board of directors at Kemira Oyj, and Chairman of the Ostausschuss der Deutschen Wirtschaft (Committee on Eastern European Economic Relations).

Georg Stumpf, the owner and supervisory board chair of M+W Group, said, „We are delighted to have been able to get Dr Büchele to join M+W Group. Wolfgang Büchele is an internationally renowned personality and a most successful executive who has gained comprehensive experience particularly in the industries we are operating in. We are certain that he will successfully continue developing M+W Group's business."

The COO position at M+W Group is likewise being newly staffed. The previous incumbent, Dr Friedrich Schneider, left his position on 28 February 2017 and the vacancy will be filled by Roberto Penno on 1 March 2017.

Roberto Penno brings longstanding expertise of high-tech plant engineering and construction. He studied mechanical engineering and during the past 29 years had a number of roles at Amec Foster Wheeler (formerly Foster Wheeler). In 2015, he became Group President for AMEASE (Asia, the Middle East, Africa, and southern Europe) and from 2013 to 2015 he headed Amec Foster Wheeler's Engineering & Construction Group. Before this, from 2010 until 2013, Roberto Penno was CEO for Asia/Pacific at Amec Foster Wheeler and even before that, he had a number of management positions in Singapore, North America, and the UK.

Georg Stumpf commented, „Filling the COO position with Roberto Penno proves our focus on project implementation and operational excellence. I am very pleased to have won Mr Penno, a hugely experienced EPC manager."

The two new members of M+W Group's leadership team and Wolfgang Homey, who has been Chief Financial Officer (CFO) for three years, will be M+W Group's new executive board. The board is greatly invigorated by the addition of this longstanding management and comprehensive industry expertise.

Regarding his new position, Wolfgang Büchele said, „I am hugely positive about M+W's great potential. The company has exceptional engineering expertise and a superb market position. To be sure, the markets are challenging, but, not least based on wide-ranging modernizing activities in global industry, M+W Group possesses truly substantial potential for profitable growth."

Roberto Penno said, „M+W Group is a noted EPC business with an impressive history of success in dealing with sophisticated engineering challenges. I am accordingly very happy to be able to participate in shaping the future of this company that has so much expertise and experience."

Georg Stumpf thanked Dr Demel and Dr Schneider for their efforts and their service in managing the company. M+W Group's supervisory board wished both gentlemen all the best for their professional and private future.

M+W Group GmbH
D 70499 Stuttgart

Gerresheimer's Indian subsidiary Triveni was a first time exhibitor this year at Asia Pharma Expo in Dhaka, Bangladesh. It presented plastic primary packaging products that have been specifically developed for the pharmaceuticals market, including several new products for the reliable and user-friendly packaging of solid and liquid dose medications. Triveni's current highlights were the first multilayer containers made in an injection blow molding process and the eye drop bottles.

Triveni exhibits for the first time at Asia Pharma Expo in Bangladesh

08th - 10th Feb. 2018: Asia Pharma Expo, Dhaka (Bangladesh)

Proven designs for diverse pharma products

The right choice of packaging for a pharmaceutical drug ensures that the active ingredient can be optimally stored until it is administered to the patient. "Our products are perfect for pharmaceutical applications," said Subodh Gupta, Managing Director of Triveni in India, adding that all the products in the Triveni family are FDA-registered and documented.

The Triveni product family

The plastic containers and closures are available in several hundred standard designs. They are manufactured in the colours of beige and brown, and come in different wall thicknesses and weights. All containers can be delivered with CT- (tamper-evident) and CR- (child-resistant) caps. The range includes the Triveni Round and Triveni Square containers, and the Triveni Black Lining for the effective protection of light-sensitive active ingredients. Triveni Dry Syrup is a plastic container for cough syrups.

New! Triveni Round Protect

The new Protect features deliver enhanced protection against water vapor and oxygen to sensitive pharmaceutical drugs. It is the first plastic container with a multilayer structure manufactured in an injection blow molding process.

Eye dropper bottles

Triveni offers innovative high-quality eye dropper bottles. They are available in the sizes 5 and 10 ml with droppers and caps. The products are made by state-of-the-art technology and applied the most rigorous quality and hygiene standards. The entire manufacturing process is certified in accordance with ISO standards. Last year a tamper evident ring was introduced for the type A bottle which is firmly affixed to the open bottle.

Gerresheimer AG
D 40468 Düsseldorf

Every year, some 25,000 people die in the European Union from antibiotic-resistant, hard to treat bacteria. Although there are diagnostic methods in place to recognize such resistances in advance, these are typically very time-consuming. Researchers from the Center for Bioinformatics at Saarland University, in cooperation with the molecular diagnostics company Curetis, are developing techniques to uncover these dangerous resistances a lot faster. Their secret weapons: a comprehensive gene database, and powerful algorithms. The researchers will be presenting their rapid test procedures, and their outlook for the future, at Stand E28 at the Cebit computer trade show in Hannover, Germany.

Cebit 2017: **Computational Biologists Predict Antibiotic Resistances Using Biotech**

Time-consuming: Bacteria have to be cultivated in nutrient media in order to detect resistances. Special tests and gene data are designed to provide faster and more reliable results. (Photo: Curetis)

Professor Andreas Keller (Photo: Universität des Saarlandes)

Just a few days ago, the World Health Organization (WHO) published a list of twelve antibiotic-resistant bacterial strains, which are considered to be the „greatest threats to human health".

Andreas Keller, professor for Clinical Bioinformatics at Saarland University, is also studying these bacterial resistances. "If a patient receives faster access to the treatment best suited to fight the disease in question, it is not only to the benefit of the patient. It also helps dispensing currently available antibiotics in a more targeted manner, so that the development of resistances can be slowed down," Keller explains.

Existing methods to uncover these resistances in bacterial strains are very time-consuming. First the bacteria are grown in Petri dish nutrient solutions. Once a culture is visible, its response to antibiotics can be tested. But until the result is conclusive, the patient's precious time goes by. "It can take some 24 to 72 hours for the doctor to know for sure which antibiotic to use for the respective treatment. But medical professionals will rarely let a patient suffer for that long, so they tend to rely on their experience," says the Chief Commercial Officer of Curetis, Achim Plum. "It's not much use to patients, if doctors pick the wrong antibiotics. What is more, with every antibiotic use, the risk of generating resistant pathogens is increased. And since bacteria multiply very quickly, this is like evolution in time lapse," says Plum. The company from Southern Germany already offers rapid-test procedures with specialized molecules that detect pathogens, and their specific resistances, for various conditions including pulmonary infections, tissue and transplant infections, and infections of the blood or abdominal cavity. Plum: "We are currently using genetic markers for antibiotic resistances that have been known for a while. In this manner we can cover the most common resistance mechanisms. But we are also aware that there are still resistances that elude us. This is why we are also trying to decipher those mechanisms that may be uncommon at present, but could become a major threat in future. But in order to develop more efficient test procedures, we need studies of hundreds or thousands of pathogens that have been isolated from patients. We are looking for the complete genetic information of pathogens, as well as their response to common antibiotics, so that we can establish links between antibiotic resistances and the genetic changes that prompted them."

For this purpose, Curetis acquired the genetic library GEAR ("Genetic Antibiotic Resistance and Susceptibility") from the Siemens Technology Accelerator in September 2016. The database and associated platform were developed in collaboration with two universities: The Institute of Clinical Molecular Biology in Kiel was responsible for bacterial gene sequencing, while Andreas Keller and his working group on Clinical Bioinformatics at Saarland University focused on the computer-aided data analysis of the 30-terabyte database.

"Bacteria are uncannily clever, and very quick to act upon their genetic predispositions for resistance. Thanks to GEAR, we can now better understand their individual stra-

Cebit 2017: Computational Biologists Predict Antibiotic Resistances Using Biotech

tegies," says computational biologist Andreas Keller. The foundation of this genetic library is a global database comprising several decades' worth of information. Currently GEAR contains data on 11,000 bacterial strains, isolated from patient samples from all over the world over the past thirty years, and their respective reaction patterns to 21 common antibiotics.

With the help of this data, researchers can examine genetic abnormalities associated with certain antibiotic resistances. "It's like a gigantic puzzle," Keller says, and quickly extrapolates that the data collected is equivalent to about 500,000 Bibles. But his algorithms and first results give him confidence: "We can already accurately predict resistances 85 percent of the time."

Resistances develop dynamically, no matter how common or novel the antibiotic in question is. So the GEAR database needs to be adaptable in future as well. "Antibiotic resistance is one of the most urgent health care problems in the world, and research should be well-coordinated. We are planning to expand GEAR into a joint research platform for antibiotic resistances, helping to close the ranks between academic research, public healthcare, and health industry," says Achim Plum.

Curetis AG
D 71088 Holzgerlingen

Bosch underlines line competence for liquid pharmaceuticals

- Easy scale-up with Pharmatec pilot fermenter
- Downflow booth as meeting room
- New KLV inspection machine for CCI vacuum leak detection

04th - 10th May 2017: Interpack 2017, Düsseldorf (D)

At Interpack 2017, Bosch Packaging Technology presents new developments from its comprehensive portfolio for liquid pharmaceuticals. "We offer solutions and line concepts – from development and production through to filling, inspection, packaging and services, all featuring exceptionally high flexibility regarding products and packaging types," says Christian Treitel, head of pharma business development at Bosch Packaging Technology.

From laboratory to production scale

The Bosch subsidiary Pharmatec already supports customers with suitable equipment during biotechnological drug production. The pilot fermenter on show at Interpack is suited for both laboratory and industrial manufacture of pilot batches for cell cultivation, for instance for the use in cancer medication. Thanks to different mixing

Line competence for liquid pharmaceuticals: Bosch offers solutions and line concepts from development and production to filling, inspection, packaging and services, which all feature high flexibility regarding products and packaging types. (Picture: Bosch)

Bosch underlines line competence for liquid pharmaceuticals

technologies, it processes batches between eight and 50 liters. Via scale-up, batch sizes can even be increased to 200 liters.

New ALF 5000 stand-alone version for vials

For production-scale filling and closing of liquid pharmaceuticals Bosch showcases the ALF 5000 vial version for the first time. To date, customers could fill either ampoules or vials and ampoules on one machine. Now the proven platform is also available for vials only. The machine shown at Interpack is equipped with 100% in-process control and a carrying rake transport system, which provides an even gentler handling. The ALF 5000 achieves an output of up to 600 containers per minute and can be combined with different barrier systems – a competence, which Bosch also demonstrates at Interpack.

Comprehensive barrier competence

Apart from proven isolator technology and open Restricted Access Barrier Systems (RABS), closed RABS and the newly developed return air filter for highly potent products now complete the portfolio. In contrast to the commonly used safe change filters, which are situated in the technical area, the new return air filters are integrated into the machine. This saves time and facilitates cleaning, because the highly potent substances are already filtered at point-of-use. Moreover, the filter exchange is particularly easy and safe: there is no contact between the operator and the contaminated filter medium.

Containment and operator safety are also the focus of the downflow booth. Usually, the booth is used for manual weighing and dosing of powders. By supplying fresh air from the ceiling and drawing dust away from the operator, he can work with the substances in the closed space without safety concerns. As a tradeshow highlight, the downflow booth is converted into a meeting room for customers.

CCI portfolio completed

When it comes to the inspection of filled containers, Container Closure Integrity Testing (CCIT) is becoming increasingly important. With the KLV 1360, Bosch presents a new development for vacuum leak detection of rigid containers, which combines the highest inspection accuracy with maximum output. Together with fully automated solutions for high-volume leak detection and laser-based headspace analysis (HSA), Bosch can now offer an entire portfolio of CCI technologies. Benchtop devices for visual inspection, HSA and vacuum leak detection provide an additional overview of the broad inspection portfolio.

Portfolio for barrier and isolator technology completed: At Interpack, Bosch shows how pharma manufacturers can protect operators from highly potent substances through different barrier technologies. (Picture: Bosch)

End-of-line assembly and packaging technology

The semi-automated MSA from the Bosch subsidiary Moeller & Devicon is designed for the assembly of multi-part single-use auto injectors or pens, which are used for the treatment of autoimmune diseases or in emergency care. With its compact and hygienic design, the MSA platform is suited for the assembly of small volumes between five and 15 pieces per minute. Thanks to standardized modules it can also be upgraded for larger batches and fully automated production, offering drug producers the flexibility to adapt quickly to new market demands.

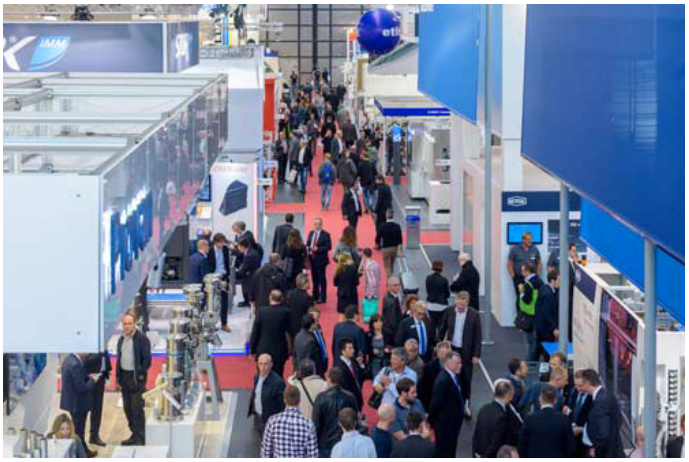
Further technologies, such as product and equipment sterilization from the Bosch subsidiary Schoeller-Bleckmann Medizintechnik (SBM) complete the equipment portfolio for liquid pharmaceuticals. “We can provide customers with complete line concepts, tailored exactly to their requirements,” Christian Treitel says. These lines can be further extended by adding secondary packaging solutions, as well as platforms and industry 4.0 technologies for serialization and aggregation.

Customized services for all maintenance strategies

A comprehensive range of services to improve machine efficiency and productivity completes Bosch’s line competence. The focus is on solutions for preventive maintenance as well as services to eliminate unwanted machine conditions as quickly as possible. To this end, Bosch provides a worldwide service network with qualified field service technicians who offer regional support. Thanks to digital services such as Remote Service, which is now supported by a visualization and chat feature, or the mobile version of the E-Portal, which will be presented at Interpack 2017, customers receive targeted support regardless of their location. Bosch will further showcase the versatile training portfolio of the Bosch Packaging Academy. Apart from new assistance solutions, Bosch will demonstrate virtual training concepts enabling manufacturers to acquire demand-oriented know-how for machine operation and maintenance. Bosch will also illustrate how Preventive Maintenance Parts Kits and tailor-made maintenance agreements help to proactively minimize unplanned downtime.

BOSCH
Technik fürs Leben

Bosch Packaging Technology
Stuttgarter Straße 130
D 71332 Waiblingen
Telefon: +49 711 81158502
Telefax: +49 711 81158509
E-Mail: christin.poenisch@bosch.com
Internet: http://www.boschpackaging.com



Fakuma 2017 – On Course for Success with Know-How Alliance

25 Years of Process Expertise in the Field of Plastics Processing

The Fakuma international trade fair for plastics processing is preparing for its anniversary event in 2017 with concentrated power! It's already becoming apparent that the globally esteemed technical event will occupy all of the exhibition floor space available at the Friedrichshafen Exhibition Centre – including the foyers in the East and West entrance areas. Fakuma project manager Annemarie Schur has the following to say in this respect: "Returning exhibitors, as well as numerous new exhibitors, had already decided to participate at Fakuma at a very early stage, and we were able to reckon with strong bookings during the planning phase. Despite the fact that Fakuma was not held in 2016 – in accordance with its regular schedule – the halls are once again nearly full in the meantime and, in order to prevent the waiting list from getting too long, we've now decided to integrate foyer floor space at the East and West entrance areas. In doing so we hope to provide one or another newcomer, as well as return exhibitors, with better chances for presenting themselves to the market in 2017. Because not least of all the hype surrounding 3D printing technology is causing more and more new suppliers to appear on the scene, who appropriately supplement Fakuma's portfolio with interesting solutions at the trade fair for plastics processing."

Fakuma 2017 with Four Groups of Primary Issues

With its current subdivision into four main areas, namely injection moulding, extrusion, thermoforming and 3D printing, Fakuma provides a complete presentation platform where plastics processing is concerned. Beginning with product development, tooling and production equipment, right on up to industrial production of a great variety of components and modules made of various materials, Fakuma presents the entire range of plastics – and above all their economically efficient processing. More than 1500 exhibitors from 35 countries, who will occupy 915,000 square feet of overall exhibition floor space, have already registered for Fakuma's anniversary session which will take place as usual at the Friedrichshafen Exhibition Centre on Lake Constance from the 17th through the 21st of October, 2017. Where the number of participating manufacturers and distributors is concerned, as well as with regard to exhibition floor space and the trade fair's focal issues, Fakuma takes second place in worldwide rankings after K in Düsseldorf. Furthermore, if the large number of manufacturers of tooling, machines and peripherals in the form of both hardware and software are viewed as a yardstick, Fakuma is entitled to claim the title of "leading trade fair for plastics processing".

Process Sequence Expertise from the Concept to the (plastic) Product

With 45,721 expert visitors from 120 countries, Fakuma is obviously of great significance amongst the experts. On the one hand this can be attributed to the event's clear-cut positioning as a trade fair for plastics processing and, on the other hand, to its consistently practice-oriented alignment to the process sequence for industrial plastics processing. Above all Fakuma adopts highly promising new topics again and again in good time, without diluting or even abandoning its core areas of interest. Consequently, Fakuma has also been keeping an eye on generative manufacturing processes for some time now and is providing them, as well as variants developed on their basis, with adequate space for market presence. In this spirit, the incorporation of 3D printing technology is a logical step, especially in light of the fact that in many respects it will impact future plastics processing (technologies, tooling, materials, quality assurance, automation by means of digitalisation etc.).

17th - 21st October 2017: Fakuma, Friedrichshafen (D)

P. E. Schall GmbH & Co. KG
D 72636 Frickenhausen

Companies putting their money on analytica

Manufacturers in the laboratory sector choose analytica

- Large number of exhibitors registered more than a year before analytica
- Companies decide early to participate in analytica
- Success concept to continue: analytica conference and supporting program

More than a year before the fair, this much is certain: analytica 2018 is very popular among exhibitors. Some 14 months before the next exhibition is set to begin, more than 230 companies have already registered to participate in the International Trade Fair for Laboratory Technology, Analysis and Biotechnology. The exhibition is being accompanied by a supporting program that promotes the transfer of know-how at the highest level. analytica takes place at the Messe München trade-fair center from April 10–13, 2018.

More than 230 exhibitors from 22 countries have already registered for the next analytica—that is 26.4 percent more than at this same point in time prior to the 2016 fair (in 2015: 182). 36.2 percent of the applications received to date are from countries other than Germany. Exhibitors include leading international manufacturers such as Agilent, Akzo Nobel, Analytik Jena, Büchi, Mettler Toledo, Netzsch, Olympus, Perkin Elmer and Waters. In addition, large joint international exhibits, among other things from China and Korea, have also been announced. As a result, the trend that has been noticeable at previous exhibitions—companies registering for analytica early and in large numbers—appears to be continuing. Dr. Reinhard Pfeiffer, Deputy CEO of Messe München, sums things up: „The fact that manufacturers are expressing this much interest in analytica 14 months prior to the fair confirms that analytica is Number 1 in the industry. It covers the entire value chain in the laboratory sector in its entire breadth and depth. No other trade show in the world has a portfolio of equipment, techniques, services and innovations for the laboratory that is as comprehensive as that of analytica in Munich."

Leading international trade fair received top marks from exhibitors

The fact that exhibitors were satisfied with having participated in analytica 2016 and with the business that they initiated there was also reflected in an exhibitor survey that was conducted by the independent opinion research institute Gelszus Messe-Marktforschung GmbH. Susanne Grödl on the results of the analytica 2016 survey: „97 percent of exhibitors were satisfied or very satisfied with having participated in the fair, and 95 percent said that they wanted to participate again in 2018. For us, that is naturally an incentive to increase the quality of the fair, something that our exhibitors have come to expect, to a new level for analytica 2018. Exhibitors should be able to conduct the best business in the world at the largest industry gathering in the world. We want to enthrall our exhibitors with the trade visitors' internationality, quality and investment potential."

analytica a driving force behind innovations and a source of momentum

In addition to allocating stand space, preparations for the supporting program and the scientific conference are moving ahead at full speed. Keynotes from leading scientists from Germany and abroad and 1,839 participants—twelve percent more than in 2014—that is the record of success of the analytica conference in 2016. The conference promises to be a scientific highlight of analytica again in 2018. Experts will report on the latest developments in analysis in their presentations. They will cover the entire range of topics, from fundamental research to applications—and do so in nearly all application sectors, from material analysis and bioanalysis to food analysis and pharmaceutical analysis.

The Live Labs will also continue their success story in 2018. Well-known manufacturers give live demonstrations of their products and in various applications on the topics of food and material analysis. The extensive supporting program including Finance Day, Personalized Medicine and JobDay will also be continued in 2018 and expanded to include a number of trending topics. Whether it comes to the analytica conference, Live Labs, special shows or the forum program: The supporting program will give attendees a comprehensive look at the latest products in the laboratory community and at the future of laboratories.

10th - 13th April 2018:
analytica 2018, München (D)

Messe München GmbH
D 81823 München

The Year in Which the Medical Technology Industry Sets Course From approvals and eHealth to digitisation and minituarisation

Medtec Europe sets key themes and introduces new formats

Besides regular topics such as the digitisation of the industry and ISO 13485, and now Brexit as well as the USA's exit from the Trans-Pacific Partnership TPP—2017 is going to be a year in which decision makers from the medical technology sector will be exposed to a particularly high number of questions and complex developments, which will set the course for the industry's future. Medtec Europe, taking place between 4 and 6 April 2017 in Stuttgart, will thus become one of the most exciting industry events in recent years.

Medtec Meets Pharma

Next to topics related to the global economy, the increasing connection between medical technology and pharma is going to be one of the trade fair's focal points, which is now taking place for the 16th time. Whereas in the past the two sectors used to be in a rather competitive relationship with one another, current innovations are demonstrating the new mutually beneficial interplay between the two industries. Innovations in the technology sectors are leading to an increased use of medicine and vice versa. The boundaries between medical technology and medicine continue to blur. Depending on one's perspective, these combination products can be grouped in with either one of the two categories. The topic will be covered by several Medtec Europe knowledge and networking formats like, for example, the sessions Innovation in Drug Device Combination and Medtec meets Pharma in the seminar theatre. Anne Schumacher, Brand Director at UBM, the event organiser: "Starting this year, Medtec Europe is part of our pharma fair portfolio, which allows us to create very strong synergies both technically as well as in terms of exhibitors and industry visitors."

Digitisation and eHealth

Even at the Medtec Europe 2017, there is no getting around the main topic of digitisation. The Internet of Things, Industry 4.0 as well as mobile health are no longer exclusively tied to innovation but are now among the industry's business drivers. Renowned industry experts, like David Kleidermacher, CSO at Blackberry, will be sharing their relevant knowledge in Stuttgart with around 7.000 visitors from more than 70 countries.

Premiere: VDMA Forum

The VDMA Forum. Since 2016, the VDMA has been the fair's contributor of ideas and supports the fair management in conceptualisation, promotion, organisation and execution. As in the last few years, there will be a common booth, where 15 exhibitors will present across 130 m². This year, the VDMA will also, for the first time, use Hall 3 to organise the VDMA Forum, a platform where exhibitors will promote their innovations in the form of short presentations.

The Medtec Europe will thereby strengthen its position as a fair covering value creation along the entire production chain.

Additional Premiere: Trade Conference Medical Device Manufacturing, organized in co-operartion with Fraunhofer IPA

A further addition is a day-long trade conference in cooperation with the Fraunhofer Institute, IPA, on the topic of Medical Device Manufacturing. This format is specially targeted at decision makers from research and development, medical engineers and product developers. The participants will have the chance to deepen their knowledge in regard to topics such as "3D-Printing in Medical Technology" at a scientifically high level. A number of well-known speakers will be part of the conference, including Prof. Russel Harris from the University of Leeds, as well as Andreas Lauth, Technology Director at the Bauerfeind AG.

Start-up Academy

Even though just ten companies from the medical technology industry collectively earned 37 percent of global revenue in 2015*, the industry continues to look more and more closely at start-ups. These small and dynamic businesses are capable of bringing new innovations on the market in very short development times, thus giving the industry strong impulses. The Medtec Europe, as part of the Start-up Academy, provides selected European founders with the possibility to present themselves to an international trade audience free of charge. During their short presentations, visitors can learn about the new developments and evaluate possibilities for partnership and collaboration.

* Source: EvaluateMedTech, September 2016

04th - 06th April 2017:
Medtec Europe, Stuttgart (D)

UBM EMEA
D 53721 Siegburg

POWTECH 2017

The heart of mechanical processing technology

- Very high number of registrations six months before event start
- More pharmaceutical content and diverse lecture programme
- 20th anniversary of POWTECH in Nuremberg

26th - 28th Sept. 2017: POWTECH, Nürnberg (D)

Bulk solids experts, process technicians, engineers and plant operators from all over the world will gather in September for POWTECH in Nuremberg. On three days and in six exhibition halls, visitors will experience the latest equipment and systems for the whole gamut of mechanical processes from A to Z. Forums, guided tours and lectures complement the presentations by the around 900 exhibitors expected to attend. A new feature in 2017 will be the special display area Pharma Solids for concentrated pharmaceutical expertise in Hall 3A. POWTECH 2017 will take place from 26 to 28 September 2017 at Exhibition Centre Nuremberg.

Every 18 months, POWTECH brings together the global innovations in mechanical processing technology and for the analysis and handling of powder and bulk solids. Plant designers and operators from almost all segments, including chemicals and pharmaceuticals, foodstuffs, non-metallic minerals, recycling and ceramics, come together to update their knowledge and explore the state-of-the-art in processing technology. At present, more than six months before the trade fair starts, a good 85 per cent of the display area total from 2016 has already been booked again. „The high number of registrations underscores the importance of the event as the No. 1 platform for mechanical processing technology," emphasises Beate Fischer, Exhibition Director POWTECH at NürnbergMesse. „The sector plays a decisive role in shaping current industry trends and in September will once again showcase its latest developments. The registrations also promise a strong international presence and a large number of often impressive exhibits."

High-tech meets practical expertise

POWTECH is definitely the place to be to gain more in-depth knowledge about technologies for powder, granules and bulk solids or get quickly up to speed on the latest developments. Two forums will offer ongoing presentations and workshops on issues affecting the industry. Bulk solids practitioners will gather at the expert forum in Hall 2, where they can experience best practice examples by leading manufacturers and users in the form of compact presentations. Users involved in the pharmaceutical sector will find themselves at home in the „Pharma.Manufacturing.Excellence" forum in Hall 3A and will come away with useful tips on how to meet the challenges facing them.

In 2017, as in previous years, anyone visiting the outdoor demonstration area at POWTECH will once again hear the warning: „Ladies and gentlemen, please protect your ears!", when experts conduct live explosions to demonstrate the effectiveness of the latest ex-proof equipment. Universities and research institutes will present themselves in the „Future Generation" zone, while another special display area will combine start-ups and new companies in the processing technology field. And if networking is your thing, you can head to the Process.net-Cafe.

New in 2017: greater pharmaceutical presence

More than half of all exhibitors at POWTECH offer solutions for use in pharmaceutical manufacturing. In 2017 the special display area „Focus on Pharma Solids" will make its debut. This area in Hall 3A will bring together the technologies and products necessary for the production of pharmaceutical solids. The exhibits focus on the various steps for pulverising, screening and processing sensitive materials and take account of associated processes like measurement and control technology and particle analysis. The special display area is directly adjacent to the „Pharma.Manufacturing.Excellence" forum which offers presentations on this subject. To complement the special show, the APV (international association for pharmaceutical technology) is also planning a new conference devoted to the subject of pharmaceutical solids.

Continuing the success story

More than 16,000 trade visitors flocked to Nuremberg for POWTECH 2016, while the 891 companies and institutions from 31 countries that exhibited were highly satisfied with the event. In a representative survey, over 93 per cent of exhibitors confirmed that they were able to reach their desired target groups, and 92 per cent could establish new business contacts. In 2017 POWTECH will be taking place in Nuremberg for the 20th time. This anniversary round will also focus on all facets of mechanical processing technology. Topical thematic threads include the customisation of production, digitisation and increasing the efficiency of existing systems.

NürnbergMesse GmbH D 90471 Nürnberg

Phillips-Medisize's stand 1E28 at Medtec Europe, Stuttgart/Germany, April 4th to 6th, 2017, is designed for medical device professionals to discuss future products – from the first idea through to engineered-in scalability and batch production respectively. Several display cases reveal a clear view of numerous medical, diagnostic and drug delivery devices. They serve the discussion partners – potential customers, OEM manufacturers and the experts from Phillips-Medisize – as illustrative material to determine the typical steps and processes from the first model component to the ready-for-use solution. These disciplines have become even more important since the implementation of connectivity within the wide array of medical, diagnostics and drug delivery devices. Over the last years, Phillips-Medisize has proven its potential as a renowned outsourcing partner for projects involving high-end connectivity.

Connectivity – key to future-oriented medical care

The purpose of a connected and electronic-enabled medical device – such as a pump injection system for insulin – is obvious: it is supposed to provide the patient with security and sustainability with regard to the administration of the precise dose at the right time under the respective pathological conditions. Medtec is a perfect opportunity for Phillips-Medisize to discuss with interested parties the key benefits, convenience and latest innovations regarding prefilled syringes and connected injection devices on the basis of examples, proficiency and know-how gained during various recent projects. Apart from user-friendliness, it will be a major point of interest to look at data privacy, medical regulations and swiftly changing legal stipulations which accompany the subject of connected health in its emerging stages. "As patients continue to be the focus for new devices, their ease of use and adherence to treatment is key; with the rising drug costs, healthcare payers seek justification that the drugs and their delivery systems are cost effective and improve patient outcomes," comments Bill Welch, Chief Technology Officer. "New opportunities for these increasingly challenging requirements are found when companies begin incorporating electronics, mobile apps, and cloud databases to create disease therapy ecosystems."

Another focal point during the customer/outsource partner dialogue will be the know-how to develop a completely integrated supply chain for such a sophisticated product. The acquisition of the Danish Medicom Innovation Partner company (mid 2016) by Phillips-Medisize and the synergy effects derived from the integration of Phillips-Medisize into the Molex Corporation (October 2016) boost the electronics capabilities and connectivity potentials of this global contract manufacturing organization. A project study – presupposing human-centered design (HCD) – starts at the evaluation whether commercial production volumes will be in the range of target cost when considering design for manufacturing (DFM) and design for assembly (DFA) analyses. Subsequent feasibility assessments lead the R&D experts from the first pilot components to the preproduction batch and finally to scalability into millions of units of this medical device.

The processing must always be in line with the following prerequisites: HCD standards, fulfilment of validation, certification, clinical tests and conscientious quality surveillance. Numerous exhibits provide opportunities to discuss the route of scalability: customized medical and diagnostic devices such as electronic auto injector systems, specialty drug delivery devices, various types of dosing systems, multi-component dosing units, disposables and consumables for diagnose components, disposable insulin pens, blood glucose meters, inhalators, spray applicators, IV sets, peristaltic pumps, titration plates, mixing injectors, complete MDD application sets, single-use surgical devices, tube sets, catheters, diagnostic arrays, and much more. Phillips-Medisize provides a complete supply chain for customers – from the early design sketch to the special custom batch or multi-million production run of a given medical device packed under sterile conditions ready to be used for/by the patient.

At Phillips-Medisize, production is monitored under a cross-process method by means of high-priority quality assurance standards in accordance with ISO 13485 and/or the corresponding FDA standards and Good Manufacturing Practice (GMP). Phillips-Medisize tests and checks all products at its in-house facility with appropriate measuring technologies and also carries out cytotoxicity tests, bio burden determination, LAL and performs risk analysis by means of FMEA. Validation of the processes follows industry standard DQ-, IQ-, OQ- and PQ stages.

04th - 06th April 2017:
Medtec Europe, Stuttgart (D)

Phillips-Medisize Corporation
CH 8309 Nürensdorf

Target-oriented structure in the value-added chain for medical device production

During Medtec, on stand G21 in hall 1, the team of Spang & Brands GmbH plastic technology for medical care is well prepared for negotiations with trade visitors who are looking for a partner specialized in all services involved in the manufacture of medical and pharmaceutical devices. Friedrich Echterdiek, CEO of the Friedrichsdorf, Germany-based company, gets to the point: "We have been active for more than 30 years in these sectors exclusively and achieve optimum solutions on the shortest possible routes, mainly due to the advantages of our new tech-nology center."

Along the complete value-added chain of a medical device specialist, Spang & Brands is able to offer the entire diversity of products optimized in plastics – thanks to its new technology center, state-of-the-art R&D equipment, modern mould making, as well as a park of more than 60 injection moulding machines, over 30 of which are all-electric including several multi-component units. "We have the right approach, supported by CAD-3D development and MoldFlow analysis", says Friedrich Echterdiek. Medical devices are produced and packed ready to use. With precision and cleanroom injection moulding technology the most intricate filigree components are moulded. They simply must not exceed the very tight tolerances – in the micron range. They are thus able to withstand permanent loads to guarantee purity, hygiene and safety on and in patients. Consequently, special plastics compounds, such as TPU, TPE, TPV, resomere materials or polylactides are being used. "With multicomponent injection moulding, our approach is to combine comfort with state-of-the-art functionality. We continue to focus on TPE as an alternative to polyisoprene. Here, many applications and new shaping techniques are conceivable", emphasises Spang & Brands' managing director.

The patients' well-being is top priority! Functional, ergonomic, haptic, aesthetic and costworthy – these are the most important patient-oriented prerequisites. When negotiating a new medical device, the business partners must always keep an eye on these fundamentals. "Triggered by high initial costs, a swift product development process is mandatory. That is what customers expect in order to achieve validation, clinical trials and market launch as soon as possible," emphasizes F. Echterdiek. From the first model (via rapid prototyping) and the first trial mould (possibly with 3D-printed inserts) the project analysis leads to the optimization of individual parts, components and sub-assemblies ensuring Design to Value and Design for Manufacturing and Assembly. This implies that the feasibility study must also cover scalability of a projected medical device – including its production mould(s) – from pilot series up to batches of several million units.

2-component cap with rated break point (Photo: Spang & Brands)

2-component composite unit dose (CUD) (Photo: Spang & Brands)

2PortCap – with TPE seal (Photo: Spang & Brands)

The wide span of "plastically engineered" medical device solutions is showcased by Spang & Brands during Medtec: syringes, hollow needles, puncturing membranes, implant parts and components for keyhole surgery, componentry for infusion and blood bags, transfer and connection systems as well as assembled componentry and ready-for-sale systems, whose geometries and characteristics (e.g. rated break points responding to twisting or breaking power) must comply with the highest demands for precision.

Final step: fully automated and manual assembly and packaging of parts and components – from pre-production to just-in-time batch sizes, from small series to million-piece batches – takes place in cleanrooms of various classifications. Validated manufacturing processes as well as strategically positioned testing stations with 3D measuring technology and visual and tactile control support quality assurance. Conformity with national and international legal regulations for medical devices are safeguarded across the entire value-added chain of a product – from its prototype to applications which benefit patients. Among several validations, the company has been certified in accordance with ISO 13.485.

04th - 06th April 2017:
Medtec Europe, Stuttgart (D)

Spang & Brands GmbH
D 61381 Friedrichsdorf

LABVOLUTION with BIOTECHNICA 2017 (16 – 18 May, Tues.–Thurs.)

smartLAB 2017: Thirteen partners – One vision

To design the laboratory of the future you need pioneering and innovative thinkers and developers from research and industry. Scientists and businesses joined together for the smartLAB project to develop a vision of the laboratory of the future. The second edition of this fully functional model laboratory is on display at LABVOLUTION with BIOTECHNICA from 16 to 18 May 2017. At the European trade fair for innovative laboratory equipment and optimized laboratory workflow, smartLAB focuses on how the laboratory learns to think and communicate. It combines market-ready applications with forward-looking vision. smartLAB stands out not just for its individual components, but for how they come together and interact. The smartLAB 2017 partners are:

Eppendorf

Eppendorf supplies devices, pipettes and consumables for the use cases presented by smartLAB, and support for the integration of these products. "smartLAB gives us as a company the opportunity join forces with others to showcase a vision of the future of the laboratory," says Dr. Tanja Musiol, Project Manager Portfolio Management Marketing at Eppendorf. "Our collaboration as a group and discussions with customers at the fair also give us plenty of ideas for future projects." As a leading company in the life sciences sector, Eppendorf develops and sells devices, consumables and services for liquid handling, sample handling and cell handling for use in laboratories worldwide.

Fraunhofer IPA

Another smartLAB partner is the Fraunhofer Institute for Manufacturing Engineering and Automation IPA with its Laboratory Automation and Biomanufacturing Engineering department. Workers here focus on implementing relevant digitization trends for the laboratory of the future. A key research focus is the digital networking of lab devices. Communication standards, such as the SiLA standard codeveloped by IPA, play an important role here. But the mere communication is not enough. For the lab of the future, Fraunhofer IPA is developing a laboratory ecosystem comprising a device operating system, an app development platform and an app store for laboratory machines.

Herr M

Herr M is specialized in user-centered design for the field of innovation management. As a creative partner to smartLAB 2017, the company illustrates how the complex strands of digital data processing and data preparation can merge with the physical world of the laboratory workers. Innovation only has value when it is understood and experienced by its audience. To achieve this goal, Herr M is designing new work processes in the laboratory based on user psychology, ergonomics and interaction criteria. Distinctive design for connected elements and tasks helps make even hard-to-understand relationships clear and simple.

iTiZZiMO

iTiZZiMO integrates new mobile devices not previously used in the lab environment, such as smartphones, tablets and smartglasses, into digital work processes in smartLAB. The smartglasses function as protective goggles, as well as providing instructions for work steps and displaying information on processes or warning messages when using hazardous chemicals. Tablets and smartphones serve as digital lab notebooks and can be directly linked to the laboratory IT systems, so that all data can be called up and modified. Documentation is conveniently generated without spending additional time.

Köttermann

Flexibility and space – those are Köttermann's concerns in smartLAB. The leading international service provider for comprehensive laboratory solutions made of steel has developed mobile facility units. These are hexagonal modules based on a "ballroom" concept: This laboratory design based on cleanroom technology places flexibility of spaces and apparatus at the center, with devices often integrated directly into furniture. Köttermann's mobile honeycombs can be easily rearranged at any time, form space-saving islands and house a wide range of technology. Magnetic stirrers can be integrated into the surface, for example, or shelving units recessed into the countertop.

Labfolder

"In 2015, smartLAB showed how much interest there was in research and development for digitization of the laboratory environment," says Dr. Simon Bungers, founder and CEO of Labfolder and 2017 spokesperson for the smartLAB group . "And it was very clear that the participating partners made a great team, capable of meeting this demand for innovation." Labfolder's contribution to smartLAB 2017 is a software solution for the design, presentation and automation of laboratory processes. The lab process visualizes the exhibition experiments and the underlying data structure in a form similar to a flow chart. And the Protocol Designer app sends the process results directly from Labfolder to the electronic lab notebook (ELN). Despite this role that is central to the entire lab process, Labfolder is not designed as a monolithic mainframe solution, but rather allows all participating partners to create their own apps and interface them with Protocol Designer.

Lorenscheit

Lorenscheit Automatisierungs-Technik supplies its customers with products and services in the field of process automation and smart manufacturing consulting. This young company is specialized

smartLAB 2017: Thirteen partners – One vision

in solutions for workpiece handling, optical component recognition, signing and measurement technology. Lorenscheit contributes the robot arm to smartLAB. As sales partner to Universal Robots, MIR and Robotiq, Lorenscheit knows its way around flexible, user-friendly and quick-assembly robots. Universal Robots' robots work collaboratively, hand-in-hand with their human coworkers. For internal transport and logistics solutions, the MiR100 robot is an ideal partner, and with Robotiq, Lorenscheit offers just the right products for gripping and sensor technology and teach-in solutions.

LUPYLED

Lighting and sensor specialist Lupyled is taking part for the first time. This high-tech startup has developed planar lighting that can be used to display a wide range of light scenarios. Its wavelengths range from 390 nm (UV) to 660 nm. Lupyled supports the smartLAB project with lighting and the treatment of a wide range of materials using special wavelengths, as well as sensor controls. The company also has an app that can be programmed to control and evaluate lighting and sensor technology.

PreSens

At smartLAB 2017, PreSens is integrating non-invasive sensors into functionalized surfaces. In the Bioreactor Inoculation use case, the SFR vario provides data on biomass concentration, pH and O2. Special attention is also paid to how contactless measurement results can be optimally combined with other analysis data, and how simply such measurement engineering can be integrated into every laboratory, and every lab bench. The first results from the smartLAB working group on new sensor technology for bioprocess development are also on display. PreSens is a leading global provider of chemical-optical sensors for oxygen, pH, CO2 and biomass.

Sartorius

Sharing knowledge and trying out creative approaches is Sartorius's view of the driving idea behind smartLAB. On the one hand, smartLAB serves as a bilateral platform from which shared ideas can flow into new product developments. On the other, Sartorius contributes very concretely to the success of the lab of the future with its modular and configurable Cubis® laboratory scale. "When we combine openness and exchange with our technological expertise, we generate innovations that move things forward and point the way towards the lab of the future," says Michael Melingo, member of the Group Executive Committee and Director of the Laboratory Division at Sartorius. "So we not only want to support smartLAB with Sartorius products, but also apply our know-how to finding new solutions for the laboratory." The academic sector as well as laboratories in various industrial sectors can benefit.

Sartorius is a leading international pharma and lab supplier with its two Bioprocess Solutions and Lab Products & Services divisions. With its innovative products and services, the company helps customers around the world safely and cost-effectively implement complex and quality-critical processes in biopharma production and laboratories.

Schmidt + Haensch

Another smartLAB partner is Schmidt + Haensch, founded in Berlin in 1864 and thus one of the oldest companies in the field of optical measurement technology that continues to serve this market. Today the firm is led by the fifth generation of the founding family. The product range includes in particular polarimeters, refractometers, photometers, densimeters and process analysis systems for the food, pharmaceutical and chemical industries. Some 15 percent of annual revenue is reinvested in research and development for new devices and methods.

TCI – Technical Chemistry Institute

The Leibniz University of Hannover Technical Chemistry Institute has had a leading role in the development, coordination and implementation of the smartLAB project since its inception. "For us, smartLAB is an opportunity to help shape and target the development of the drastically needed modernization of laboratory infrastructure," says Dr. Sascha Beutel, TCI Work Group Director. "As a university institute, we have excellent access to young scientists who can share their expectations and demands on the future lab environment, so that these spaces can be adapted to actual needs." TCI's core expertise lies in the development of application-centered products and processes, with a focus on bioprocess engineering.

Zühlke

The foundation for a smartLAB is the flexible networking of different systems, as well as the storage, structuring and evaluation of different source data. For smartLAB 2017, Zühlke has adapted and expanded its own "Industry 4.0 Accelerator" for laboratory applications. Zühlke's Industry 4.0 Accelerator is a modular building kit containing prefabricated functions for communication, data storage and administration of connected devices. It offers solution elements at every level of application development for laboratory digitization. As a service provider for innovation projects, Zühlke develops products, services and business models for the digital future – from initial idea to execution to operation. Zühlke also supports medical technology and life science companies in the development of products and software solutions.

LABVOLUTION with BIOTECHNICA

The next "LABVOLUTION with BIOTECHNICA" trade fair takes place from 16 to 18 May 2017 in Hannover, Germany. LABVOLUTION is Europe's flagship fair for innovative lab equipment and laboratory workflow optimization. It covers every aspect of laboratory work, from the life sciences to analytical chemistry. Its displays feature the full spectrum of equipment and infrastructure for research, analysis, production and training laboratories in the chemicals, life sciences/biotechnology, pharmaceuticals and medical equipment industries, as well as environmental protection and the food industry. LABVOLUTION is held right alongside BIOTECHNICA – the No. 1 showcase for research institutes and commercial enterprises in the biotech industry. BIOTECHNICA also places great emphasis on knowledge transfer, innovation, networking, recruitment and startups. LABVOLUTION and BIOTECHNICA are being staged in Hall 19/20 (immediately adjacent to the North 1 entrance). A single admission ticket entitles visitors to attend both shows.

16th - 18th May 2017: LABVOLUTION + BIOTECHNICA, Hannover (D)

Deutsche Messe AG
D 30521 Hannover

World's leading trade fair for intralogistics and supply chain management to benefit from partnership with the world's leading trade fair for industrial technology

CeMAT 2018: **Strong partnership with HANNOVER MESSE**

Next year's CeMAT will take place at the Hannover Exhibition Center, in conjunction with HANNOVER MESSE as the the world's leading trade fair for industrial technology. "Teaming up CeMAT with HANNOVER MESSE forms a strong partnership which will benefit CeMAT by allowing them to reach even greater numbers of top industry decision-makers from around the world. Thanks to its reputations as the leading global event for integrated manufacturing, HANNOVER MESSE has been attracting more and more visitors from around the world. The industry professionals who come to Hannover find innovations, new concepts and solutions relating to Industry 4.0. The exhibitors at HANNOVER MESSE have welcomed the rescheduling of CeMAT, as intralogistics plays an important role in smart factories. Manufacturers from this segment therefore make a key contribution to the further optimization of the industrial value chain", explained Dr. Jochen Köckler, Managing Board member at Deutsche Messe.

CeMAT and HANNOVER MESSE are being staged as standalone events, but their common ground will be prominently highlighted for the benefit of potential crossover visitors. The synergies will be especially evident in the halls dedicated to industrial automation as the beating heart of Industry 4.0 – the buzzword for networked, autonomous and self-organizing manufacturing. Demand is on the rise for individualized, customer-specific products, and the necessary responsiveness and flexibility can only be achieved by means of digitalization and the concepts behind Industry 4.0. "Manufacturing is changing rapidly and there is a growing need for intelligent, networked intralogistics. CeMAT and HANNOVER MESSE will together provide a unique platform for a global audience – a one-stop place where attendees of every background can learn about the latest advances in Industry 4.0 and Logistics 4.0. As such, we will also be targeting non-industrial users", explained Köckler.

HANNOVER MESSE 2016 attracted no fewer than 190,000 visitors. One in three came from outside Germany, and one in two from the manufacturing and processing sectors. In addition to this potential, in 2018 decision-makers from the trade and services sectors from all over the world are also expected to attend CeMAT. The strong growth in online trade is expected to continue and the logistics experts in this area are increasingly interested in automated solutions. CeMAT is the place to find such state-of-the-art solutions.

Logistics 4.0 takes center stage

CeMAT will be located at the northern end of the site, within easy reach of the many visitors who enter the venue via the north entrance.

Logistics IT will again form the focal point of the CeMAT presentations. The exhibition itself is located in Halls 19/20, but IT will play an important role at virtually every exhibition stand. „Digitalization of the entire supply chain beyond the in-house, company setting is a prerequisite for the establishment of autonomous and self-organizing logistic chains. There are numerous individual technical solutions, such as warehouse management systems, smart containers and driverless transport systems. Visitors will learn how these solutions function and interact, as well as the competitive advantages that they provide at CeMAT in Hannover", commented Köckler.

The Logistics IT display category will feature companies such as Team GmbH from Paderborn. The decision to stage CeMAT parallel to HANNOVER MESSE was welcomed by managing director Michael Baranowski: „Digitalization and Logistics 4.0 are of crucial importance. Companies are facing the challenges of globalization and rising demands in the field of eCommerce, including same-day delivery. This has led to a complete re-evaluation of existing IT solutions. Future-proof solutions are only possible with state-of-the-art technology. CeMAT 2018, together with HANNOVER MESSE, will create the ideal setting in which to make the right investment decisions."

Pavilions under the Expo canopy showcase future-proof logistical solutions

Leading manufacturers of warehouse lifting and handling equipment will again showcase their technology in the three pavilions under the Expo canopy. The neighboring halls 25 and 26 will also feature displays of lifting and handling equipment, as well as related equipment and, for the first time at this location, cranes and accessory equipment. The open-air site will also be used for CeMAT. In total, the trade fair will boast 110,000 square meters of exhibition space, making it the world's biggest trade fair for intralogistics and supply chain management. „CeMAT gives full coverage to tomorrow's logistic solutions and systems. Thanks to its co-staging alongside HANNOVER MESSE, CeMAT will be able to reach an even wider and more international audience keen on discovering the latest and greatest trends the industry has to offer," said Köckler.

Manufacturers of handling technology and robots as well as suppliers of production logistics solutions will be exhibiting in Hall 21, while the adjacent Hall 24 will focus on transport logistics, packaging technology and identification technology. "Packaging", explained Köckler, "is an area that we are constantly reviewing and developing as a key aspect of intralogistics." Industry 4.0 means new opportunities for product packaging, not only in terms of individual, customized packaging, but also "smart" packaging capable of communicating product information for downstream operations.

Solutions for intralogistics at the next HANNOVER MESSE

HANNOVER MESSE 2017 will already provide suppliers of intralogistical solutions with an opportunity to showcase their expertise in Pavilion 32. Approx. 20 CeMAT exhibitors will demonstrate how their expertise can benefit the industrial value chain and what their sector has to offer. Apart from the exhibitor presentations, the VDMA industry association for handling technology and the intralogistics sector as well as the trade fair organizers Deutsche Messe will stage a forum on current intralogistical issues and manufacturing. "Industry 4.0 and intralogistics are closely related. Trade visitors who come to the CeMAT pavilion at HANNOVER MESSE 2017 will discover the important role of state-of-the-art intralogistics solutions for production processes and the supply chain. The technical possibilities are almost unlimited. For this reason we are pleased to offer a small insight into the technical developments of the future", emphasized Sascha Schmel, director of the VDMA industry association for handling technology and the intralogistics sector.

23rd - 27th April 2018: CeMAT 2018, Hannover (D)

Deutsche Messe AG D 30521 Hannover

New development for Continuous Manufacturing

Interpack 2017: **Bosch showcases comprehensive portfolio for solid pharmaceuticals**

- **Laboratory expertise: machines, consulting and training**
- **Market launch: new Continuous Manufacturing platform Xelum**
- **First TPR 500 tablet press "made in Germany"**
- **GKF 2600 capsule filling platform with integrated net weight control**

04th - 10th May 2017: interpack, Duesseldorf (D)

At Interpack 2017, Bosch Packaging Technology presents its latest solutions for solid pharmaceuticals. According to Christian Treitel, head of pharma business development at Bosch Packaging Technology, "the focus is on technologies and services that allow customers to flexibly develop, manufacture and package their products, from powders to tablets and capsules. One highlight is our new Xelum platform, which enables us to take the step from batch production to Continuous Manufacturing."

Comprehensive laboratory expertise

As an example of its broad portfolio from small-batch development to production scale-up, Bosch showcases the Solidlab 2 fluid-bed and drum-coater module. "We don't just provide customers with individual machines for the research and development of their pharmaceuticals. Our formulation and processing experts also support them with extensive pharmaceutical know-how and a wide range of training seminars to help them implement their ideas for new products," Treitel explains. In addition, the latest automation solutions greatly facilitate formulation, quality control and data handling. The new phase-testing device, for instance, makes it possible to automatically determine the stability of liquid, creamy or pasty formulations.

A novelty in Continuous Manufacturing

Selected customers also have the chance to take a first look at Bosch's latest advances in Continuous Manufacturing. With the new Xelum platform, Bosch presents an innovative solution for the continuous production of solid pharmaceuticals. Dosing, mixing, granulating and pressing: for the first time, one system combines all of these steps – fully automatically and without any interruptions, paving the way for more efficient tablet manufacturing.

Reliable serialization: CPS 1900 with checkweigher and Tamper Evident
A CPS module with checkweigher and Tamper Evident labelling function serializes the folded cartons. (Photo: Bosch)

Premiere: Bosch GKF 2600 with integrated weighing station
The integrated Net Weight Detection System (NWDS) automatically corrects deviations in the filling volume for micro dosing and pellet filling. (Photo: Bosch)

Tablet pressing and capsule filling made easy

The first TPR 500 tablet press "made in Germany" also celebrates its premiere at Interpack. "By transferring production from England to Waiblingen, we have further expanded our Waiblingen facilities' portfolio," says Treitel. "As a result, we can directly apply the latest technological innovations from our proven capsule fillers to the tablet presses, and optimally capitalize on synergy effects." Equipped with a 56-station rotor, the TPR 500 has an output rate of over 400,000 tablets per hour.

From the capsule filling portfolio, Bosch presents the GKF 2600 with integrated weighing station. The system can process various products like powders, pellets or liquids at output rates of up to 2,600 capsules per minute. The integrated Net Weight Detection System (NWDS) automatically corrects deviations in the filling volume for micro dosing and pellet filling. In addition, the filling process is 100 percent controlled, ensuring precise filling results without product loss.

Complete packaging solutions with Track & Trace

When it comes to secondary packaging, Bosch's portfolio includes a broad range of cartoning machines. One example that is on show at Interpack is the horizontal cartoning machine CUT 1405, which offers impressive flexibility in the choice of feeding systems, formats and closure variants. A CPS module with checkweigher and Tamper Evident labelling function serializes the folded cartons. When combined with industry 4.0 technologies such as Bosch's CPI software, customers receive a complete serialization solution that not only supports all current guidelines, but also provides multi-level connection with the company IT.

Interpack 2017: Bosch showcases comprehensive portfolio for solid pharmaceuticals

Customized services for all maintenance strategies

A comprehensive range of services to improve machine efficiency and productivity completes Bosch's line competence. The focus is on solutions for preventive maintenance as well as services to eliminate unwanted machine conditions as quickly as possible. To this end, Bosch provides a worldwide service network with qualified field service technicians who offer regional support. Thanks to digital services such as Remote Service, which is now supported by a visualization and chat feature, or the mobile version of the E-Portal, which is presented at Interpack 2017, customers receive targeted support regardless of their location.

Bosch further showcases the versatile training portfolio of the Bosch Packaging Academy. Apart from new assistance solutions, Bosch demonstrates virtual training concepts enabling manufacturers to acquire demand-oriented know-how for machine operation and maintenance. Bosch also illustrates how Preventive Maintenance Parts Kits and tailor-made maintenance agreements help to proactively minimize unplanned downtime.

Comprehensive research & development expertise
Bosch doesn't just provide customers with individual machines for research and development but also offers support by the formulation and processing experts to help implementing ideas for new products. (Photo: Bosch)

First TPR 500 tablet press "made in Germany"
Equipped with a 56-station rotor, the TPR 500 has an output rate of over 400,000 tablets per hour. (Photo: Bosch)

BOSCH
Technik fürs Leben

Bosch Packaging Technology
Stuttgarter Straße 130
D 71332 Waiblingen
Telefon: +49 711 81158502
Telefax: +49 711 81158509
E-Mail: christin.poenisch@bosch.com
Internet: http://www.boschpackaging.com

An alternative to traditional drive systems

Roller pinion system in corrosion-resistant stainless steel

Nexen Group, Inc. introduces a stainless steel version of its pate ted precision roller pinion system RPS. The RPS engages two teeth s multaneously to achieve superior accuracy with zero backlash at ai length. The system is quiet and efficient. Stainless steel makes it e tremely corrosion resistant, with a long life of up to 36 million mete Nexen's RPS provides a low maintenance, durable alternative to ra and pinion, ball screw and belt drive technology. The RPS is used foi wide range of applications including laser and plasma cutting machin and gantry machining centers.

The RPS system uses needle bearings to support the rollers th engage the teeth. This eliminates the sliding friction found in mai other motion control systems, leading to an efficiency greater than percent. This high efficiency means little is lost to friction, heat, ai wear, providing a long life of 60,000,000 pinion revolutions or up to million meters. Further key features include high speeds of up to 11 m (36 ft/sec), superior accuracy of +- 50 µm, zero backlash, and unlimit length, with custom lengths and modular components available.

Nexen produces roller pinion systems, industrial brakes, clutches, torque limiters, overload protection devices and control systems. The company holds 120 US and international patents. Headquartered in the USA and with the European office based in Wemmel, Belgium, Nexen products are available from over 40 sales offices and more than 1,500 distributor outlets worldwide.

RPS roller pinion system from Nexen in corrosion-resistant stainless steel.

Key features and benefits:

- High speeds: 11 m/s (36 ft/sec)
- Superior accuracy: +- 50 µm
- Zero backlash
- Long life: up to 36 million meters
- Unlimited length, custom lengths and modular components available

Nexen Europe Group bvba
1780 Wemmel, Belgien

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