



Hans J. Michael GmbH



Connect 2 Cleanrooms Evolves Validations with Particles Plus Technology



Since Connect 2 Cleanrooms' Installation & Validation team has started using Particles Plus particle counters to provide particle counts for cleanroom validations, Mark Jackson, Installation & Validation Manager, reports increased efficiency during validations.

"The handheld Particles Plus units are easy to use, intuitive and robust", says Jackson. "Our technicians are confident in programming them to perform the most efficient validation route". He gives the example of a cleanroom which needs counts at 9 validation locations. Usually locations are numbered consecutively in rows, for example, locations: 1-3 (row 1), 4-6 (row 2), 7-9 (row 3). Particles Plus handheld particle counters allow you to change the location order to provide the quickest route through the cleanroom - increasing efficiency and reducing turbulence. Auto advance allows the Validation Technician to progress automatically to the next programmed location and a delay can be configured to allow them time to move away from the unit once it is in position to prevent them contaminating the counts.

"Our technicians demonstrate these best practice methods to our clients, as ideally, organisations should use a particle counter to perform regular checks to en-

sure the cleanroom is performing to its ISO class parameters." Graphs are generated as a visual indication of the history of particles per second in a graph with p/s (y axis) against time (x axis). Spikes can be annotated and comments saved, i.e. 'door opened' or 'identified broken seal' for full transparency. "If an unprecedented event occurs which causes counts to spike" continues Jackson, "operators can exclude data if they require. However in accordance with the ISO 14644 standard, only one exclusion can be made or the test will be validated to protect its integrity".

It is the technology contained inside the Particles Plus units that really set them apart in the market. Upon entering a cleanroom's cubic volume, the unit will calculate how many locations and the sample size which is required, to meet ISO 14644 requirements (GMP or Federal Standard can also be calculated), as well as suggesting the particle sizes to be considered. Up to 50 user-defined recipes can be set, with different sample sizes, delays, location times, etc. For Connect 2 Cleanrooms, these are used for saving different locations for clients for whom validations are performed regularly. There is also the choice of metric or imperial measurements for the raw data to be extrapolated to,

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giving them international appeal.

With a number of data extraction options, the data flow can be driven by organisation's desired communication protocol, rather than limited to the capabilities of the device. Modbus TCP/IP is available as standard, (Modbus 485 and 232 are optional extras), whereas only Particles Plus units offer wireless transfer through Wi-Fi (optional), as well as offering USB to PC or to USB memory stick. The particle counters can hold 45,000 recorded data records simultaneously, which is enough for continuous particle counts (series of 1 minute samples taken with no break in between) to be run for 33 days without having to download data. For its busy installation and validation team, this capacity means Connect 2 Cleanrooms' client data is protected and not in danger of being over-written prior to it being downloaded. Data is time stamped to allow full traceability following extraction.

Patented technology offers concurrent interface sessions through the use of multi-core processors, which safeguards data logging, so there are no interruptions to sampling. Also patented is the remote diagnostics and configuration technology, giving the option to provide quick fixes - such as machine data, pump data, laser run time, etc. - without the need to send the unit off. The performance of the smart batteries can also be analysed through the remote diagnose tool, right down to individual cells and battery temperature.

Jackson says the Li-ion battery provides enough power for Technicians to confidently use the units all week without having to recharge. In fact, after a full charge, they can take 10.5 hours of continuous sampling. That is with the screen at full brightness, so with some power saving tactics, such as dimming the screen, it could run even longer. The unit illustrates how much additional battery life can be gained by making these changes. Welcome news for operatives reliant on battery power performance to prevent them from requiring a mid-validation power break.

The counters feature icon driven menus and a large colour 4.3" display with a touch screen interface that today's users expect from devices. Jackson likes the way the icons are grouped intuitively and how items such as graphs can be expanded with a single click. The ca-

libration date is also displayed at a touch, so Technicians can quickly check their unit is calibrated.

The comfortable handle, allows ergonomic control and the durable case features laser cut foam to protect the unit during frequent transit. It houses accessories such as the purge filter, which allows for the unit to be cleaned following use in dirty or toxic environments, and the temperature and humidity sensor. An integrated HEPA filter on the extract ensures no particles are introduced back into the cleanroom during sampling. Spot monitoring is facilitated through the Real-Time Meter™ feature, meaning if a broken seal or perforated filter is allowing contamination to be introduced into a cleanroom, the units help users to pinpoint contamination sources through a visual real-time graph with selectable sensitivity adjustment showing peaks of particle counts per second during sampling.

The handheld units can also be used as a continuous monitoring system, as you can connect them to a network and give them an IP address, which allows live data to be streamed to the PC desktop application or viewed remotely from any internet browser. "This gives organisations the reassurance that its cleanrooms are still achieving the standards they are built to meet, in between validation visits" concludes Jackson.



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



Dear subscribers,

the busy fair autumn draws to a close and now Christmas is not far away. But, prior to Christmas, we have already received some surprises. It is nice to learn about innovations especially if one thinks that everything already exists. Much information has been sent to us via e-mail and we have published it on our website www.reinraum.de. But we have also seen some of the innovations by ourselves when being present with our booth at the Cleanzone. We summarized all this information in our newsletter.

Many thanks again to all visitors of our booth at the Cleanzone. And we wish all of them who have received an original hard liquor „ABSOLUTE CLEAN“ from us (see on page 8, NL DE) very enjoyable autumn days.

Yours sincerely,

Reinhold Schuster



Cleanzone 2017: Large increase in visitors strengthens the trade fair's international and interdisciplinary position



When Cleanzone closed its doors on 18 October 2017, it had drawn approx. 1,200 visitors from 40 countries – an increase of 16 percent. There was an increase in both the number of international visitors and the number of German visitors compared to the previous event, and the international component accounted for 36 percent of Cleanzone's visitors. For the first time, potential customers who travelled to the trade fair in Frankfurt am Main included visitors from countries such as Serbia, Saudi Arabia, Canada and Australia. A total of 64 companies from 12 countries* presented their innovations and trends in Hall 1.2 at Messe Frankfurt. Ruth Lorenz, Vice President Technology at Messe Frankfurt: "Cleanzone drew potential customers from all high-tech industries where production is carried out under cleanroom conditions. With its high-quality international audience, Cleanzone further strengthened its position as an interdisciplinary and extremely international trade fair for cleanroom technology." Visitors included representatives from companies such as Infineon, Airbus, Fresenius Kabi, Roche, BASF, Kimberly Clark and Dupont and the Siegen and Mainz university hospitals.

Cleanzone is the industry's forum for innovation, and the trade fair was once again focused on new products and services that offer digital solutions for the cleanrooms of tomorrow. The Cleanroom Award, which was presented for the sixth time this year, went to Berendsen for its innovative "Connected Cleanroom Application", which facilitates the collection and intelligent processing of data in the cleanroom.

Frank Duvernell, Managing Director of ReinraumAkademie (Leipzig) and partner of Cleanzone: "Cleanzone demonstrated yet again in 2017 just how important it is to the cleanroom community to have an international trade fair highlighting innovations. Be it digitisation, automation or simulations regarding cleaning, clothing or behaviour in cleanrooms – the challenges facing cleanroom production in future are immense, and Cleanzone offers an excellent opportunity to find out more about tomorrow's requirements today."

The German Cleanroom Institute (DRRI) hosted a large joint stand at this year's Cleanzone, and a total of 17 companies belonging to the institute presented their innovations at the trade fair.



Cleanzone 2017: Large increase in visitors strengthens the trade fair's international ...

Professor Gernod Dittel, Chairman of the Board of the German Cleanroom Institute: "Cleanzone 2017 was a tremendous success for our member firms – especially regarding the quality of the trade visitors. Frankfurt and Messe Frankfurt offer the perfect venue for the international exchange that is so essential to our industry, something that was also demonstrated by the DRRI Expert Sessions that we organised for the first time this year."

Cleanzone's programme of events was more extensive than ever before. This year's Cleanzone Congress featured two keynote speeches for the first time, with Dr. Marc Thom from Sony Mobile and Dr. Axel Müller from the aerospace company OHB addressing the top themes of "Digitisation" and "Cleanrooms and space". Other new features included the VDI seminar, Cleanroom Talks and DRRI Expert Sessions. At Cleanzone Plaza, attention was focused on themes that included changes in satellite technology and market opportunities in the Middle East and South Africa.

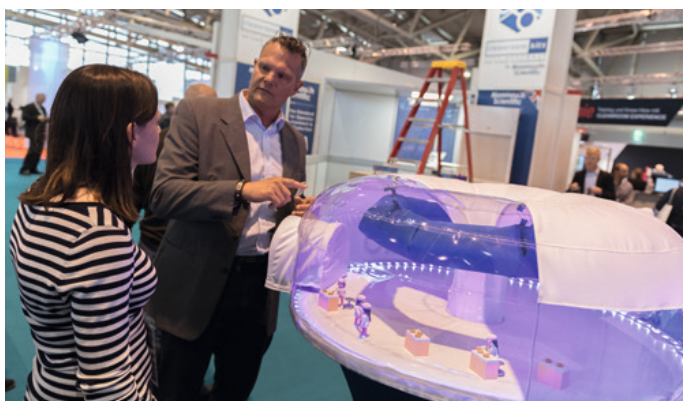
Of the approx. 1,200 people from the industry on hand, roughly 900 were trade visitors and 300 were experts from exhibiting companies. Besides Germany, the most important visitor countries were China, Austria, Denmark, Finland, Spain, Switzerland, the Netherlands, the Czech Republic and Belgium. Cleanzone's trade visi-

tors came from every industry where production is carried out under cleanroom conditions, including the automotive, semiconductor, aerospace, laser, optics, surface technology, food and pharmaceuticals industries.

**23rd - 24th October 2018: CLEANZONE 2018,
Frankfurt am Main (D)**

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>





5th BASAN Cleanroom Forum 2017 in South Africa

Autor: Reinhold Schuster

Johannesburg is definitely worth a trip. Obviously I was not alone to think this, meeting more than a hundred professionals, mainly from pharmaceutical industry, in South Africa at the beginning of November. They all had come to the 5th BASAN Cleanroom Forum which is being organized by Sascha Rother of Basan South Africa every year, in order to collect all the information and product knowledge packed in two days of speeches and workshops. As the cleanroom sector in Africa is still in its early stages, the main goal of this event is to provide basic information as well as a contact platform for interested companies. Next to the speeches and workshops there was also a product and sales show being held on the grounds.

As the final participant survey showed, expectations have been met. Even the idea of a contact platform worked out so that those interested in the african market could get in touch with the right people - the wine tasting at night was just perfect for this.

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The Agenda, 02./03.11.2017

Ivor Goetsch, basan South Africa

Opening & Welcome

Dietmar Pfennig, Pfennig Germany

Cleanroom cleaning: cleanliness lies in the detail!

Burcu Seker, Ecolab

Workshop: A Case Study for Evaluation of EM results,
Risk Assessment in Contamination Control and Developing Cleaning and Disinfection Regimes.

Dietmar Pfennig, Pfennig Germany

Practical Presentation: Correct application of cleanroom cleaning tools

Nicole Worthington, Fresenius Kabi

Workshop: Risky Business

Sonja Strydom, Esco Technologies

Workshop: Facility design

- A multi-Disciplinary approach

Wayne Muller, MCC

How to prepare for an MCC audit?
The Do's and don'ts for an inspection.

Adrian Kelfkens / Danie Joubert,

Hi Calibre Engineering

Dealing with pressure at work Achieving and maintaining a correct room pressure cascade in your cleanroom is a necessary element of GMP compliance

Richard Phelan, Aspen Pharmacare

Intervention by numbers,

Clint Walker, Aspen Pharmacare

Validation in the Industry 4.0 Environment

Panel Discussion Q/A, Speakers

Compact and high-speed powder filling

Market launch: new filling and closing machine AFG 5000 from Bosch



- Output of up to 480 vials per minute
- Number of filling points can be individually selected
- Optimal use of work stations thanks to the new transport system

As part of an exclusive machine presentation in Crailsheim from September 18 through 29, 2017, Bosch Packaging Technology introduced the latest addition to its AFG series. The filling and closing machine for pharmaceutical powders in glass vials offers manufacturers a wide range of options. "During development, our main focus was on flexibility," explains Dieter Bandtel, product manager at Bosch Packaging Technology. "With the AFG 5000, customers can choose between several different versions and various features. In addition, we have significantly increased the output rate in the high-performance segment."

New variable transport system

Based on a single machine platform, the system can accurately fill both large and small amounts of powder. Customers have the choice between one filling point for an output of 160 containers per minute through to three filling points for up to 480 vials per minute. Thanks to the vacuum-compressed-air filling system, the output remains high even with small filling amounts. For all versions, customers can choose between statistical or 100% in-process control of dosing weights.

"To optimize efficiency, we have developed a new, flexible transport system for the AFG 5000," says Bandtel. "While the vials are continuously fed into the machine, the transport system adjusts the speed of the following processes to precisely match the rhythm of the individual work stations." Whether filling, weighing or closing of vials – each stage is optimally paced. The new vertical transport system was designed to prevent idle time or bottlenecks. Rotating carrier systems, known as shuttles, transfer the vials quickly and safely to the respective work station. Once the vials have been sealed and taken out of the system, the shuttles quickly return to the infeed, ready for the next transport run.



Compact design for higher efficiency: the AFG 5000: The compact design of the AFG 5000 saves space and costs in the cleanroom. (Picture: Bosch)

Compact and efficient design

In addition to flexibility, we particularly focused on compact design during the development of the AFG 5000. "Our customers' powder filling takes place in class B cleanrooms, where every centimeter counts in terms of operating, maintenance and cleaning costs," explains Bandtel. Apart from the vertical design, the separation of the compact filling station from the intake and output reduced the amount of space that must be cooled and cleaned with sterile, dry air. A further space-saving feature is the optional air-treatment system, which can be installed outside the sterile area.

All components that come into contact with the product can easily be disassembled for cleaning and sterilization. The result is an easy-to use machine with only few format parts, offering customers substantial space- and cost-savings. In line with Bosch's pharmaceutical line competence, the AFG 5000 can be combined with upstream cleaning machines and sterilizing tunnels, as well as downstream capping equipment to create a complete line for safe and reliable filling processes for pharmaceutical powders.



BOSCH
Technik fürs Leben

Robert Bosch Packaging Technology GmbH
Stuttgarter Straße 130 D 71332 Waiblingen
Telefon: +49 711 811 0 Telefax: +49 711 81158509
E-Mail: packaging@bosch.com Internet: <http://www.boschpackaging.com>



New filling and closing machine AFG 5000 for powders: During an exclusive machine presentation for customers, Bosch experts explained the advantages of the new AFG 5000. (Picture: Bosch)

Food packages: safe, efficient, smart and sustainable



Author: Melanie Streich

Modern packages think for themselves, remind us, extend shelf life, can be heated at the press of a button and influence our senses with their appearance, odour and feel – and some of them can even speak. What packages in the food sector are capable of today goes far beyond their original purpose of protecting foods.

Packages have to perform numerous feats simultaneously: meet the needs of marketing and sales, comply with safety and hygiene regulations, and satisfy such consumer requirements as sustainability and easier handling while keeping the cost of production, transport and storage low. Thanks to the very latest machines with highly automated sensor- and microprocessor-controlled drive technology, coupled with innovative materials that can be produced and disposed of sustainably, the packaging industry has succeeded in converting a 6,000-year-old idea into a modern high-tech product.

First and foremost: protection due to packaging

And yet the primary purpose of each package – that of protecting its contents during transport and storage – remains unchanged. Packages prevent contamination and damage and protect foods from harmful environmental influences such as light, oxygen and moisture. They provide protection from spoilage due to microorganisms and prevent the loss of flavour or vitamins.

Up to 1.3 billion tonnes of foods, says the Food and Agriculture Organisation (FAO) of the United Nations, are lost each year worldwide. In some cases, fresh goods spoil during transport, are not consumed in time or are deemed unsaleable because they fall short of the given standards. And often enough, still edible food is discarded by consumers because the sell-by date has expired.

For over six years now, this overall issue has been addressed by the SAVE FOOD initiative of the FAO, the environmental programme of the United Nations Environment Programme (UNEP) and Messe Düsseldorf in cooperation with globally leading companies, organisations and research institutes. Their joint goal is to devise solutions to prevent food loss and wastage along the value chain. This involves making suitable infrastructure available, re-examining and modifying standards for packaging, raising

awareness and, last but not least, working on the package itself.

For what is now the third time in succession, the initiative with the international SAVE FOOD congress, which marks the start of interpack in Düsseldorf from 4 to 10 May 2017, is being given a suitable platform and bringing together various stakeholders from business, science, the political sphere and civil society in the fight against food wastage. Within the fair, the special SAVE FOOD exhibition will be held for the second time in the innovationparc, which has been energetically taking up a selected issue from the sector at each interpack since 2008.

Hygiene's not everything, but food is nothing without hygiene

When it comes to food packaging, hygiene is top priority, and sensitive meat and sausage products are subject to extreme standards of hygiene. Complete high-performance production lines inclusive of meat grinder, portioner and tray-sealing unit focus not only on performance, flexibility and product quality, but also on the interfaces – because these have a huge bearing on productivity.

The responsibility for food safety lies with the manufacturer itself. In-plant hygiene controls are strongly advised, but even more important is the exclusion of possible hygiene traps from the outset. Covering everything from comprehensive hygiene design and effortlessly cleanable components to sterilisation of the ambient air with short-wave UV radiation, highly advanced equipment delivers the highest standards of hygiene.

In the SB sector particularly, the skin pack, a two-component SB package consisting of PP or CPET tray sealed with a skin film, has become increasingly prominent. "It's possible to extend product shelf life considerably with vacuum skin packaging," explains Stefan Dangel, Sales and Marketing Manager at Sealpac.

Intelligent packaging

The innovative powers of the packaging industry are remarkable. Anyone investigating the very latest packaging technologies cannot fail to encounter nanotechnology,



A product's shelf life can be extended significantly by vacuum skin packaging. (Photo: Sealpac)



If excess moisture is taken up by special absorber films, for example, the mould and germ risk falls. (Photo: Fraunhofer IVV)



Intuitive machine operation with the HMI 4.0 from Bosch. (Photo: Bosch)



Industry 4.0 has long become the standard in the food industry. Intelligent systems ensure greater flexibility and efficiency in the packaging process. (Photo: Gerhard Schubert GmbH)

Food packages: safe, efficient, smart and sustainable

and printed and organic electronics. Intelligent and smart wrappers that are capable of identifying and affecting the degree of food freshness in a controlled fashion are now anything but utopian.

Active packages control the moisture level, prevent the proliferation of germs and even kill them – by using absorbers, for instance. Iron keeps oxygen-sensitive beverages like beer or juice fresh for longer. Table salt in the package inhibits the formation of condensation and enables mushrooms, for example, that tend to discolour after a short while, to look good for longer. “The idea was to develop a package that can take up and regulate moisture,” says Dr Cornelia Stramm of the Fraunhofer Institute for Process Engineering and Packaging IVV in Freising, explaining the aim of the research project.

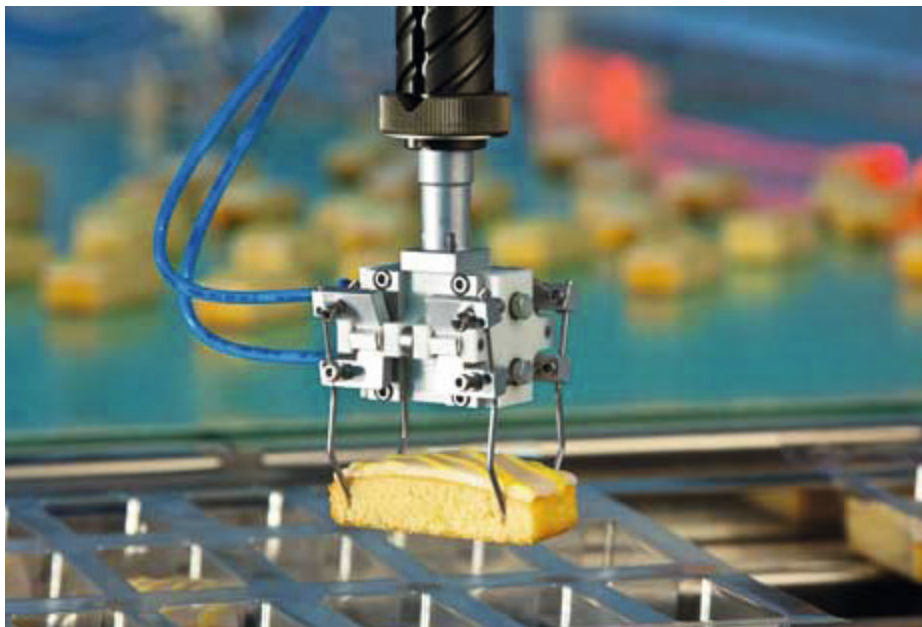
Visibly fresh

Whether food is still edible can be rendered visible by the special sensors of modern packages. These react when certain substances or gases are released and indicate this with a change in colour and fluorescence. The state of the food is then evident at a glance. One of the most frequent causes of food spoilage is breaks in the cooling chain. Intelligent time-temperature indicators are capable of indicating such discontinuities, usually with a colour change.

Sustainability as a basic discipline

Consumers expect a great deal of their food packages. Their demands of the packaging industry cover not only safety and hygiene, but also sustainability. Consumers mainly associate sustainability with recycling and disposal. The development of deposit and recycling systems and, no less importantly, clear targets have led to a strong increase in package recycling in the last few years. Recycling is on the advance, particularly in Europe, and all EU states are to recycle half of their domestic waste by 2020.

In the assessment of package sustainability, both the material used and its quantity are important as well as package size in relation to its contents. In the industry, there is a clear trend towards using renewable resources. Used instead of conventional materials with a view to diminishing the carbon footprint, these are often hailed as extra-sustainable. However, studies show that precisely these conventional materials, e.g. classical plastics, yield environmental benefits when a product's entire life cycle is considered – as a result of efficient recycling systems, for example. Ultimately, what counts as the most sustainable solution calls for a comprehen-



Bakery goods are gently packaged with special grippers. (Photo: Gerhard Schubert GmbH)

sive consideration of the case in question, taking account of the various factors at all stages in the value chain.

Packaged 4.0

In addition to consumer expectations, the packaging industry is also exposed to the growing requirements of its customers. Responding to the desire for greater flexibility and efficiency, the sector reacts among other things with an intelligent and interlinked factory in which classical mechanical engineering efficiently networks with sensors, software and services.

Industry 4.0 has long become the standard in the food industry and is closely associated with the component industry, which can be seen as blazing the trail of technological progress. In the special show “components – special trade fair by interpack”, highly advanced drive, control and sensor equipment will be exhibited alongside products for industrial image processing, handling technology, industrial software and communication, and complete automation systems for packaging machines.

Modern lines are capable of not only autonomously supplying information on process and system states, but also communicating with each other and independently correcting processes where necessary. “Intelligent products then individually control their own production process. And this is not all: thanks to communication throughout the value chain, a product's life cycle becomes continuously traceable. Totally new business models are possible,” explains Hartmut Rauen, Deputy Executive Director of

Germany's Mechanical Engineering Industry Association (VDMA).

A pioneer in the use of such progressive technologies is Bosch Packaging Technology which is planning to equip all new process and packaging machines with its next-generation Human Machine Interface HMI 4.0 as of interpack in May 2017. One of the new features is guided intuitive operation with multi-touch technology – much like on smartphones and tablet computers. The system reports malfunctions immediately and, in addition, provides information on the possible cause and assistance with remedying the problem. “This is a revolutionary innovation,” says Stefan König, member of executive management at Bosch Packaging Technology.

Packaging is indispensable for modern society. And this applies especially to foods and becomes apparent above all where it is lacking – in developing countries. Food often spoils due to the lack or inadequacy of packaging for transport and storage before it reaches the consumer. In the industrialised nations, on the other hand, a package not only has to protect, but it has to look good as well. And it has to stand out on the overloaded supermarket shelves, because the majority of customers only decide while shopping which product actually lands in the basket.

**07th - 13th May 2020:
interpack 2020, Duesseldorf (D)**

Messe Düsseldorf GmbH
D 40001 Düsseldorf

Particle Measuring Systems (PMS) and Novatek International form strategic partnership to bring a **unique, integrated, contamination control solution to the life sciences industry.**



Particle Measuring Systems (PMS), a global expert in sterility assurance, and Novatek International, the leader in regulatory compliant data management software, today announced a global partnership providing a fully integrated and comprehensive software and hardware solution towards a risk-based approach for the environmental monitoring in controlled manufacturing processes.

“PMS is focused on providing complete sterility assurance solutions to the life sciences industry. The Nova-EM software is an excellent next step to our Facility Pro environmental monitoring system and provides our customer with the secure data management that they need to succeed” said Giovanni Scialò, VP of Life Sciences for Particle Measuring Systems.

This integrated solution helps companies identify contamination in their production processes before it occurs. With the ability to preemptively correct a problem it is easier to achieve and maintain a state of control. This helps maintain consistent product quality and reduces the costly risk associated with loss of product and product recalls.

Nova-EM environmental monitoring software meets increasingly stringent regulatory requirements for environmental monitoring, data management and data integrity while eliminating the many challenges of paper based processes. The integration with Particle Measuring Systems’ allow to effectively analyze and preemptively visualize possible sources of contamination in all areas associated with

pharmaceutical production including air, surfaces, utilities, and personnel. Automated data acquisition from both continuous and portable devices, centralized data repositories and specialized integrated analysis tools are the ingredients to the most advanced integrated solution available on the market.

“With Particle Measuring Systems as our partner we are excited to continue Novatek’s legacy of providing innovative turnkey solutions to our customers” said Sarah Alimirzaei, Director of Strategic Alliances for Novatek International.



**PARTICLE
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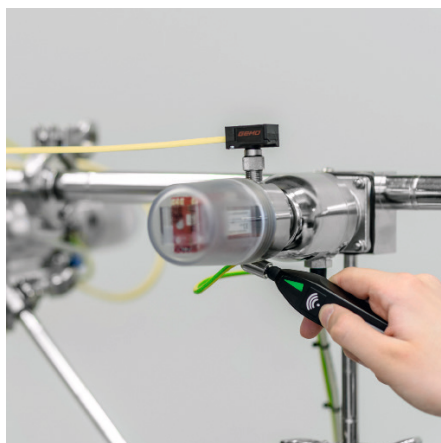
Particle Measuring Systems Germany GmbH
Pallaswiesenstr. 63
D 64293 Darmstadt
Telefon: +49 6151 6671 632
Telefax: +49 6151 6671 634
E-Mail: PMSGermany@pmeasuring.com
Internet: <http://www.pmeasuring.com>

Valve specialist GEMÜ is expanding its CONEXO range to include a retrofit solution for existing systems, as well as a cloud connection.

A retrofit solution for holistic system life-cycle management

GEMÜ CONEXO is an innovative and holistic solution for life-cycle management of all types of systems. The system currently consists of valves that are equipped with RFID chips and a corresponding IT infrastructure.

Thanks to serialization, every relevant valve component, such as the body, actuator or diaphragm, can be clearly traced and read at any time using the RFID reader – the CONEXO pen. The CONEXO app, which can be installed on mobile devices, not only facilitates and improves the „installation qualification“ process, but also makes the maintenance process much more transparent and easier to document. The app actively guides the maintenance technician through the maintenance schedule and directly pro-



vides him with all the information assigned to the valve, such as test reports, testing do-

cumentation and maintenance histories. The CONEXO portal acts as a central element, helping to collect, manage and process data.

Now the range is being expanded to include a retrofit solution. With CONEXO Retrofit, it is possible to retrofit GEMÜ valves in existing systems and to retrofit products from third-party providers with GEMÜ CONEXO, and to integrate these into the intended software environment. To identify the plant components, various options are available, depending on the requirements: Plastic shield with cable tie, adhesive labels for plastic components, and captive stainless steel seal.

GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG
D 74653 Ingelfingen

A new research project at the Hohenstein Group deals with antimicrobial effects of Lewis acids that are applied on textile surfaces. Results of this work may significantly contribute to countermeasures against multi-resistant bacteria as found, for example, in medical facilities.

Are Lewis acids the antimicrobial solution for textiles?

Many areas of everyday and professional life require antimicrobial protection. Such an effect on textile surfaces is currently achieved by utilization of silver or ammonium containing compounds. However, the use of such compounds is questionable with respect to possible adverse ecological and toxicological effects. In addition, these compounds are generally expensive.

Lewis acids exhibit an acidic surface effect and an antimicrobial

effect has been demonstrated. Therefore, these compounds can already be found in applications such as the cleaning of floors in hospitals. However, they have not been applied on textile surfaces. In presence of moisture, Lewis acids (metal oxides, e.g. zinc oxide) generate low pH-values on their surfaces resulting in antimicrobial effects comparable to the natural protective acid mantle of human skin.

Compared to commercially available antimicrobial substances, Lewis acids have proven to be useful against different pathogens like fungi, bacteria and even viruses. Furthermore, they have found to be very effective and stable even during exposure to human sweat and proteins. Besides, estimations suggest that the use of Lewis acids in antimicrobial textile coatings may result in cost-reductions of up to 90%.

In the current project at the Hohenstein Group, researchers will cooperate closely with manufacturers of products for textile industry like knitted and woven fabrics, textile auxiliaries and textile finishers. Part of the work includes the determination of suitable metal oxides featuring very low solubility in water and to be applied on textile surfaces. By combination of different substances, synergistic effects might be generated. Systems based on a binder matrix and a Lewis acid will be selected, because this concept is already known from the functionalisation of surfaces.

The project includes the development of an innovative finish based on suitable Lewis acids with different binder matrices. In order to provide relevant results for a broad audience, different textiles will be finished and characterized. Correlating the amount of Lewis acid applied to the surface of the textile and the amount finally released will serve as the basis for a cost/benefit analysis. Biocompatibility testing will be performed to ensure that any harmful effect on the skin originating from the treated textiles can be ruled out.

Based on the project results, optimized compositions for antimicrobial textile finishes and the corresponding process parameters will be provided to the textile industry.

The expected research results will meet practical requirements of the textile industry and, in consequence, can be applied directly to current product development.

Acknowledgement

The IGF project 18519N by the research association Forschungskuratorium Textil e.V., Reinhardtstraße 12-14 10117 Berlin, was sponsored via the AIF as part of the programme to support „Industrial Community Research and Development“ (IGF), with funds from the Federal Ministry of Economics and Energy (BMWi) following an Order by the German Federal Parliament.

Hohenstein Laboratories GmbH & Co. KG
D 74357 Hohenstein



Investigation of antimicrobial activity (© Hohenstein Group)



On 26th September 2017, groundbreaking took place for Ypsomed's new production facility in the Industrial Park of Schwerin, Germany. Ypsomed is to invest over EUR 100 million in the new production site. Production will commence during the first half of 2019. Ypsomed plans to create roughly 150 jobs in the region over the next five years.

Go-ahead for Ypsomed's new production facility in Schwerin

Groundbreaking heralded the beginning of construction of the new production facility in the Industrial Park Schwerin. Construction will take approximately 18 months. The new plant will start up operations during the first half of 2019. After opening, the Schwerin site will accommodate production, a logistics warehouse, quality control and technical maintenance. On the manufacturing side, production will include injection and infusion systems as well as infusion sets for insulin pumps. The facility will be equipped with state-of-the-art cleanrooms, plastic injection moulding machines, printing equipment and automated assembly and packaging machines. During the initial five years, the new site will create some 150 jobs in the region. Additional jobs will be created as production increases.

As the production sites in Switzerland have been expanded to the limit and production capacities will be exhausted after 2020, Ypsomed has decided to increase capacities in Schwerin, in Germany's northeast. "The Schwerin location offers us perfect conditions. Being located in the EU, this provides us with a high level of planning and legal safety. Development of the infrastructure is excellent and the vicinity to the port of Hamburg gives us shorter trading routes. Furthermore, the Schwerin greater area offers an ample pool of qualified employees" is how Simon Michel, CEO of the Ypsomed Group, comments the step to Germany.

Groundbreaking was not only attended by Ypsomed's Management, but also included Minister Harry Glawe, Minister of Economic Affairs of the state Mecklenburg-Western Pomerania, and Schwerin's

Mayor, Dr. Rico Badenschier. Minister Glawe welcomed Ypsomed's step to Schwerin: "The Ypsomed company is investing into the field of medical engineering, an area which is very important for us. Innovative products will be manufactured and high-quality jobs created in Mecklenburg-Western Pomerania. I am pleased that our location advantages were able to convince the Swiss company. This new establishment is confirmation of the attractive business location Mecklenburg-Western Pomerania. It is also the result of intensive campaigning in Switzerland in an exciting growth market. Welcome to Mecklenburg-Western Pomerania."

Facts and figures on the new Ypsomed production site Schwerin:

- 100'000 m2 land, option for a further 2 x 50'000 m2
- 20'000 m2 building area
- EUR 50 million planning and construction costs
- EUR 50 million investment in production equipment
- 18 months construction time, completion of building and start of production during the first half of 2019
- Approximately 150 jobs over the first five years with additional jobs as production increases

Ypsomed Holding AG
CH 3400 Burgdorf



Inauguration in France (from left): Bruno Lenain (Managing Director of Kaiser Optical Systems Europe), Laurent Mulley (Managing Director of Endress+Hauser France), Gilles Gascon (Mayor of Saint-Priest), Klaus Endress (Supervisory Board President of the Endress+Hauser Group), Matthias Altendorf (CEO of the Endress+Hauser Group), Tim Harrison (CEO of Kaiser Optical Systems) and Serge Cheynel (Director of Regional Sales, Endress+Hauser France) cut the ribbon.

Sales Center and Kaiser Optical Systems European headquarters together under one roof

Endress+Hauser inaugurates new campus in Lyon

Endress+Hauser has invested 4.9 million euros in a new building in Lyon. As well as 25 sales and service employees from Endress+Hauser, nine employees from the European headquarters of Kaiser Optical Systems will move into the new facility.

“The new building offers modern offices for our employees and abundant space for customer training,” says Laurent Mulley, Managing Director of Endress+Hauser France, who is delighted with the new facility. “At the same time we are bringing together Endress+Hauser’s process control technology and the advanced analysis processes of Kaiser Optical Systems under a single roof. We are thus laying a foundation that will allow us to strengthen our presence in the French market over the long term,” added Laurent Mulley during the dedication ceremony that was attended by customers, as well as guests from business and government.

Close collaboration

“One of the cornerstones of our strategy is to one day support our customers’ lab and process control applications,” explained Matthias Altendorf, CEO of the Endress+Hauser Group. “Having Endress+Hauser and Kaiser Optical Systems in proximity in Lyon illustrates the progress we are making in carrying out this strategy.” Expanding the business in the area of process control and laboratory analysis reflects the wishes of many customers for enhanced quality parameter measurements.

Long-term investment

The new energy-efficient office building is located near Lyon-Bron airport, in one of the fastest-growing business regions in France. The building houses 1,500 square meters of office space, warehouse facilities, a training center and a presentation room for customer training. With a total of around 7,000 square meters of space, the campus offers sufficient room to grow the location further.

Synergies for optimal customer management

The primary beneficiaries of the collaboration between Endress+Hauser and Kaiser Optical Systems are customers in the life sciences, chemical, water & wastewater, food & beverage and oil &

gas industries. American-based Kaiser Optical Systems was acquired by Endress+Hauser in 2013. The company’s Raman spectroscopy analyzers are designed for examining the composition and properties of liquid, gas and solid materials.

Endress+Hauser in France

Endress+Hauser France has more than 250 employees at its headquarters in Huningue and at offices in Paris, Bordeaux and Lyon. As well as the French market, the Sales Center also oversees the Group’s business in French-speaking Africa. Kaiser Optical Systems has 76 employees at its headquarters in Ann Arbor/Michigan, where the production facilities are co-located. The nine employees assigned to the Lyon office are coordinating the European sales activities.

Endress+Hauser AG
CH 4153 Reinach BL 1



Close cooperation: Endress+Hauser, and its subsidiary Kaiser Optical Systems, a specialist in state-of-the-art analyzers, move into a new facility in Lyon.



Vorn im Bild v.l.n.r.: Professor Thomas Bauernhansl, Institutsleiter des Fraunhofer IPA, und Lifeng Xi, the Vice-president of Shanghai Jiao Tong University. Hinten im Bild v.l.n.r.: Xiaohua Wu, the Deputy Director of Shanghai Lingang Area Development Administration, Pin Gan, the Deputy Director of Shanghai Science and Technology Commission, Zhongqin Lin, the President of Shanghai Jiao Tong University, Jie Chen, the Director of Shanghai Lingang Area Development Administration, Michael Lickefett, Abteilungsleiter Fabrikplanung und Produktionsmanagement des Fraunhofer IPA, und Guohua Yuan, CEO of Shanghai Lingang Economic Development (Group) Ltd.

In Shanghai/Lingang, one of China's leading science and technology regions, the Fraunhofer Institute for Manufacturing Engineering and Automation IPA has entered into a cooperation with Shanghai Jiao Tong University (SJTU), initially set to run for five years. The aim of the cooperation at the so-called "Project Center for Smart Manufacturing" is to implement projects in the research fields of digital transformation and artificial intelligence in collaboration with industrial partners. The scheme's signing ceremony was held on the 14th of October 2017.

Fraunhofer IPA plans project center in Shanghai

The Chinese government wants to support the cooperation with 10 million euros over the first five years. Besides office areas and seminar rooms, there are also plans for laboratories and experimental areas equipped with a suitable IT and hardware infrastructure. These are intended to function as a source of ideas and inspiration, in short as an innovative think tank. The knowledge gained will be imparted both to German as well as Chinese companies located in China. In the long term, the plan is for over 40 scientists from diverse professions to work at the project center.

Professor Thomas Bauernhansl, Institute Director of Fraunhofer IPA, sees great potential in the cooperation: "Already today, intelligent machines, tools and components, as well as orders, interact in networked value systems practically in realtime. Via IT components, smart objects collect data from production, engineering, coordination and management processes, enabling them to influence physical processes. Industry's future lies in these so-called cyberphysical manufacturing systems. Industrie 4.0 is not a national but rather an international topic. What we need is international cooperation, standardization and access to the right markets. In this regard, China is a highly important partner".

A common understanding of Industrie 4.0

Michael Lickefett, Head of Department of Factory Planning and Production Management, who is responsible for the content of the project center as far as Fraunhofer IPA is concerned, adds: "What is known in Germany under the name of Industrie 4.0 is called "Made in China 2025" there. In addition to classical topics, for example factory planning and process optimization, the main aim is to work on subjects such as artificial intelligence and their application in the fields

of robotics, machine vision and language processing. As an applied research institute, we offer excellent conditions which can be ideally combined with the pioneering spirit of the Chinese".

For Lickefett, who has been keeping an eye on scientific developments in China for some time now, projects which vary too much from one another are pooled under the term Industrie 4.0. A positive effect of the roadmap drafted with the project center is therefore also educational work in the sense of a common understanding.

Stepping up the presence in the Far East

In addition, the Fraunhofer-Gesellschaft has a subsidiary in Singapore, as well as further so-called Fraunhofer Representative Offices in China, India, Indonesia, Japan and Korea. These evaluate and exploit the Asian market for the various Fraunhofer institutes and their German partners from industry to form a bridge with local Asian companies. A Fraunhofer Senior Advisor in Malaysia also supports activities on site.

 **Fraunhofer**
IPA

Fraunhofer-Institut für Produktionstechnik und Automatisierung IPA
Nobelstraße 12
D 70569 Stuttgart
Telefon: +49 711 970 1667
E-Mail: joerg-dieter.walz@ipa.fraunhofer.de
Internet: <http://www.ipa.fraunhofer.de>



2nd DeburringEXPO Convinces Exhibitors and Visitors with Quality

World-Class Leads and Valuable Projects



“This trade fair is attended exclusively by expert visitors who are looking for a solution to a deburring problem or for optimised surface finishing” – this is the conclusion arrived at by nearly all of the 151 exhibitors at the second DeburringEXPO from the 10th through the 12th of October, 2017. Roughly 2000 visitors from 38 countries travelled to Karlsruhe for the 2nd trade fair for deburring technology and precision surface finishing. Their technical qualifications and high levels of decision-making authority resulted in numerous excellent leads and valuable projects for the exhibiting companies. With more than 1000 participants, the expert forum which was held in two languages for the first time was also one of the trade fair’s highlights.

With an exhibition spectrum that’s consistently aligned to deburring, rounding and the production of precision surface finishes, DeburringEXPO covers a range processes which are becoming more and more important in manufacturing. On the one hand, this was made apparent by the number of participating exhibitors which rose this year to 151 (108 at the initial event in 2015), and on the other hand by the visitors’ strong focus on the offerings presented by the exhibiting companies. Visitor numbers were at the same level as for the premiere event, i.e. roughly 2000. 23% of the visitors came from outside of Germany and journeyed to

the trade fair from a total of 38 countries. In addition Germany, the best represented countries were Switzerland, France, Italy, Austria, the Netherlands and Belgium. Visitor distribution demonstrates focal points in machinery and equipment manufacturing, automotive and vehicle production, medical technology, tool and die making, precision engineering and optics.

“The issues of deburring and precision surface finishing are becoming more and more important for manufacturing companies, because something is always left behind despite all of the optimisation measures implemented in advance, and has to be remo-

ved”, explains Ralf Krieger, Contract Shop Manager Europe at Extrude Hone GmbH. And he adds: “From our point of view DeburringEXPO has developed very well – we were able to establish significantly more qualified contacts this year than two years ago, and they’re more international as well.”

Outstanding Atmosphere Thanks to Highly Qualified Visitors and High Levels of Decision-Making Authority

Not only did the large number of visitors contribute to strong satisfaction on the part of the exhibitors, but rather the high levels

World-Class Leads and Valuable Projects

of decision-making authority as well. Roughly 94% of all visitors are involved in company investment decisions. This made it possible to launch numerous projects. "We presented a new ultrasonic deburring process. Not only was interest very strong, we were also able to schedule sample processing with representatives from several companies", reports Günter Hiedels from project management at Weber Ultrasonics AG. "The first DeburringEXPO went surprisingly well for us, and things have gotten even better this year. We've fielded lots of good leads including projects we assume will finally lead to orders, and that's extremely positive", exclaims Jörg Nubert, managing director of Piller Entgrattechnik GmbH. Keisuke Kaga, Head of Europe Sales at Sugino Machine from Japan, also reports lots of valuable leads: "Visitors at our booth came primarily from the automotive and aviation industries, as well as from the fields of hydraulics and pneumatics. We know the tier 1 suppliers and the big companies from these industry sectors. Here at the trade fair we've also been able to establish contact with tier 2 and 3 suppliers, as well as smaller companies, with whom we weren't familiar in the past. And not only companies from Germany, but from many other countries as well such as Italy, France, Belgium, Sweden, Denmark, the USA, India and Brazil. Trade fair participation has paid off four us and we'll be back again in two years." Jessica Lacovitti from the sales department at Italian machinery manufacturer Tecnomacchine was also highly satisfied: "We exhibited at a big machine tool trade fair a few weeks ago, but the most interesting visitors for us are very well represented here at DeburringEX-

PO. We came to Karlsruhe with the goal of maintaining existing customer relations, as well as establishing contact with new companies. We've been very successful with both and we're very pleased that we participated at the trade fair. I think we'll exhibit again at the next event in two years." Joe Zou, Overseas Business Contact for Guangdong HESH Industry Technology Group Co., Ltd. in China, achieved his trade fair goals too: "We got to know some potential sales partners who will make it possible for us to export our products worldwide. And we've been able to establish contacts with potential end customers. I'm sure we'll exhibit at the trade fair again." And there's no doubt for Adrian Forster, Barrel Finishing Sales Manager at Forplan AG in Switzerland, that his company will participate at the event in 2019 too: "Our solutions for small parts processing met with great interest on the part of visitors from the textiles industry, medical engineering and the automobile industry, as well as job-shop processors, and they generated lots of valuable leads. The trade fair went very well for us and we'll be back again in two years." Nor is there any question about this for Yamac Aksan, industrial engineer and proprietor of AKS Teknik Deburring and Marking Technologies in Turkey: "The trade fair is exceptionally well organised and the visitor profile is world-class. All of the visitors come with concrete tasks, and we're able to establish precisely the kind of contacts we want. We'll definitely be back again."

The depth to which the subject matter is explored at DeburringEXPO is illustrated by the experiences of Tanja Kanzy, marketing manager at Kullen-Koti GmbH: "Each

visitor brings a concrete case involving a specific application along with him, so that consultation can begin immediately. Discussions about how which burrs can be removed can last as long as two hours. This is not the case at any other trade fair and it makes DeburringEXPO a very important event for us." Marcel Prößler, Optical 3D Measuring Technology Sales at Alicona Imaging GmbH in Austria (participating for the second time as well), was also enthusiastic about the depth of the conversations: "All of the visitors are involved with the issues of deburring and edge rounding. As a result, we can advise them directly about how they can optimise their processes through the use of our measuring technology. We were able to generate lots of valuable leads with companies from a great variety of industry sectors. The trade fair was very good for us."

High Levels of Satisfaction Amongst the Visitors Too

The visitors' reactions were also positive. For example, the visitor survey revealed that 85.8% were very satisfied to satisfied with the offerings presented at DeburringEXPO. More than 70% would recommend the trade fair for deburring technology and precision surface finishing to their colleagues.

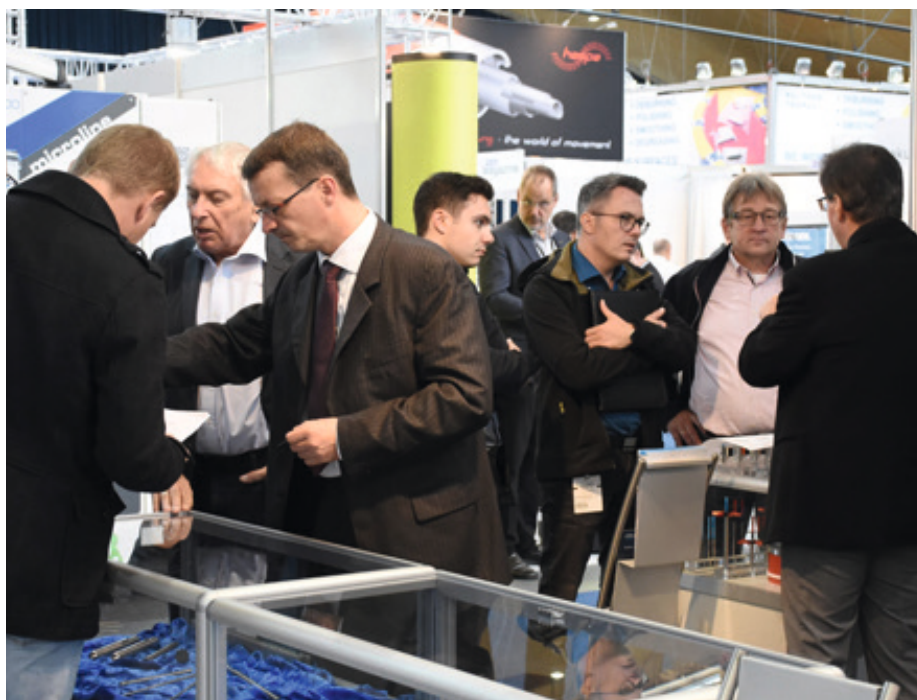
Knowledge in Demand

For nearly 30% of the visitors, the programme offered by the DeburringEXPO Forum influenced the day on which they attended the event. The presentations dealing with various issues covering all aspects of deburring, the production of precision surface finishes and cleaning after deburring were simultaneously interpreted for the first time (German <> English). A total of roughly 1000 visitors, including an evidently large number of international guests, took advantage of the expert forum during the three trade fair days, in order to gain in-depth knowledge and exchange experience.

The next DeburringEXPO, which numerous exhibitors have already firmly scheduled in their trade fair calendars, will take place at the Karlsruhe Exhibition Centre from the 8th through the 10th of October, 2019.

**08th - 10th October 2019:
Deburring Expo 2019, Karlsruhe (D)**

fairXperts GmbH
D 72639 Neuffen



Integrated furnishing solutions for creating the optimum ergonomic industrial workplace were the key theme at this year's Dauphin Group stand at the A+A in Düsseldorf. Looking at the working environment as a whole makes it possible to cater for the needs of various industrial areas with the help of ergonomic products. The Dauphin Group's professional approach includes the "Industry Trainer", a new five-minute exercise and stretching programme which raises workers' awareness of ergonomics in industrial workplaces.

A healthy seated posture and ergonomic working in industrial workplaces



With its presentation of application-oriented, integrated solutions for ergonomics, efficiency and design, the Dauphin HumanDesign Group focused on a key theme of the A+A 2017 and demonstrated innovative approaches for industrial workplaces.

"human space Cubes" – room-in-room systems for industrial use

Given the need for ever greater productivity, self-contained rooms and areas for breaks are important in industry. Up until now, however, private areas where people can make telephone calls for example were usually reserved for office staff. With the "Bosse human space Cube", the Dauphin Group is now presenting its proven room-in-a-room system for industrial areas too. The cube can be used in a variety of ways: with optimum sound insulation and absorption, stable temperatures and a supply of fresh air, they are suitable not only as managerial or factory offices but also as attractive zones for privacy or breaks. The cubes help people to concentrate on their work while remaining close to production and production processes. For maximum flexibility, a cube can be positioned anywhere in a room – independently of the building – and can be set up in just a few hours. With the "Bosse Telephone Cube", visitors to the stand at the A+A can see for themselves the benefits of the room-in-a-room system.

Tec profile – the all-rounder for any area of use

The ergonomics experts from Offenhausen also presented the AGR-certified Tec profile range of industrial chairs. Thanks to various special models, it is suitable for use in a wide variety of areas – from production and assembly areas to ESD protection zones and even 24-hour workstations. For the first time ever, the Tec profile is also available in a "MicroSilver" version which, thanks to an antibacterial coating, is the ideal seating solution for areas where hygiene is a priority. By constantly releasing MicroSilver BG™ silver ions, it is proven to permanently reduce levels of bacteria, for example in laboratories or the foodstuffs industry. What is more, the coating remains effective throughout the



The AGR-certified Tec profile industrial chair range can be used in a wide variety of areas – from production and installation areas to ESD protection zones and even laboratories and clean rooms. For the first time ever, the Tec profile is also available in a special "MicroSilver" version offering permanent protection against bacteria. It represents the ideal seating solution in areas with particularly strict hygiene requirements. (Photo: Dauphin HumanDesign Group)

chair's operating life and is not affected by mechanical wear or cleaning.

Dauphin Stilo – stylish, ergonomic seating

Whether it be in a managerial office or in production planning, not only assembly and production workstations but also ergonomic solutions for classic desk work are needed in all industrial companies. Dauphin's new Stilo office swivel chair meets all the requirements as regards ergonomics, design and ease of use, making it ideal for use in these areas. At the A+A, visitors were able to experience the numerous different models in the range.

New "Industry Trainer" – an effective training programme to encourage exercise in industrial workplaces

Simply purchasing ergonomic furniture and work equipment is not enough. Employees can only get the full benefit of health-promoting work equipment if their working habits are geared to protecting their health and preventing illnesses. With the new "Industry Trainer", the Dauphin Group presented a brief but effective training programme

as a way of preventing illnesses in industrial workplaces. It is designed to encourage employees to include regular phases of exercise by performing simple gymnastics and stretches. This helps to prevent tension in the joints and also encourages concentration. Dauphin is providing the "Industry Trainer" in the form of a poster and a brochure – these can be ordered from info@dauphin.de.

**05th - 08th November 2019:
A+A 2019,
Duesseldorf (D)**

DAUPHIN

HumanDesign® Group

Dauphin HumanDesign® Group GmbH & Co. KG
Espenstraße 36
D 91238 Offenhausen
Telefon: +49 (0) 91 58 / 17-514
Telefax: +49 (0) 91 58 / 17-701
E-Mail: info@dauphin-group.com
Internet: <http://www.dauphin-group.com>



Ansell's new glove types for optimal hand and body protection

Ansell raises the bar in hand and body protection with six new glove types at A+A Duesseldorf



Ansell, a global leader in protection solutions, introduced six new gloves offering the ultimate hand protection at A+A in Düsseldorf, from 17th until 20th October 2017. The new safety solutions provide resistance and durability, while guaranteeing tactility and the highest level of protection, and can be used across a broad range of industries such as Automotive, Chemical, Life Sciences and Manufacturing.

"We are continuously investing in the research and development of new materials, products and services that improve worker safety and efficiency," says Peter Dobbelssteijn, Senior Vice President Global Supply Chain & Ansell Global Guardian. "These new solutions help to solve the challenges industrial workers and health and safety managers are coping with, offering the highest protection."

Redefine your COMFORT ZONE™ with HyFlex® series; gloves for advanced mechanical protection

The light, durable HyFlex® 11-937 and 11-939 gloves provide protection from cuts and oil exposure across multiple applications in automotive, machinery and equipment and metal fabrication. The RIPEL™ technology prevents oil from making contact with the

worker's skin, keeping hands safe and dry. The superior performance of the ANSELL GRIPTM technology guarantees safe handling of both wet and dry materials. The ultra-lightweight 18-gauge design provides dexterity and a high level of comfort. The reinforced thumb crotch offers increased protection and longevity, while the high durability FORTIX™ coating is extending the use life. HyFlex 11-937 has a ¼ dipped coating while HyFlex 11-939 is the fully coated version.

The HyFlex range also includes the HyFlex® 11-816, which strikes an ideal balance between tactility and durability thanks to its unique coating providing high abrasion resistance for a longer wear time. The HyFlex 11-816 is designed for lightweight applications in dry or slightly oily environments.

Featuring INTERCEPT™ cut-resistant technology, the HyFlex® 11-542 brings comfort and protection in a wide range of applications and risks, avoiding the need to change gloves between tasks. Better compliance is guaranteed thanks to its Level 1 EN407 Contact Heat protection for intermittent contact with hot parts and equipment.

Feel EQUIPPED™ for ultimate protection

For a higher level of protection against

harmful exposures. Ansell has developed the ultimate barrier disposable nitrile glove Microflex® 93-850. Made with TNTM Chemical Splash Resistance Technology, this glove offers soft durable protection against a wide range of chemicals. Due to a breakthrough polymer bonding technique, the Microflex 93-850 provides twice the chemical splash protection than other leading brands and exceeds every known standard for barrier quality and consistency.

AlphaTec® 58-735 ensures both chemical and cut protection by combining both the INTERCEPT™ cut resistance technology and the ANSELL GRIP technology. The glove presents a longer cuff for extended chemical protection, and its Hi-Viz INTERCEPT liner acts as an indicator when chemical safety is compromised. It is intended for applications in the Chemical Industry, Life Sciences and Oil and Gas.

**05th - 08th November 2019:
A+A 2019, Duesseldorf (D)**

Ansell GmbH
D 81829 München

POWTECH India is the new name for the trade fair for powder, bulk solids and process technologies that has previously taken place in Mumbai, India, under the name "Powder and Bulk Solids India". The change was announced by Sajid Desai, CEO, NürnbergMesse India and Petra Wolf, member of the NürnbergMesse Management Board, at POWTECH 2017 in Nuremberg. The name reflects the extended scope of the event and underscores the association with POWTECH World, the network of leading global trade fairs for powder and bulk solids processing and mechanical processing technology.

Powder and Bulk Solids India renamed POWTECH India

"Since its establishment in 2010, the thematic diversity and product range of the fair has grown constantly and its execution has become more professional. This is where exhibitors meet precisely the target groups they seek. The new name 'POWTECH India' and sub-title 'India's Leading Technology Expo for Processing, Analysis and Handling of Powder & Bulk Solids' illustrate this perfectly," explains Sajid Desai, CEO, NürnbergMesse India. "We are delighted that the close connections with the leading industry fair POWTECH are now being reflected in the name of the event."

Petra Wolf from the NürnbergMesse Management Board had this to add: "The trade fair alliance POWTECH World is the leading network for the global bulk solids community with events in Brazil, China, India and Germany. The new name POWTECH India shows our confidence in the quality and strategic direction of these international trade fairs. We will continue to develop and fine-tune POWTECH India and the other POWTECH World events in the future with our local partners."

Strong links with POWTECH

The next POWTECH India will take place in Mumbai from 11 to 13 October 2018. A conference series in three Indian cities taking place in September 2017 was organised by the POWTECH India Team and represents an additional source of expertise on all aspects of mechanical process engineering.

The Indian offshoot of POWTECH was established in 2010 as "Bulk Solids India" and was initially directed mainly at the segments mining, cement, transport and energy. The trade fair and the range of products grew rapidly, so that the third event in 2012 went under the name "Powder & Bulk Solids India" to reflect the extended range for mechanical process technology and powder handling. Today, the event is attended by users from a wide range of industries such as pharmaceuticals and chemicals, food production and plastic and cement manufactu-

ring, all of which offer high growth potential in India.

Process engineering worldwide

POWTECH World is a global network of trade fairs and conferences related to mechanical processing technology. The various POWTECH World events provide the ideal platform for global knowledge-sharing and new global business connections. Other forthcoming POWTECH World Events include:

- IPB China

International Powder & Bulk Solids Processing Conference & Exhibition, 16 to 18 October 2017, Shanghai, China

- POWTECH

The world's leading fair for the processing, analysis and handling of powder and bulk solids will take place in Nuremberg from 9 to 11 April 2019.

NürnbergMesse GmbH
D 90471 Nürnberg



POWTECH INDIA

India's Leading Technology Expo
for Processing, Analysis and
Handling of Powder & Bulk Solids



Cooperation FANUC and NEXUS, September 2017

Two-component technology and automated production cell with sustainable injection moulding performance – always all-electric

FANUC at FAKUMA 2017 in Friedrichshafen, Germany



In recent years, injection moulders have clearly shown an increasing interest in all-electric injection moulding machines with particularly economic energy balance as well as in fully automatic production systems. FANUC exhibited three of its all-electric ROBOSHOT injection moulding machines at FAKUMA 2017, which took users' current requirements seamlessly into consideration.

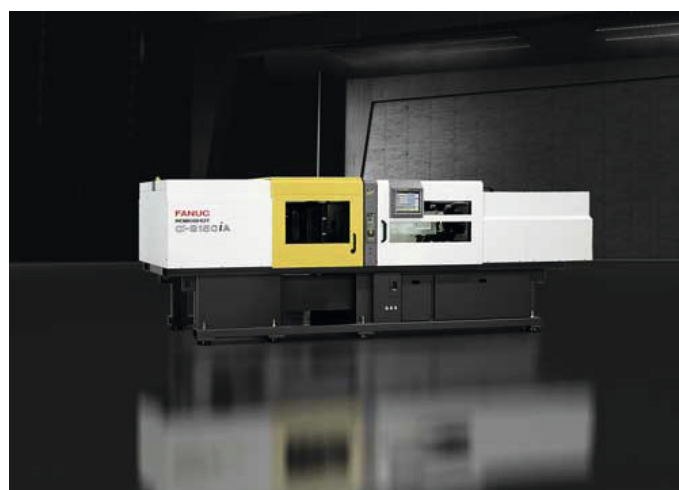
LIVE demonstrations

A 150-ton ROBOSHOT Alpha-S150iA in a fully automatic production cell shows precision parts with light conductor in a two-component injection moulding process. Visitors could also get information regarding economic production of moulded parts in LSR on a 130-ton version supported by an M-10iA – M-20iA FANUC robot. The third exhibit, a 30-ton ROBOSHOT Alpha-S30iA with a M-iiA robot, produces Smartphone precision connectors in LCP in a highly economically way.

“With three specific applications, we will show a cross-section of the FANUC ROBOSHOT performance in cooperation with renowned systems partners...”, explained Wolfgang Haak, production manager ROBOSHOT, and elaborates “...with energy recovery control, consistent repeatability, precision and process security and torque-dependent dosing control – PMC2 and PMC3 – with a specific backflow monitor and the efficient AI mould protection. Last, but not least, we will demonstrate our economic and technological competence, in conjunction with our systems partners, in the sectors two-component injection moulding and production cells with high flexibility.”

Production cell for two-component applications

On a FANUC ROBOSHOT Alpha-S 150iA with vertical SI-20iA injection unit – integrated in a Robotech Plastic-Mate production cell – automotive parts with light conductor are produced in Macrolon PC in a Weber two-cavity turntable mould. Part removal is carried out by



ROBOSHOT- S150iA



ROBOSHOT-SI-30iA+-SI-20iA, Zweikomponenten-Spritzgießmaschine

FANUC at FAKUMA 2017 in Friedrichshafen, Germany

a FANUC LR-Mate 6-axis industrial robot, combined with a linear axis as well as an iRvision integrated visual control station. The result is 100 percent assured double-sided part control, consistent component weight and a total cycle time of only 57 seconds.

Cooperation between FANUC and NEXUS

A highlight was the turnkey system with a Nexus ROBOSHOT LSR, bringing premium performance to elastomer injection moulding. The associated injection mould, made in the in-house tool shop, with TIMESHOT cold-runner control is supplemented by the integration of two SERVOMIX dosing systems with unique SPLITNEX technology and the new NANOSHOREMIX LSR application (NEXUS SERVOMIX E200 Premium Edition + NEXUS SERVOMIX E20 Eco). Demonstrated was the production of a component in Elastosil 3066/60 liquid silicon by Wacker.

System Components:

- FANUC NEXUS ROBOSHOT LSR injection moulding machine Alpha-S 130iA
- FANUC robot M-10 – M-12
- NEXUS LSR NANOSHOREMIX (dosing system SERVOMIX E200 Premium Edition + LSR dosing system SERVOMIX E20 Eco)
- NEXUS LSR 16-cavity injection mould with TIMESHOT valve gate cold-runner system
- Packing and printing including conveyor belt

FANUC ROBOSHOT ALPHA-S 30iA producing precision connectors – four parts every two seconds. Produced are LCP Smartphone precision connectors in a four-cavity mould supplied by SAYAMA. Those products must meet the strictest quality standards. Consequently, these parameters require very high process stability and reliability of the machine. The all-electric FANUC ROBOSHOT fully complies with these conditions providing innovative unique servo control functions. Cavity-dependent component sorting is enabled via the M-11A robot, equipped with iRvision for optical recognition. The state-of-the-art high precision miniature connector boasts a pitch of merely 0.35mm – with a precision factor within the μ range. With less than 2 seconds, the cycle time is remarkably short.

FANUC Europe Corporation S.A.
L 6468 Echternach

Energy regeneration – with emphasis on profit

The feature of energy recovery – whereby the servo-drive motors in the ROBOSHOT machines generate electrical energy as they decelerate, when closing and opening the mould after locking – contributes a tremendous potential for reducing energy costs. “We utilise kinematic and turn it into regenerated power instead of discharging thermal energy into the air,” said Wolfgang Haak, and added that “the amount of energy produced in this way depends on the machine and process, but it amounts to around 5 percent of power saved on average, on top of the 40-60 percent lower energy consumption of all-electric machines as opposed to hydraulic ones. Today, we must not forget the issue of CO2 emissions: the greater the energy requirements of a manufacturing plant, the higher are the CO2 emissions. With our ROBOSHOT machines, less energy is required from the national power grid, which means lower emissions and the protection of our environment”.

FANUC ROBOSHOT highlights at a glance

Sustainable process capability – stable moulding through Backflow Monitor and Precise Metering Control PMC2 and PMC3: The first feature is the Backflow Monitor, which shows the backflow of material at the time of injection on a screen. This allows conclusions (feedback) regarding the stability of the injection, the closing characteristics of the non-return valve as well as its status. The second feature is the Precise Metering Control (PMC2 and PMC3). Residual pressure in the screw flights compensates volume displacements at the end of the dosing cycle. It guarantees a constant dosing volume and minimises weight deviations of the parts to be moulded.

The AI mould protection and AI ejector functions of the FANUC ROBOSHOT series of IMMs are very effective in safeguarding a longer lifetime of the mould. The AI mould protection function stops the closing motion instantaneously as soon as it detects foreign parts or obstacles remaining in the mould – thus preventing damage to the mould. It also averts damage to the slide core and inserts when the mould is opened. Furthermore, the AI ejector function is very effective in preventing damage to the ejector when it moves forward or backwards. The machine reacts before damage can occur at the mould, as soon as an ejector’s movement starts to stiffen up.



ROBOSHOT-Series-S150iA-S50iA

World's largest medical trade fair with its finger on the pulse

New highlights in the MEDICA programme



The number of people in Germany who work in the health sector increased to more than seven million for the first time in 2016. The industrial side of the healthcare sector alone now employs a good 900,000 people and consequently more than 100,000 more people than the automotive industry does (according to BMWi / GGR, VDA). Just like the automotive industry, however, the healthcare sector is also experiencing rapid change. MEDICA, the world's leading medical trade fair – to take place from 13 to 16 November 2017 in Düsseldorf – will be embracing this dynamic with the presentation of new products by more than 5,000 exhibitors from 68 countries and by devoting the accompanying conferences and expert conferences to it.

Digitalisation has fed into all aspects of supply and buzzwords such as 'networking' and 'artificial intelligence' are characterising the technical discussions and already influencing product development concretely. Expert professionals will be able to gain insights into all the developments – be it during the presentations and talks at the MEDICA CONNECTED HEALTHCARE FORUM, during the MEDICA HEALTH IT FORUM, with the help of the exhibitors' new products and even through the exciting MEDICA APP COMPETITION.

More and more health applications for smartphones, tablet PCs and 'wearables' – applications that are already enjoying increasing acceptance in the practical world – are going to be presented, for instance, within the appropriately relevant contexts. 45% of German smartphone owners are already using health apps and another 45% can see themselves using them. A further 60% of people in Germany approve of the concept of an electronic patient file that could be used to store their medical data centrally (Source: Bitkom / Bayerische TelemedAllianz BTA).

Artificial intelligence (AI) is another topic that the healthcare sector is becoming increasingly preoccupied with. It will consequently also be on the agenda at this year's MEDICA HEALTH IT FORUM (Hall 15). A robot that is able to automatically set up needles for infusions and biopsies was already presented to an amazed expert audience at MEDICA 2016. This example shows: What previously seemed pure science fiction is currently on the threshold of becoming reality in concrete and plausible applications. This is also the case in the field of medical imaging. The first applications to use artificial intelligence for the automated detection of possible tumours on the basis of digitally



13th - 16th November 2017: MEDICA, Duesseldorf (D)

generated image data from CRT or MRT systems are about to be launched on the market.

The new and the tried-and-tested – conferences and forums

With the aim of meeting the needs of the international professional public even into the future, the programme for the accompanying conferences and the forums integrated into the trade fair have, over recent years, been radically restructured and aligned at a more international level with many highlights also being presented in English and rounded off by ever-new formats that focus on topical subjects.

The dynamic that characterises eHealth applications and the digital networking of those involved in the health sector are producing interesting business options, for example, particularly for creative start-ups – be it in innovative services, smart products or software applications. That is why the new MEDICA START-UP PARK has been created in Hall 15 with the intention of matching founders of innovative businesses with potential business partners, investors and distribution partners. With the aim of complementing the contents that are going to be presented at MEDICA CONNECTED HEALTHCARE FORUM and the MEDICA HEALTH IT FORUM (both also in Hall 15), up to 40 start-ups will be presenting themselves and their ideas to an audience of experts on a total area of 500 square metres in direct proximity to these events.

The MEDICA LABMED FORUM is also new this year. Under the key heading of "The Interdisciplinary Fascination", laboratory medicine, molecular pathology, microbiology, medical technology and life sciences will be presenting themselves as drivers of innovation and generating new impulses for the entire medical sector. Four themed days will be offering a range of exciting presentations and panel discussions that will be focusing on the following highlights: Preventive screening tests for cancer, cardiac and circulatory conditions, innovative diabetes diagnostic tools, infection and migration. The events will all be taking place between 11.00 a.m. and 4.00 p.m. and are free for trade fair visitors with MEDICA tickets. The cooperation partner for the content for the MEDICA LABMED FORUM in Hall 18 is the medical publisher Trillium.

The exhibition centre is 'smartening' itself up – new South Entrance, new Hall 1

Hall 18 is a modern structure that has been built with lightweight materials and that is located centrally between Halls 10 and 16. This temporary structure was specifically constructed for exhibitors who are presenting products within the MEDICA's laboratory-technology and diagnostics sections, which were previously located in Halls 1 and 2. These exhibitors will also be able to use another temporary hall built from lightweight materials, i.e. Hall 3a, which neighbours Halls 3 and 4. Background information: The South Entrance to the Messe Düsseldorf

New highlights in the MEDICA programme

dorf trade fair centre is being completely renovated, due for completion in summer 2019. The old Halls 1 and 2 are at the same time going to be replaced with a newly built hall.

Première for the MEDICA ACADEMY

One highlight at the conference programme – the MEDICA ACADEMY – will be celebrating its launch at this year's MEDICA. It will be the venue for two workshops that are going to be devoted to 'blockbuster' subjects related to medical practice and that are going to be held on each of the four days of the fair. These will include, for example, 'updates' about imaging procedures, modern surgery procedures and even an ultrasound 'refresher' course. The MEDICA ACADEMY will also be discussing the 'hand over of practices' as a highly topical subject in a seminar aimed at both young physicians looking for practices and physicians wishing to pass on their practices.

In addition to the MEDICA ACADEMY, additional items on the MEDICA's conference programme will bridge the gap to the new products being presented at the trade fair through presentations with relevance to highly topical subjects and by focusing on the interests of the MEDICA's important target groups. For example, the 40th German Hospital Conference as a leading event for the management of German hospitals deserves to be mentioned here. The bandwidth in this regard ranges from political health questions through aspects of financing and controlling for hospital services to the presentation of best-practice projects for hospital IT. These will additionally be presented at the same time by the ENTSCHEIDERFABRIK IT (IT DECISION-MAKERS) initiative at a large joint stand in Hall 15. This year, the German Hospital Conference is to be complemented by the European Hospital Conference, which takes place every two years as a gathering that allows top decision-makers from European hospitals to swap notes.

Other highlights will include the DiMiMED conference for disaster and military medicine and the MEDICA MEDICINE + SPORTS CONFERENCE (respectively on 14 and 15 November 2017 / Congress Center Düsseldorf South) that will be focusing on prevention and sports medical treatment concepts. The conferences will be held in English and are geared towards an international audience.

Its great reception from participants has meant that the MEDICA PHYSIO CONFERENCE, which was launched in 2014 and organised by the Thieme publishing house, has established itself firmly within the conference programme. With its treatment oriented presentations, it is directed toward the professional scene of physiotherapists, sports medicine specialists and orthopaedists and is taking place this year on 15 + 16 November (Congress Center Düsseldorf South).

Globally unique – varied presentations

Now, and in the future, a central strength of the MEDICA continues to be that it does not just deal with solutions for one individual medical specialist discipline, but that it offers solutions for the complete workflow of patient treatment in one place at one time. No other event

worldwide comes even close to this wealth of innovations.

Being clearly structured by halls, the MEDICA trade fair will be focusing on the following subjects: Electromedicine / medical technology (approx. 2,500 exhibitors), laboratory technology / diagnostics, physiotherapy / orthopaedic technology, commodities and consumables, information and communication technology, medical furniture and specialist furnishings for hospitals and practices.

COMPAMED – the No. 1 for suppliers

COMPAMED 2017 will be taking place in Halls 8a and 8b alongside the MEDICA trade fair on all four days (13 to 16 November). With more than 750 exhibitors, it is the driving force and internationally leading market platform for suppliers to the medical technology industry. The high levels of creativity and development know-how that characterises the supplier sector means that, over its 25 years of its existence, COMPAMED has become the place to see what the future of medical progress looks like. This is where exhibitors will be presenting the technology solutions and services they provide to meet the wide variety of requirement profiles and remits that medical equipment suppliers must satisfy – from microtechnology and nanotechnology solutions, new materials and coatings, components, preliminary products, packaging and services up to comprehensive contract manufacturing.

Last year, there were 127,800 trade visitors from 135 countries at MEDICA and the supplier trade fair COMPAMED, which was held simultaneously.

Messe Düsseldorf GmbH
D 40001 Düsseldorf



The Ferdinand-Braun-Institut demonstrates its capability in III-V electronics at „Productronica“. FBH components are used, among others, for the future mobile communications standard 5G and for industrial as well as biomedical applications.

Core components for future technology solutions – from heterointegrated chips to digital power amplifiers



The Ferdinand-Braun-Institut (FBH) presents a selection of current developments and advances of its power amplifiers, circuits, and heterointegrated chips at “Productronica”. The event is hosted in Munich from November 14-17, 2017 in hall B2, booth 317. The Leibniz institute exhibits at the joint stand of the Research Fab Microelectronics Germany (FMD), funded by the German Federal Ministry of Education and Research (BMBF). FBH showcases jointly with partners from the Fraunhofer Group for Microelectronics and the Leibniz institute IHP.

FBH offers the full value chain in house, from design through chips to modules. The institute presents, for example, heterointegrated chips for terahertz applications that combine the advantages of two technology worlds on chip-level – the high output powers of indium phosphide with the complexity of silicon technology. Further exhibits aim at digitalization and the future mobile communications standard 5G, including digital power amplifiers that offer efficient performance management and highest flexibility at the same time in addition to broadband operation.

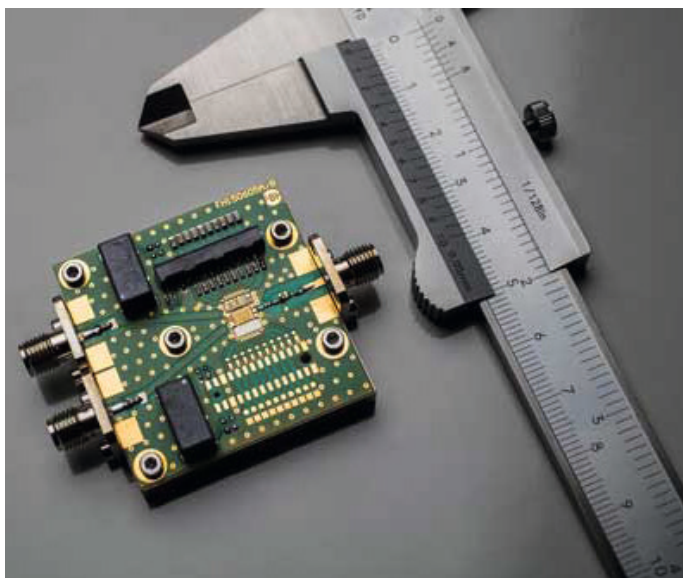
Pushing the frequency boundaries and combining advantages with heterointegrated chips

When it comes to the future of high performance communication, frequencies in the sub-terahertz range are gaining increasing attention. Wireless transmission routes are needed in the frequency band between 100 and 500 GHz in order to overcome the exponentially growing volume of short-range data traffic. Other applications

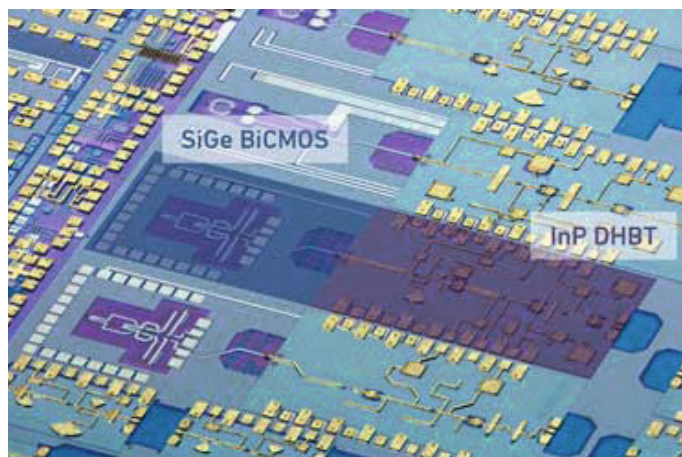
in this frequency band include materials testing, security technology for passenger and baggage screening, and high-resolution radar technology for intricate robotics applications. All of these system applications require electronic circuits that can deliver high output power in the sub-terahertz range – and they cannot be built using conventional semiconductor technology. Instead, FBH uses the semiconductor material indium phosphide (InP) for its integrated circuits. InP heterobipolar transistors (InP-HBTs) currently achieve cut-off frequencies of more than 500 GHz (f_{max}) at a collector current of 20 mA. The breakdown voltage lies above 4 V and thus enables high output powers. An industry-compatible process line for InP circuit wafers is being built at FBH in the scope of the BMBF initiative Research Fab Microelectronics Germany (FMD), launched in April this year. This process line also allows FBH together with the Leibniz institute IHP to integrate InP circuits onto silicon-germanium BiCMOS technology. Thus the high output powers of InP can be combined with the complexity of silicon technology. This way, millimeter-wave and sub-terahertz modules can be created on a single chip, which is paramount for portable and cost-effective system applications. This process is also offered to external customers as foundry service.

Components for the future mobile communications standard 5G

In preparing the technical infrastructure for 5G, the hardware components will have to be made more efficient and more flexible. This can be achieved, among other things, by increasing the degree of digitalization. Currently, focus is on power amplifiers because they dominate the efficiency, and thus the operating costs, of the entire system. Up to now, multiple separate modules have always been required to accommodate different communication standards and



Digital Power Amplifier Module for 5G, the Mobile Communication of the Future (© FBH/schurian.com)



Heterointegrated circuits, combining the advantages of two technology worlds: the high output powers of indium phosphide with the complexity of silicon technology (© FBH/schurian.com)

Core components for future technology solutions

frequencies. FBH has therefore been working for several years on developing new digital amplifier architectures offering efficient power management, utmost flexibility, and broadband operation. The long-term goal is a fully digital transmitter in which one chip serves all frequency bands. Complementary to this, FBH is researching powerful modulation and encoding methods, which largely determine the properties of digital amplifiers. FBH has already developed a novel modulator that can be built using conventional digital components. It also allows signals to be generated by all kinds of modulation methods.

FBH digital power amplifiers already achieve competitive values in terms of overall efficiency and linearity compared to established analog amplifier concepts such as Doherty. One power amplifier recently developed at FBH offers high overall efficiency of greater than 40 % at 10 dB PAPR in the range of around 1 GHz.

Another method for digitalizing power amplifiers is Discrete Envelope Tracking (ET). Modulating the supply voltage of the ampli-

fier output stage ensures high power efficiency despite the strongly fluctuating instantaneous power of modern broadband modulation methods. In Discrete Envelope Tracking, this modulation is done by switching the voltage back and forth only between a number of specific (discrete) constant voltages. This digitalized version of ET yields highly efficient broadband solutions. New international records were recently achieved at FBH, namely a modulation bandwidth of 120 MHz in a 75 W amplifier at 1.8 GHz. This ET concept can also be relatively easily converted for millimeter-wavelength amplifiers, as is crucial for 5G base stations.

14th - 17th Nov. 2017: productronica, Muenchen (D)

Ferdinand-Braun-Institut
D 12489 Berlin

Response to Market Segmentation: Flexible Production of Functional Labels

Agile Supply Chain: Schreiner MediPharm Supports Biotest AG with “Late Stage Customization” Service

Schreiner MediPharm established a special service in a joint project with its customer Biotest AG: Late Stage Customization allows faster production of functional labels on short demand. As a result, Biotest benefits from greater flexibility and is able to respond to market requirements with the requisite agility, while Schreiner MediPharm assists its customer in meeting the demands of current segmentation trends in the pharmaceutical industry.

Biotest is a global supplier of plasma proteins and biotherapeutic drugs primarily used in clinical immunology, hematology and intensive care medicine. Due to its continuous growth, an increasing and diversified product pipeline and complex market conditions, Biotest is seeking to respond to these challenges with a variable supply chain. Speed-to-market and focus on patient needs play an important part in this context.

To address these challenges, Biotest is utilizing Schreiner MediPharm's special Late Stage Customization service. A process center specifically dedicated to this purpose ensures optimum workflow, meeting the exacting quality requirements of the pharmaceutical industry. The labels are pre-produced in large quantities and warehoused at Schreiner MediPharm as semi-finished goods. Subsequently, as requested by Biotest, the pre-produced labels are customized by digital printing and delivered on short notice. Late Stage Customization enables fast response to the customer's demand and flexibility in joint production processes, as defined in partner workshops. A cross-functional project team comprising personnel from Supply Chain, Sales, Packaging Development, Quality Management, Prepress Artwork Creation and Purchasing functions collaborated closely to achieve optimum workflows and results.

Biotest's positive conclusion: “We benefit from a high level of customization, short lead times, fast delivery and high flexibility for short-term demand,” said Stefan Sadkowiak, Head of Final Packaging



at Biotest. “In addition, our process costs have decreased: We no longer have to comply with minimum ordering quantities, have reduced our warehousing expense and avoid destruction costs of preprinted labels due to text revisions.”

Schreiner MediPharm
D 85764 Oberschleissheim

The Gx Elite vials have set new standards for type 1 borosilicate glass vials. They are the result of comprehensive optimization measures in the conversion process, which have focused on designing out the risk to create product flaws during production including the removal of all glass-to-glass contact beginning with the tubing material all the way through final packaging. The chemical composition of the borosilicate glass is still the same. Gerresheimer showcased Gx Elite vials at booth D02 at CPhI Worldwide in Frankfurt (Germany) from October 24 to 26, 2017.

Perfect Gx Elite vials presented by Gerresheimer at CPhI Worldwide

The best in its class

“Our Gx Elite vials are setting new standards when it comes to quality,” says Jens Heymann, Senior Vice President Europe & Asia Tubular Glass at Gerresheimer, underlining the major difference that avoiding glass-to-glass contact in the production process can have on vial quality. The highly shatter-resistant vials are extremely durable and free of cosmetic defects. They also boast an incredibly robust structure, while their resistance to delamination protects the drug inside. Simple handling and a range of packaging options ensure that Gx Elite vials can be supplied for end-to-end use on various filling lines. For customers, this means lower costs and higher quality.

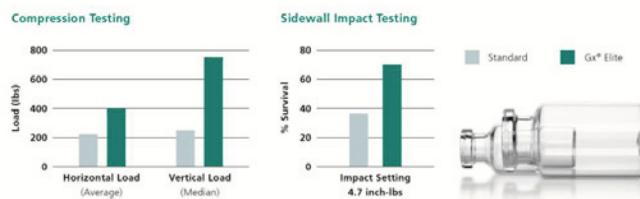
Intelligent defect recognition

All of Gerresheimer’s tubular glass plants that produce vials work with standardized monitoring, inspection, and packaging technologies, which essentially comprise the Gx G3 and Gx RHOC systems. The inspection systems, for one, are developed in house and form part of a close-knit testing system that ensures the highest precision and quality assurance in line with the latest standards. Complete with five HD cameras, the Gx G3 inspection system makes sure that cosmetic defects are identified reliably, for instance. The intelligent software detects and classifies the defects in a few fractions of a se-

cond, while the Gx RHOC system ensures dimensional quality with three HD matrix cameras on each side and a hypercentric ID camera.

Injection vials set the benchmark for primary packaging for parenteral drugs. Gerresheimer’s come in all sizes and comply with the relevant international standards and pharmacopoeias (EU, USP, JP). The company’s range includes solutions for bioengineered drugs and other specialist pharmaceuticals.

Gerresheimer AG
D 40468 Düsseldorf



Gx Elite vials are a step up from standard products, performing significantly better in compression and side impact tests.

Under the terms of the agreements, interpack and Ipack-Ima will reciprocally support their packaging trade fairs held in Düsseldorf and Milan whilst UCIMA will provide support to the international events of Messe Düsseldorf organized as part of interpack alliance. The aim of the partnership is to offer a reference network to companies in the packaging branch and related processing industries. The partners now have signed respective agreements defining the details of their partnership, first announced at interpack 2017.

Strategic alliance between interpack, Ipack-Ima and UCIMA signed

The cooperation with Ipack-Ima includes communication measures like websites, mailings, brochures, press meetings or information booths for the reciprocal support of interpack in Düsseldorf and Ipack-Ima in Milan. “Ipack-Ima is one of the most important trade shows in Europe and can boast a leadership position in a number of sectors such as Pasta or Milling,” said Bernd Jablonowski, Global Portfolio Director Processing and Packaging at Messe Düsseldorf. “Ipack-Ima’s partnership with interpack and with the interpack alliance, which has operating bases in the main world markets, will increase the visibility of our show while giving exhibitors and visitors new opportunities to meet and create added value. Companies now need continuous innovation and for this reason Ipack-Ima exhibitors will showcase new technologies at their booths”, commented Ipack-Ima Chairman Riccardo Cavanna.

The focus of the cooperation with the Italian packaging machinery manufacturers’ association, UCIMA, is on its exclusive support of the international packaging and processing exhibitions of interpack alliance in China, India, Iran and Russia. “Through this important ag-

reement, our companies will benefit from a network of exhibitions where they can promote their technologies in key markets for Italian technologies,” said UCIMA’s Chairman Enrico Aureli. “At the same time, our presence will help to strengthen interpack alliance, making its exhibitions increasingly attractive to global professionals”, he added. “The German and Italian packaging machinery manufacturers are the worldwide leaders. Through the cooperation we bundle that power to the benefit of our customers”, agreed Jablonowski.

UCIMA will solicit visitors and also organize the Official Italian Group Participations at the interpack alliance trade fairs in China (swop), India (pacprocess India, food pex India, indiapack), Iran (pacprocess Tehran) and Russia (upakovka) while Honegger Gaspare Srl, the long-term foreign representative of Messe Düsseldorf for Italy, will be in charge of organizing the participations of individual Italian exhibitors.

Messe Düsseldorf GmbH
D 40001 Düsseldorf



BOY's at the Interplas 2017 in Birmingham.

A high-performance six-pack from BOY at Interplas in Birmingham, UK

29th September - 01st October 2020: interplas 2020, Birmingham (GB)

To celebrate its 25th anniversary, BOY's UK distributor BOY Ltd. exhibited no less than six BOY injection moulding machines at Interplas. This also meant BOY had more machines on display at its stand than any other exhibitor at Interplas 2017.

BOY Ltd. presented an interesting cross-section of the BOY product range, including a BOY XXS, BOY 25 E VH overmoulding machine, BOY 55 A PRO, BOY 60 E and two BOY 100 E units.

Alongside these six BOY exhibits, an illustrated history of the machine manufacturer from Neustadt-Ferenthal awaited fair delegates visiting the company's attractive and modern trade fair stand. From its earliest days in 1968 to the ultramodern technology now used by the plastics industry, visitors learned about the many successes and steady growth of the German specialist for injection moulding machines with a clamping force of up to 1,000 kN.

Particular attention was paid to showcasing the latest injection moulding machine, the BOY XXS. Mounted on a rotating platform, the compact table-top machine with 63 kN clamping force was an all-round attraction. With screw diameters of 8 mm to 18 mm, shot volumes of up to 10.2 cm³ can be achieved. Mountable on an (optional) movable undercarriage, the BOY XXS features a highly compact form

factor and is also suitable for continuous operation in many different manufacturing applications.

Coated with an anti-static varnish, the BOY 60 E clean room machine impressed delegates with its compact clean room, which consists of the cantilevered two-platen clamping system, an ionisation box installed above to filter the tool area air, as well as a comprehensive series of stainless steel parts. A space-saving packaging machine is also integrated under the clamping unit, which enables products to be manufactured and packed under clean room conditions. Designed for clean room class ISO 7, the machine is powered by a high-efficiency servomotor pump that generates very little waste heat.

BOY Managing Partner Alfred Schiffer was effusive in his praise of the company's presentation at Interplas in Birmingham. This opinion was unreservedly shared by BOY Ltd. Managing Director Bob Wilson, whose many promising discussions with visitors over the three days of the fair have left him very optimistic about the future of the UK market.

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

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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

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