



Hans J. Michael GmbH



Teva, world market leader in generic medicine and one of the 10 biggest pharmaceutical companies worldwide, has expanded its production facilities in the German town of Blaubeuren-Weiler with a new sterile manufacturing plant. Aiming at an increase of the company's production capacities, io-consultants analysed the existing plans and supported TEVA in expanding its facilities. They were responsible for planning the required pharmaceutical processes, clean media, and the logistics functions and advised Teva on a new IT concept.

Successful start-up of Teva's new nasal spray filling plant



The new plant was directly connected to the already existing sterile manufacturing building, thus creating valuable synergies by using and incorporating the available infrastructure and operations. The building was designed on a modular basis, starting with four sterile manufacturing units that can be extended in the future without interrupting manufacturing processes. The new plant has a production capacity of 30 million bottles of nasal spray per year, doubling the previous volume. Sold in pharmacies all over Germany, the nasal spray is also exported abroad, e.g. to Russia. Furthermore, the plant comprises four packaging lines (1,550 sqm) and an inspection area of 1,300 sqm. These operations and the relating technical equipment span a total area of 16,000 sqm. During the conceptual phase, io-consultants and Teva developed a master plan for the site in Weiler in foresight of possible future expansion plans. The master plan comprised all necessary logistics functions like, for instance, the realisation

of a new goods receiving and dispatch area as well as the construction of a fully automated high bay warehouse.

The project team met the challenge to complete the entire project - from basic design through to the production of the first batch - within 18 months and kept to all the deadlines of the planning partners' time schedule. The entire production line - from preparation to aseptic filling including all the required auxiliary operations and channeling units - was equipped with innovative technology and state-of-the-art machinery. The same applies to the high quality clean rooms.

io-consultants prepared all the planning documents according to EMA and GMP guidelines, taking into account the applicable health and safety regulations.

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Gerresheimer Medical Plastic Systems opens small-scale pilot production in Wackersdorf

Pilot production with large-scale production standards

Prior to large-scale production, pharmaceutical and medical technology applications must undergo complex approval processes, which often require the production of parts such as clinical test samples or stability batches in small volumes. Because of this, Gerresheimer Medical Plastic Systems has now installed its own small-scale pilot production at its Technical Competence Center in Wackersdorf. At this early pre-production stage however, the pilot production already complies with large-scale quality standards; the acquired production intelligence can be applied directly to large-scale production processes at any Gerresheimer facility. Pilot lines allow fast and straightforward part production at any project stage – from laboratory prototype and clinical test samples right through to small-scale production.

Gerresheimer Medical Plastic Systems' new small-scale pilot production has a total of eleven injection molding machines with clamping forces of between 65 t and 420 t, two of which are equipped for two-component injection molding with clamping forces of 120 t and 200 t respectively. Moreover, there are project-specific assembly units such as joining machines, bonding units or ultrasound welding systems. GMS deliberately selected a generous number of machines and equipment, so as to be able to offer a wide variety of solutions and near-series mold sampling. In the initial phase, the pro-

duction area will encompass 420 sqm. It is planned to expand this to a total of 1,400 sqm in 2016. The production area will include an 400 sqm ISO class 8 cleanroom to the DIN EN ISO 14644 standard. Integrated laminar flow hoods create an ISO class 7 cleanroom environment in the injection molding area. A gantry crane inside the cleanroom allows for fast and easy mold changes.

The control of the entire production process including order management, production planning and scheduling, mold service, injection molding/assembly, quality management and freight management



Pilot production in a class 8 cleanroom to DIN EN ISO 14644 standard at the Technical Competence Center in Wackersdorf.

complies with the standards of large-scale production processes. A Management Execution System (MES) guarantees efficient, fast and cost-efficient production processes. Automated quality checks are integrated into the production process, while an end-to-end tracking system for individual sub-assemblies or batches ensures that all products comply with the required quality standards for pharmaceutical and medical technology products.

Gerresheimer AG
D 40468 Düsseldorf



Integrated laminar flow hoods create an ISO class 7 cleanroom environment in the injection molding area.

TechnoPharm, Europe's leading trade show for sterile processing technology for pharmaceuticals, food and cosmetics, will take place in Nuremberg from 30 September till 2 October 2014. This year's supporting programme offers a lot of special features.

Highlights of TechnoPharm Supporting Programme

**30th Sept. - 02nd Oct. 2014:
TechnoPharm 2014, Nuremberg (D)**

"The programme is being coordinated by the APV (International Association for Pharmaceutical Technology), which is also supporting the trade show as an honorary sponsor," reports Willy Viethen, Exhibitions Director at NürnbergMesse. "In over 60 presentations, renowned industry experts will inform delegates about the status quo of technology, from sterile processes to packaging."

TechnoPharm forum

This is where pharmaceutical production specialists discuss the latest developments in their field. Highlights include a forum on serialisation obligations for pharmaceutical manufacturers, a presentation series by the German Packaging Institute, a presentation on orodispersible medications and a case study on hot-melt extrusion by BASF SE.

Forum: Focus cleanroom

This year too there will be an expert forum featuring special presentations on the planning, construction and operation of cleanrooms to meet GMP standards. Other featured highlights are a talk by Boehringer Ingelheim comparing RABS (Restricted Access Barrier System) and isolators and pre-

sentations on the latest regulatory requirements for cleanrooms.

Forum: Serialisation obligations for pharmaceutical manufacturers

The countdown has begun: from 2017 all pharmaceutical manufacturers are obliged to provide both a unique identifier and a tamper-evident seal on the outer packages of prescription-only medicines. This presentation series on the first day of the trade show is organised by technical publisher Hüthig Verlag and provides operators with the necessary information to effectively implement the directive.

Forum: Safe handling of solids

Often the sensitive bulk solids that are used in the pharmaceutical, food and cosmetics industry require careful handling and have to be transported from A to B carefully and without segregation. The forum organised by trade journal publisher Konradin Verlag for the first day of the show provides a comprehensive overview of the technologies currently available.

Special explosion protection forum

An entire afternoon is devoted to efficient explosion protection. It includes presentations on fire and explosion protection followed by a panel discussion and an exclusive guided tour

by journal publisher Vereinigte Fachverlage. The live explosions in the exhibition centre parklands are also well worth a look.

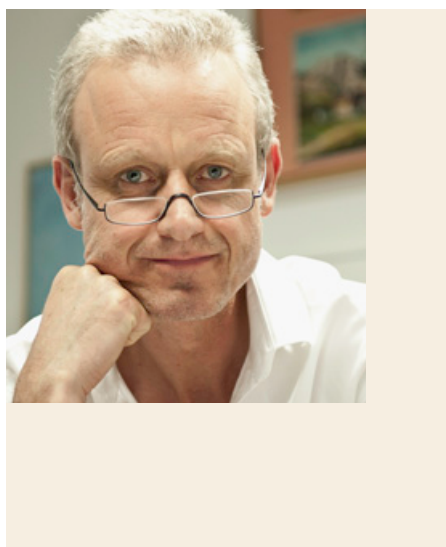
Innovation Award 2014

For the seventh time in succession, Vogel Business Media is presenting its Innovation Award. On the evening of the first day of the show the award will go to the most innovative equipment and processes and will include the categories filling and packaging technology and pharmaceutical and cleanroom technology. The second day of the show will see the premiere of 90-minute tours during which the winners and those reaching the shortlist will present their products.

About TechnoPharm

Around 250 exhibitors from 15 countries will present a wide range of sterile processing technology for pharmaceuticals, food and cosmetics in Nuremberg from 30 September to 2 October 2014. At the parallel POWTECH exhibition, another 700 exhibitors will showcase the world's largest range of processing technology, analysis and handling of powder and bulk materials, including variants adapted to the stringent pharmaceutical and hygiene requirements of the life sciences industry.

NürnbergMesse GmbH
D 90471 Nürnberg



Dear readers, dear subscribers,

June was a very interesting month with a lot of informative and inspiring events: two of them took place in Stuttgart: the LOUNGE 2014 and the parts2clean. And companies told us a lot about new procedures, services and products.

So the number of subscribers to the German and the international newsletter is growing constantly. We hope we can give you with this information a good help for your daily work and your planning tasks.

Yours sincerely

Reinhold Schuster



NEW

If you click at this sign in the pdf-document you will easily get more information in the internet

Technical cleanliness – Trendspot at the AUTOMATICA 2014 - Continuous prevention, reduction and removal of dirt particles in assembly processes

Technically clean if you please

Technical cleanliness is no trend. It is essential in the production and assembly of ever more complex products with increasing quality requirements. Components and units whose function can be impaired by dirt must be produced and assembled in a technically clean environment. It is for this reason that the renowned screwdriving technology specialists DEPRAG SCHULZ GMBH u. CO. have placed great emphasis on the realisation of technical cleanliness in assembly processes using standardised solutions as shown at the AUTOMATICA this year from the 3rd to the 6th of June in Munich. In Hall A6, at exhibition stand 310 the company demonstrated varied detailed solutions focusing on technical cleanliness in screw assembly.

“For all the innovative individual solutions which we presented at the trade fair, the complete assembly process should always be considered”, explained Jürgen Hierold, Sales Manager at DEPRAG. The approach towards technical cleanliness relates to all areas, beginning with the design and production of components, training of personnel, layout of production environment, the assembly and entire logistical processes. But the discussion into technical cleanliness really comes to the fore in the selection of suitable assembly equipment for joining technology. “The technology and components used in the realisation of technical cleanliness must be available at a competitive price. Technical cleanliness should be achievable without massive extra costs and individual components must be compatible with each other”, added Jürgen Hierold. This is one challenge which the screw automation company DEPRAG has mastered by implementing their CleanFeed concept. Diverse standard components have been developed, incorporating decades of processing knowledge, which all have one aim: the prevention of abrasion during feeding of fasteners and the systematic suction of dirt particles within the screwdriving process.

But what is the best course of action? First the cleanliness requirements for the product should be precisely defined. Only in cooperation with the quality management, production and logistics teams will there be the best possible chance to achieve technical cleanliness and therefore reliability. Well-trained staff are equally as important as a clean production environment. It is imperative to keep the cleanroom meticulously pristine. This relates above all to people,

material or transport that bring in damaging particles.

Screwdriving tools and feeding technology for the cleanroom

Suitability for use in a cleanroom must be considered starting with the screwdriving tool. Even insertion of a bit into the screw's drive head can generate undesired abrasive particles. DEPRAG screwdrivers from the series MINIMAT®-EC-Servo reduce speed as the screwdriver makes contact with the bit. Inbuilt sensors recognise the exact screw position and ensure the correct contact point of the bit with the screw head. Only once contact has been established does the speed increase thereby minimising abrasion. Any remaining residual particles are suctioned off by a vacuum device.

Covering and screwdriving templates on the components also reduce the risk of the collection of particles. “All our screwdriving function modules can be used for under-floor screw assembly due to their small size. Therefore gravity can be useful in reducing particles and enabling technically clean assembly”, explained Jürgen Hierold. Additional equipment such as dirt deflectors collect fallen particles for simple removal.

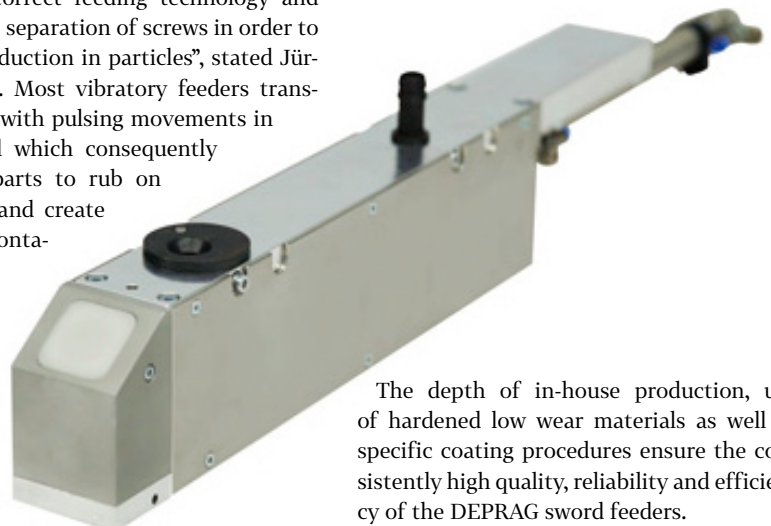
The use of ESD-enabled materials can also reduce dirt from static load. Jürgen Hierold: “Our CleanFeed complete package comprises all options for particle minimisation”.

However particles do not only appear during the screw assembly procedures, feeding the connection elements can also cause friction. “Therefore it is very important to select the correct feeding technology and consider the separation of screws in order to achieve a reduction in particles”, stated Jürgen Hierold. Most vibratory feeders transport screws with pulsing movements in a feed bowl which consequently cause the parts to rub on each other and create abrasive contaminants.



Sword feeders offer a more component friendly, low abrasion realisation of technical cleanliness. The feed parts in the container are moved using a stroke action into an adapted segment shaped sword. They slide along mechanical rails using gravity and reach the screw separator already sorted. Incorrectly positioned fasteners are returned to the container along mechanical rails. A sensor in the supply rail regulates the amount of stroke movement required. If fewer parts are being used by the operator then the feeder will supply fewer parts.

The DEPRAG sword feeders are available in two sizes with 0.15 l or 1.5 l fill volumes.



The depth of in-house production, use of hardened low wear materials as well as specific coating procedures ensure the consistently high quality, reliability and efficiency of the DEPRAG sword feeders.

Technically clean if you please

Particle killers guarantee clean feeding

If the screw is directly fed via the screwdriver to the component then contamination from falling particles cannot be discounted. The DEPRAG particle killer ensures clean and safe feeding: If the required screw is shot in for the next screw assembly with a blast of air then potentially discharged dirt particles can be sucked out using a vacuum device. The suctioned out particles are then caught in a filter with transparent window and exchangeable filter element. Next the cleaned fasteners are fed into the screwdriving module (inline version) or positioned

ready to be picked (Pick&Place version). "Such vacuum devices increase cleanliness and are to be recommended for all relevant abrasive positions", explained Hierold.

It is essential to select a system manufacturer who can provide all core components from their own development and production for cleanroom installations. Partnership with DEPRAG SCHULZ GMBH u. CO. guarantees the best possible harmonisation of individual components and processes such as feeding, positioning and screwdriving. DEPRAG is to be highly recommended as a one-stop shop for comprehensive solutions in the implementation of technical cleanliness.

DEPRAG SCHULZ GMBH u. CO. D 92224 Amberg



Optimised contamination safeguards and improved comfort

CleanVision – the innovative one-piece clean room suit with integrated visor



Source: Rentokil Initial©

With CleanVision, Initial Cleanrooms has developed an innovative one-piece clean room suit for use in the pharmaceutical industry. The unique jumpsuit with integrated hood and replaceable visor will be on the market from summer 2014. Unlike conventional solutions, the suit is virtually sealed, significantly reducing the risk of contamination in clean rooms. Safety is also boosted by the low number of contact points with the outside of the suit. CleanVision can be supplied in sterile packing and specially folded so that only the inside of the one-piece suit is handled when dressing. This not only improves contamination safeguards, but also

makes the dressing process much simpler. The continuous zip on the inside legs allows the wearer to keep both feet on the ground when putting on and taking off the suit, lowering the amount of contact required. It is demonstrably quicker to put on than previous clean room suits (by more than two minutes) because only the shoes and gloves must be donned separately.

CleanVision combines the greatest possible cleanliness with maximum comfort. The jumpsuit with integrated visor replaces the outdated clean room glasses worn with conventional suits. The adjustable hood offers a wide field of vision and enables users to



wear glasses. The replaceable and disposable visor ensures optimal vision at all times when working in clean rooms. "Together with expert partners, we have invested almost three years in developing the patented clean room suit and will use CleanVision to expand our position as a market and technological leader", explains Nicola Cassanelli, General Manager at Initial Cleanrooms Europe. Initial Cleanrooms offers a leasing service for the innovative clean room suit, allowing customers to avoid high investment costs and write off the leasing rates over a three-year period. The clothing concept will be tailored to each customer individually. If required, CleanVision can be delivered straight to the changing room in suitable clean room packaging (airtight or vacuum-packed). The clean room suit is available in white and light blue as standard.

Initial Textil Service GmbH & Co. KG
D 50739 Köln

Leica returns to its roots in its brand new headquarters in Wetzlar

A new complex, showroom, factory and iconic site

It is both a beginning and a return. With the inauguration of its new and larger corporate headquarters, Leica Camera AG is returning to its roots. Wetzlar, in the German state of Hesse, is the birthplace of the Leica camera and the home of Ernst Leitz, the company that went on to become Leica Camera AG. This is where, 100 years ago, Oskar Barnack invented and constructed the first still-picture camera for 35 mm cine film with a negative format of 24 × 36 mm and laid the foundation stone for the commercial success of the Leica 35 mm camera – an innovation that irrevocably changed the world of photography and paved the way for countless classic, spectacular, historic and earth-shattering photographs.

This year, the company will not only be celebrating the official opening of the new complex, but also ‘100 years of Leica photography’. Leica has therefore invited numerous photographers, customers and other guests to come to Wetzlar to celebrate both occasions. In the words of Dr Andreas Kaufmann, chairman of the Supervisory Board and majority shareholder at Leica Camera AG: ‘No other brand has so crucially shaped and influenced the past 100 years of photography like Leica has – by continuing to provide photographers with the best tool and superb lenses to match. The Leitz Camera set out from Wetzlar to conquer the world. Now that Leica Camera AG is returning to its birthplace, we are underlining the immense importance the city possesses for the entire optical industry segment in Germany. Leica Camera AG is returning to Wetzlar, to a new home that is open to visitors and photography enthusiasts and offers them a unique experience with valuable insights into the past, present and future of photography.’

Tradition and modernity, the past and the future, quality and perfection, not to mention intense concentration on the essence – all these are reflected in the new company complex. It marks a new beginning and simultaneously pays homage to the roots of Leica. It transforms the brand and its presence into a tangible experience and thus creates a future-oriented context for the entire world of Leica.

The plans prepared by the architects, gruber + kleine-kraneburg, have been realised in the construction of an ultra-modern, new complex with a ground plan area of around 27,000 square metres, for the production, administration and customer care divisions of Leica Camera AG and the Leica



Akademie. Built to state-of-the-art energy efficiency standards, the new complex accommodates Leica's around 700 employees in Wetzlar. Openly visible production areas, a Leica experience zone, a Leica Galerie, a store, a photo studio, a restaurant and a coffee house offer a wide range of attractions for visitors, Leica enthusiasts and anyone fascinated by photography. A central plaza creates a binding element between the new headquarters of Leica Camera AG and the facilities occupied by Weller Feintechnik GmbH and ViaOptic GmbH on the Leitz-Park site. The overall investment volume for the new Leitz-Park complex ran to 60 million euros.

As this fresh start simultaneously celebrates the location, the camera and the centennial, Leica Camera AG decided to also express this in architectural terms – with an ensemble that characterises and reflects the identity of the brand. Alfred Schopf, chairman of the Executive Board at Leica, explains: ‘It was our intention to create not only a place where our cameras, lenses and sport optics products are made, but also a place that visibly expresses the values of our brand. The Leitz-Park celebrates the Leica legend in many ways – be it in exhibitions of photography, the Leica experience or in a look behind the scenes of the production process. We expect to see ten thousands of visitors every year, many of them from abroad – after all, Frankfurt airport is only 60 kilometres from here.’

Alfred Schopf particularly emphasises the energy efficiency concept and the expansion of the production facilities at the com-

plex. ‘With geothermal energy collectors under the car park and upgradable photovoltaic elements on the roofs, the complex is able to cover a large proportion of its energy needs from sustainable sources,’ explains the chairman of the Executive Board. ‘The production and administrative buildings are built to the latest environmental and energy efficiency standards and will allow us to rapidly satisfy the enormous demand for Leica products in a timely fashion. Our colleagues will enjoy a modern and attractive working environment that motivates, promotes creativity and enables us to provide Leica's familiar technical perfection, satisfying the most stringent quality demands. The new headquarters development is a further milestone in the history of our company that benefits not only us, but also our customers and visitors.’

In the Leica experience zone, visitors can discover everything about the past and present of the company and the manufacture of optical products made in Germany. Three windows allow guests to see what goes on in the clean rooms in which the lens elements, complete lenses and cameras are made. Individual window panes are set up as touch-screen panels and let visitors interactively access films, photos and detailed information simply by swiping and touching, as on the screen of a smartphone or tablet PC. The top priority in the Leica Store is personalised service. At the same time, customers visiting the Wetzlar Store also have the opportunity to purchase Leica products during their visit.

Leica Camera AG
D 35578 Wetzlar

The entire industry represented

fiP solution plastique 2014 grows by 20%

The two-digit growth of this year's plastics event in France proves that its three-yearly frequency makes it a long awaited event. 700 exhibitors will be present at Lyon Eurexpo this year which is 20% more exhibitors and surface area than in 2011.

fiP solution plastique will have a third exhibition hall this year to showcase this genuine „pool“ of expertise in plastics, composites, and rubber.

20% increase in the number of exhibitors - 3 halls will now be used

There has been a sharp increase in the number of exhibitors for this year's fiP solution plastique: 700 companies, which is an increase of nearly 20%, will be present from 17 to 20 June at Lyon Eurexpo. 3 halls are now reserved to offer contractors and industry professionals innovative technical solutions for their projects.

Plastics, composites, rubber, machinery, and equipment, including moulds and tooling and all related services, as well as outsourcing which showcased by fiP'project: design offices, component design, processing, finishing / decoration... the entire sector will be represented.

Injection, extrusion, blow moulding, rotational moulding, thermoforming... visitors will be able to view all processing techniques for a



better understanding of current technologies and industrial processes once again this year. The large number of machines in operation and the extended range of skills presented will give visitors the impression of being in a huge factory creating a concrete and comprehensive snapshot of the profession.

Omnipresent innovation

Because innovation is strategic in this highly competitive market, it will be omnipresent at fiP solution plastique:

- „INNOVATION FORUM“ to discover new products and services through short oral presentations;
- „Techno Lab“ to learn about processing techniques:

- Conferences and workshops focusing on new processes, materials, uses and areas of research.
- And, of course, all of the latest technologies and processes on exhibitor stands.

You can find a preview of a few of these new features in the „Trade fair Essentials Book“ with the link: <http://we.tl/EgIVaW-w6KJ>.

fiP solution plastique offers all of these major pluses to professionals from all sectors to provide them with practical solutions for their projects as well as tools to help them increase productivity and competitiveness.

IDICE MC

Visitor number „cracks“ the 175,000 mark

Sensational Atmosphere at interpack 2014

interpack 2014 was characterised by an outstanding atmosphere prevailing amongst the approx. 2,700 exhibitors and 175,000 visitors in the 19 halls of the completely booked Düsseldorf Exhibition Centre. The signs for this were already apparent at a very early stage of the world's most important trade fair for the packaging sector and its associated process industries.

The exhibitors at interpack 2014 met with numerous high-ranking visitors from all over the world already from the start of the trade fair. Many companies experienced such a rush that their stands reached their capacity limits several times. Visitor interest and qualification as well as their willingness to invest is said to have been clearly higher yet again than at the already excellent previous event. A great many exhibitors rated the concrete business deals and sales concluded – part of which were absolutely spontaneous – as particularly positive.

Commenting on this, Friedbert Klefenz, President of the interpack Exhibitors' Advisory Board 2014 and President of Bosch

Packaging Technology, said: “We are very satisfied with the quantity and quality of visitors at our stand. The interest taken in our technologies that make a vital contribution to global health and nutrition was enormous. We are pleased with the high number of leads produced, including many top executives and potential new customers. Similar comments came from other exhibitors. We were equally thrilled by the high number of international visitors and exhibitors – some 75% of the exhibiting enterprises were headquartered outside Germany. With this interpack has confirmed its reputation as the world's leading trade fair for the packaging sector.”

“interpack has provided impressive proof of its leading international role yet again this year. This success confirms our fundamental philosophy of addressing the international industries in their respective markets in a very targeted manner – already in the run-up to the event thereby bringing them to their most important event in Düsseldorf every three years”, explained Werner Matthias Dornscheidt, President & CEO of Messe Düsseldorf.

Boasting a percentage of foreign visitors of as much as 66%, interpack 2014 has not only set a new record for itself but also a top rating across all Messe Düsseldorf events. Visitors from 120 nations in total travelled

Sensational Atmosphere at interpack 2014

to Düsseldorf.

The dominating themes at interpack 2014 were resource efficiency for plant and machinery as well as for packaging material usage, quality and safety to guarantee perfect and counterfeit-proof finished products – especially in such touchy segments as Food/Beverage and Pharmaceuticals – as well as diversity and flexibility for an ever wider range and shorter product cycles. These themes were addressed by a particularly high number of innovations in the halls.

However, interpack underscores its importance not only with the sheer multitude of innovations and breadth of its exhibitor ranges but also with especially innovative themes, adds Bernd Jablonowski, Director of interpack & SAVE FOOD: “For a leading international trade fair it is not enough just to rent out exhibition space and offer perfect organisation. Trend themes must be identified, anchored in the concept and finally also driven in a consistent manner. This is the only way to secure thematic leadership in an industry. We have succeeded in doing this very well once again this year. The con-

cepts of both Innovationparc Packaging and the METAL PACKAGING PLAZA were right on target with the target groups.”

Successful second SAVE FOOD Congress

SAVE FOOD proved a particularly attention-grabbing theme at interpack. The initiative of the same name combats food losses and waste and involves such partners as the Food and Agriculture Organisation of United Nations (FAO) and the United Nations Environmental Programme (UNEP) as well as over 110 members from the industry. The SAVE FOOD Congress already started the day before the trade fair. On the first of its two themed days it addressed non-profit organisations, which shed some light on the problems from political and social angles. The second half of the event dealt with solutions and Best Practice presented by enterprises. Even more impressively than at the kick-off event three years ago the Congress showed how the problem of global food losses and waste can be fought across the entire value chain.

Contributions came from prominent guests and participants such as FAO and UNEP representatives, the Senegalese Minister and musician Youssou N'Dour and the former German Federal Minister Renate Künast in addition to the numerous lectures and panel discussions that identified practical approaches. In excess of a total of 450 delegates participated in the Congress. When the event drew to a close all parties involved agreed that the objectives of SAVE FOOD can only be achieved with concerted action and pooled expertise as well as the competence of all stakeholders – a fundamental intention of the Initiative. For the entire duration of interpack 2014 Innovationparc Packaging presented solutions and ideas for fighting food losses and waste.

In spring 2017 the motto for experts from throughout the world will once again read “Welcome Home” to Düsseldorf. The exact dates will be announced at a later stage.

Messe Düsseldorf GmbH
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With 1288 exhibitors, Fakuma 2014 is entirely booked out

23rd Fakuma Presents Products and Solutions from 32 Industrial Nations

14th Oct. - 18th Oct. 2014: Fakuma Friedrichshafen (D)

The Fakuma international trade fair for plastics processing is running at full bore for its 23rd edition! The industry highlight of the year 2014 will not only more than likely be distinguished once again by record-breaking exhibitor numbers – currently 1288 manufacturers and distributors – but rather by high levels of internationalism as well with regard to hardware and software offerings for industrial plastics processing.

The multitudinous participants come from 32 industrial nations and will occupy more floor space than ever, which in turn will result in fully booked out exhibition halls at the Friedrichshafen Exhibition Centre on Lake Constance. Relative to the global market and based on the technological and commercial market leadership of German companies, Germany will be represented at the event with an impressive 675 exhibitors,

followed by Italy with 72 manufacturers and distributors and Switzerland with 66 companies. Austria, China and the Netherlands place 4th, 5th and 6th with 27, 24 and 22 companies respectively.

As has also been the case in the past, there's no lack of technological innovations in the field of plastics in 2014. This is made plainly apparent by trends such as energy and material-saving production and processing of plastics, expanding use of composite materials, improved precision injection moulding of components used in micro-technology and medical engineering, advancing functions integration despite miniaturisation and components/modules with ever thinner walls, new applications for rotation moulding technology like the thermoforming process, and last but not least 3D printing.

Beyond this, Fakuma is also benefiting from a sizable influx of suppliers who cover the entire process sequence, “from product development through rapid prototyping

and tool making, right on up to series production”, now that a sort of twilight of the gods is slowly but surely becoming evident in this area in the trade fair landscape. Whereas some are feeling a great deal of pressure, supposedly new trade fair platforms are lining up on the other hand which, for whatever reason, are focused to a much greater extent on model, mould and tool making, and are hankering after the associated machining equipment.

This has little to do with the current thematic alignment of the Fakuma international trade fair for plastics processing – especially in light of the fact that Fakuma is strictly aligned to worldwide and European decision-making experts. In contrast to this, the new trade fairs for model, mould and tool making, along with the associated manufacturing equipment, have a more regional orientation and will first have to prove their stability in a highly competitive market.

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

Compact manufacturing cells, fast mould changes and flexible process integration: Engel's appearance at the 2014 FIP exhibition, which takes place from 17th to 20th June in Lyon, will be focusing on tie-bar-less technology, now in its 25th year. Using a highly innovative application from the medical technology industry, the company will be demonstrating how tie-bar-less clamping units can increase production efficiency significantly. Other highlights at Engel's stand in hall 6.2 include its all-electric high-performance machines, the new CC300 control unit generation and the Engel plus service program.

Engel at FIP 2014 in Lyon

Three-component hollow bodies in one step

Engel will be setting a new trend in the manufacture of three-component hollow bodies with inlays at FIP 2014. The injection moulding machine builder will be producing drip chambers for blood transfusions with an integrated filter at its trade show stand. To do so, a tie-bar-less Engel e-victory 160 combi hybrid machine designed for a clean room will be used with an integrated Engel easix multi-axis robot. As Philippe Sterna, Managing Director of Engel France, points out: „This application really is made for tie-bar-less technology. Since the mould fixing platens can be utilised right up to the edge, the mechanically demanding multi-component mould with an index plate is able to fit on a relatively small injection moulding machine with a clamping force of 1,600 kN. In addition, the barrier-free clamping unit facilitates automation. The result is a very compact manufacturing cell that combines outstanding performance with minimal operating costs.“

The upper part of the drip chambers will be made from polystyrene, while the lower part will be polypropylene. The two parts will be injection moulded simultaneously. The filter will then be mounted straight away in the same mould and joined by means of overmoulding with another PP. The cycle time for the entire process will be just 12 seconds.

Engel developed this new production process in conjunction with its mould production partner Hack Formenbau. One key prerequisite for realising such a high degree of integration is the servo-electric drive technology for all movements of the index plate mould; this enables the synchronous control of mutually independent movements. The high-precision platen parallelism setting on the tie-bar-less hybrid machine provides a high level of mould protection. Philippe Sterna states: „We expect this one-shot process to revolutionise the manufacture of hollow bodies – and not just in the medical technology industry. We see great potential in the automotive industry as well. For example, it could be used for the manufacture of fuel filters.“

All-electric for maximum performance

Engel will be addressing packaging manufacturers with a second exhibit in Lyon.

Thin-walled airline cups will be produced of polystyrene on an Engel e-motion 160 in a four-cavity mould made by Glaroform. Cycle times of under three seconds will be achieved.

Thanks to the ongoing development of the Engel e-motion series, these all-electric machines are becoming increasingly well-known in the area of high-performance applications in the packaging industry. The newest machine generation is able to achieve cycle times of well under three seconds and injection speeds of more than 500 mm per second, thereby combining maximum performance with maximum energy efficiency. The closed system for toggle lever and spindle always guarantees optimal, clean lubrication of all moving machine components. This means that even in regulated production areas, such as the production of food packaging, the Engel e-motion is the preferred type of machine.

Reliable control of even complex processes

Process integration and automation are crucial to increasing efficiency in injection moulding production. At the same time, however, they make the manufacturing processes more and more complex. Making the operation of highly integrated and automated production processes easier, more comfortable and safer was therefore Engel's goal when developing the new control unit generation CC300, which will be presented in France for the first time at FIP 2014. The new features include the extra-large 21" multitouch display with a new and clearer structure, separate views for each task, which eliminate operator errors in full-feature scope, and the central control button e-move that gives the operator a feel for the machine in spite of the multitouch functionality. By turning, e-move can precisely control the speed and path of all machine and robot movements.

To help machine operators feel at home with the new control unit, several effective basic principles found in the previous model have been retained. In addition, user technologies that have since become standard were transferred to the demands of the injection moulding processes – for example, the intuitive gesture controls found in smartphones.

„The control unit of the manufacturing



Process integration at its best: ENGEL will be producing drip chambers for blood transfusions with an integrated filter in just one step at its stand. (Photo: Engel)

cell has long been an important factor in efficiency," Mr Sterna stresses. „With the new CC300 we can help our customers to harness the full potential of integrated system solutions and increase process reliability at the same time.“

Maximum productivity and efficiency throughout the life cycle

Engel plus is the new brand name for all of Engel's service products. There will be a separate area devoted to it at the company's FIP 2014 stand. Among other things, this area will highlight the Engel flomo, which continuously monitors all cooling and temperature control circuits electronically, thereby making high-maintenance cooling water batteries with sight glasses unnecessary. Thanks to its vortex sensors, the temperature control water manifold does not need any moving parts or water filters. In addition, all the components are made of premium stainless steel. The Engel flomo is one of the market's smallest manually adjustable water distribution devices with electronic monitoring. It can be mounted in very close proximity to the mould, which minimises heat loss.

Training and service are fixed components of the Engel system philosophy all over the world. In keeping with this, the company's sales and service subsidiary in Wissous near Paris is also equipped with its own training centre, which is the venue for regular customer training sessions, workshops and conferences. The subsidiary was established in 1978. In 1998, Engel opened an additional sales office in Lyon.

ENGEL AUSTRIA GmbH
A 4311 Schwertberg

Technology fireworks at Ferromatik Milacron



Impressions from the Open House

Ferromatik Milacron's Open House at the company's Kaiserstuhl factory premises ended with a record 1,200 visitors and guests. Frequently heard comments such as „we're deeply impressed by the technological competence, skill and dynamism of the new Ferromatik“ filled Managing Director Gerold Schley with pride. And it was not only the many items on display which were new – the whole outside plant shined in renewed splendor.

A major order on the first day of the Open House involving 63 machines with 3,500 kN clamping force of the all-electric ELEKTRON series gave the sales team an extra uplifting adrenalin boost.

A total of 14 injection moulding machines, many of these operating as fully automated production cells, were seen in action. Conveying, printing, removing, stacking and packing – every step of the automation was shown live. These application-driven system solutions impressively underscored Ferromatik Milacron's technological expertise as a full-range system supplier.

One of the highlights on display was the new hybrid large machine F 580 with 5,800 kN clamping force. The innovative concept of the large Ferromatik Milacron F machine met with plenty of interest and praise from among the guests. With this display item, a new era of large machines of the F Series has begun at Ferromatik Milacron. As the general trend goes toward ever bigger injection moulding machines, Ferromatik Milacron has plans for more models with even higher clamping force, with the first machine with 6,500 kN expected to be ready this year.

A world first shown to the guests was the K-TEC 200 CUBE. Using a cube mould

constructed by FOBOHA (Germany), the production of PRE Forms with MuCell® technology was shown for the first time. The foamed core component generates a metallic effect after blow moulding without the need for added metallic pigments. This new oPTI process has been developed by Plastics Technology Inc. (PTI). Working with FOBOHA (Germany) and Ferromatik Milacron, PTI will now intensify the international marketing of this revolutionary system.

Another of Ferromatik Milacron's domain are electrical injection moulding machines for applications in medical. High

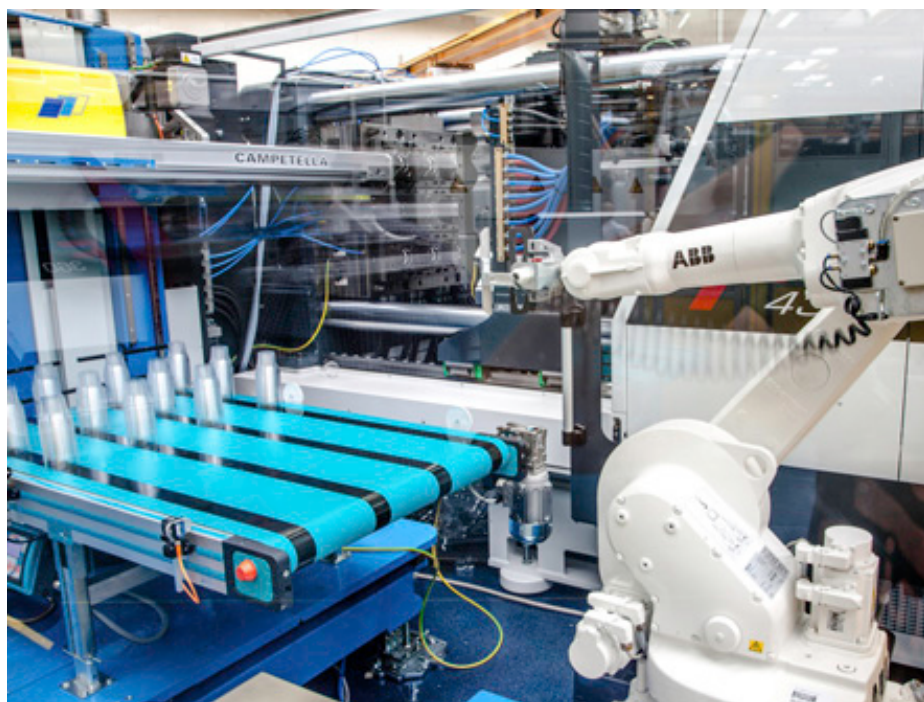
precision, silent running, dynamic properties and low energy costs are the outstanding features of the whole range of all-electric injection moulding machines made by Ferromatik Milacron.

With their clean room capability, the all-electric machines of the F Series are ideal for use in medical engineering. Fitted with extra medical equipment, the machines meet every requirement under hygiene aspects. These include, for example, covered guide rails, smooth varnish and stainless steel covers in the mould cavity as well as FDA-conforming lubricants and nickel-plated cavity plates. Machines of the F Series are also available from Ferromatik Milacron with GMP documentation.

The affiliated companies of the Milacron Group also used this Open House to present their products, among these DME, Mold-Masters, Kortec, Cimcool, Uniloy Milacron and Cincinnati Milacron Extrusion Systems.

Cincinnati Milacron Extrusion Systems showed on a twin-screw extruder type TP 75-26 the production of WPC decking boards. Uniloy Milacron presented its new all-electric injection blow moulding machine UMIB 100 with 1,000 kN clamping force. The exhibition was rounded off with many technical papers on a wide variety of different subjects about injection moulding, presented by people from Ferromatik Milacron and the 35 partner exhibitors.

Ferromatik Milacron GmbH
D 79364 Malterdingen



Impressions from the Open House

New intelligent valve from Bürkert reduces pipework by switching multiple flows

The ideal valve for use in a hygienic processing environment is easy to clean using CIP, contains a low internal volume and a minimum number of connections as well as offer super precise flow control abilities.

These exact criteria were used to design the revolutionary Robolux valve from Bürkert, which, now compatible with its ELEMENT control heads offers a cost saving, space saving, intelligent field device which is ideally suited for use in pharmaceutical, chemical, food and beverage processing applications.

Hygienic processing places high demands on the reliability and cleanability of production facilities. Common challenges such as corrosion in pipe systems, valve manifolds and tank installations in different pharmaceutical, chemical and biotech facilities for example can be reduced, thereby reducing costs and improving plant availability - by using multiport valves and multiport-based manifolds. Multiport solutions such as the Robolux valve were developed with exactly this type of high-purity installation in mind.

Reduced installation space

The stand-out feature of the patented Robolux valve design is that two independent process switching functions can be achieved with one membrane. This reduces the installation space requirement, eliminates T-adapters and minimises the overall number of valves and membranes required. The multi-port membrane valves were designed for high-purity installations and make it possible to design complex systems that are considerably more compact than those using conventional fluid control valves.

The design is also intended to minimise the internal volume and produce no dead flow zones, which results in a number of advantages: In addition to improved flow and evacuation properties, both cleaning and changeover of the interfaces for the manufacture of other products is easier and faster, with less wastage of expensive chemicals and ingredients.

This technology makes it possible to replace two traditional shut-off diaphragm valves and at the same time eliminate all dead legs and one tee-piece with one single valve. When combined with reduced installation and commissioning costs, the Robolux valve delivers a number of crucial advantages to process control within hygienic applications.

Unique testing ability

Bürkert is able to test cleaning cycles and provide 100% reliability on the flow properties and cleanability of the complete valve by using a riboflavin test rig. As part of a factory acceptance test, Bürkert is currently the only manufacturer of fittings and valve interfaces in the world that owns and operates such a test rig. In hygienic applica-

tions where CIP / SIP are operated, it is essential to be able to ensure the cleaning cycle is both effective and efficient; a criterion which can be completely fulfilled and demonstrated by Bürkert.

Intelligent field device

As part of the concept to decentralise valve control systems, the Robolux valve can now be combined with Bürkert's ELEMENT control head to provide a complete process solution which is compatible with the entire valve product range. The valves at field level can be equipped with all the required automation components including pilot valves, electrical feedback units and optical status indicators. By integrating an AS interface as a field bus interface, the entire range of advantages of this approach can be fully utilised. All that is required for power supply, feedback and communication is a two-wire line connecting the PLC with up to 62 valves.

Decentralised control

The new decentralized automation concept can provide a viable and extremely compact alternative to the use of central switching cabinets by integrating all the required automation functions in the control heads themselves. This provides considerable savings in installation costs and also provides commissioning and maintenance engineers with an instant indication of the status of each valve, which reduces the amount of time required for installation and trouble-shooting.

Operational feedback

Using the control head as a central unit for the control of the hygienic process valves, enables it to perform all pneumatic actuation, feedback and diagnostic functions, as well as bus communication. A three-colour optical status display with high-power LEDs, which is integrated in the control head, provides for a visual overview of the valve status at the field level. In addition to electrical feedback to the master controller, it also signals the current switching position of the

process valve, facilitating diagnosis and maintenance within the system itself.

Due to the compatibility of the IP67 ELEMENT control head with a wide range of process control valves from Bürkert and many other manufacturers, greater plant standardisation can be achieved by equipping process system with components from the ELEMENT platform.



Bürkert Fluid Control Systems
D 74653 Ingelfingen

CeMAT underscores status as world's leading intralogistics trade fair

CeMAT 2014: more international participation, more leads, more investment

Boasting a clear increase in the rate of international participation and showcasing more than 4,000 innovations from 1,025 exhibiting firms (58 percent of them from outside Germany), CeMAT drew to a successful close on 23rd May 2014. Dr. Andreas Gruchow, member of the managing board at Deutsche Messe in charge of CeMAT, said, "Staged under the slogan of 'Smart - Integrated - Efficient', this year's CeMAT demonstrated that high-tech logistics is essential for virtually any business which wants to remain viable and competitive. CeMAT's status as the world's flagship intralogistics fair was impressively underscored by live displays of complete logistics solutions and products in our halls and on the open-air site. Exhibitors came to Hannover with high expectations for generating international leads, and those expectations were met. CeMAT represents a booming industrial sector and this year yielded 1.7 million business leads. That is a significant increase compared to 2011. Our exhibitors are very satisfied and have closed deals worth millions of euros."

Drawing some 53,000 visitors from 65 nations, this year's CeMAT made a perfect three-point landing: 33 percent of attendees came from abroad, with Europe taking a 70 percent share, followed by Asia with 13 percent, the Americas with 9 percent, Africa with 5 percent and Australia with 3 percent. The top 15 visitor nations were the Netherlands, the United Kingdom, Poland, the Czech Republic, Italy, Austria, France, the United States, Belgium, Spain, Switzerland, Sweden, Russia, South Africa, and China. There was a strong increase in attendance from the United Kingdom, Poland, the United States and Russia. Compared with the 2011 event, this year's CeMAT attracted twice as many exhibitors and visitors from the U.S., one of the world's leading intralogistics nations. "Impressive attendance figures for Russia and Brazil clearly demonstrate that our CeMAT events abroad, in this case CeMAT RUSSIA and CeMAT SOUTH AMERICA, had a positive influence on attendance here at CeMAT in Hannover," added Gruchow.

Eighty percent of visitors were decision-makers with purchasing authority who traveled to Hannover with concrete projects and investment plans. Visitors from abroad represented approximately twice the investment potential of their German counterparts. Almost one out of every two visitors

came from top management echelons. "I estimate that orders worth more than ten billion euros were initiated here - a new CeMAT record," said Gruchow.

Sascha Schmel, President of the Materials Handling and Logistics Systems Sector Association within the German Engineering Federation (VDMA), remarked, "Internationalization is one of the key drivers of the intralogistics industry, particularly here in Germany. Our intralogistics suppliers have a world export share of 19 percent, almost 5 percent higher than China, and over 8 percent more than the United States. In 2013, Germany posted total export earnings of around 13 billion euros for intralogistics." Schmel sized up the role of CeMAT as follows: "CeMAT is where the German intralogistics sector meets its international clients, and that is the event's unique selling point. The feedback we received during the week has been positive across the board, with big numbers of high-caliber leads and requests for project quotes pointing to a highly successful CeMAT. As the VDMA materials handling and logistics industry association and as a CeMAT partner, we are delighted at the success of our members, which is also a success for the entire industry and of course for the event's organizers at Deutsche Messe."

"The intralogistics sector is a prime driver of innovation, spawning growth in other industries. Without intralogistics, the automotive industry, the wholesale and retail businesses, eCommerce and even mechanical engineering would be unthinkable," declared Dr. Christoph Beumer, Managing Director and Chairman of BEUMER Group GmbH & Co. KG and President of the CeMAT Executive Committee. He continued: "The CeMAT motto of 'Smart - Integrated - Efficient' was right on the mark, underscoring the need to apply the sector's vast know-how in order to arrive at holistic, streamlined solutions for every link of the intralogistics chain. This motto reflects the fact that Industry 4.0 is already a tangible reality, and that we are in a position to pass its benefits on to our customers. For Germany's intralogistics suppliers, CeMAT represents a major opportunity to get in early and generate valuable leads across other markets. For a great many of these companies, targeting international customers is the only promising way to achieve real growth. For example, countries like Rus-

sia, India, China and Brazil offer incredible potential for the future."

The new thematic landscape at CeMAT went over well with attendees. In the Move & Lift, Store & Load, Pick & Pack, Logistics IT and Manage & Service display categories, exhibitors presented their offerings on total display space of 120,000 square meters. The Industry 4.0 theme featured prominently throughout the show. The focus was on achieving flexible, dynamic material flows and seamless communication across all systems. In the industrial image processing category, exhibitors showcased the state of the art in packaging, production and container management. Another hot topic: demographic changes leading to a rising need for ergonomic warehouse and load picking workstations. Among the new products unveiled at this year's fair were data glasses capable of optimizing warehouse and load picking work processes, and tablet-based approaches to managing entire warehouses and their logistics processes.

CeMAT forums

CeMAT also featured two rich forum programs which put the spotlight on key applications and important markets. A broad range of themes was covered: demographic shifts, the retail and wholesale trade, chemicals and pharmaceuticals, supply chain management, driverless transport systems, ports, process optimization, eCommerce, hazardous materials, human/machine interaction, safety and quality, as well as industrial image processing.

The new display category on the open-site devoted to used industrial trucks proved to be a major visitor magnet, helping many vehicles find new owners in the course of the week.

CeMAT 2016

The next CeMAT will run for four days and be held in two years, from Tuesday, 31 May, to Friday, 3 June 2016 - once again in Hannover. An innovative new pricing scheme will give exhibitors a more differentiated range of participation options. This makes Deutsche Messe the first major German trade fair company to apply a flexible, zone-based pricing model for in-hall and open-air locations. And as a further innovation, the hall layout plans will be posted online as of December 2014, allowing interested exhibitors to book space online and receive immediate confirmation by e-mail.

**31st May - 03rd June 2016:
CeMAT 2016, Hannover (D)**

Deutsche Messe AG
D 30521 Hannover

The medicinal products market is changing. Sensitive biopharmaceuticals require more robust packages. Falsification has to be prevented with special seals and codes. And additional package features are necessary so that patients can safely administer medication themselves. Pharmaceutical companies and the packaging sector are faced with huge challenges.

New pharmaceutical packages protect proteins and prevent falsification



Figure 1: Quality control: Since glass vials are often filled with aggressive medicinal products, they are subjected to precise checks beforehand. (Photo: Schott PP/Jan Siefke)

When the medicinal products market was still dominated by blockbuster medicines, the pharmaceutical companies had it easy: they developed active substances that could be used to treat a large number of patients and produced medicines against widespread ailments such as high blood pressure and diabetes by the millions in standardised mass processes. The big multinationals thus earned billions year after year.

But times are changing. "The market for biopharmaceuticals with selective action and greater potency is growing in importance. Scientists are delving ever deeper into biochemistry and identifying new goals," explains Klaus Raith of Deutsche Pharmazeutische Gesellschaft e.V. (German Pharmaceuticals Society). Visiogain, the British market research company, confirms this trend. According to its findings, annual sales of biopharmaceuticals are currently experiencing double-digit growth and a continuing rise is forecast for the coming

ten years. This is forcing pharmaceutical companies to adapt. Some biomolecules readily decompose, while others are highly aggressive and attack the surfaces of primary packages. Containers with improved barrier properties and enhanced impact resistance are therefore required in order to reliably protect precious biosubstances. More flexible production processes are also called for, capable of precisely dosing even the tiniest quantities of active substance.

At the same time, pharmaceutical manufacturers have to safeguard their medicines better against falsification. Under the new EU Anti-Falsification Directive, virtually all prescription medicines will have to be provided, as of 2017, with a unique code number and a feature showing that the outer package has not been tampered with. Falsified pharmaceuticals are becoming a growing menace for patients. According to studies by the World Health Organisation, the falsification rate among medicines sold via dubious websites is already 50 per cent. The customs authority puts the share of falsified medicines in Europe at 10 per cent. No one is safe from product falsification. Fake and watered-down pharmaceuticals can be found not just in the lifestyle segment, but right across the range through to influenza medications.

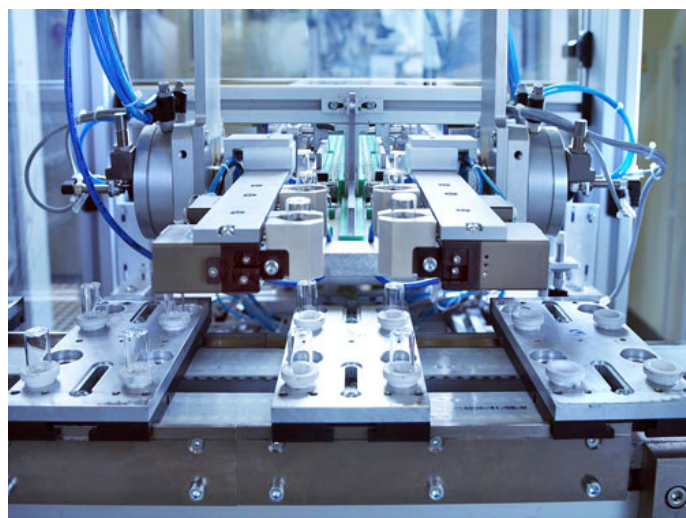


Figure 2: In the coater: To ensure that the glass does not interact later with the product, it is given a protective layer on the inside in a special coating machine. (Photo: Schott PP/Tobias Hauser)

The patient is king

Issues like self-medication and user safety are becoming increasingly important. Injections that only doctors used to give can now be self-administered by patients. To prevent injury, inbuilt safety needles retract immediately after injection. The packages of the future will be even more versatile. The Finnish-Swedish packaging manufacturer Stora Enso and Göteborg's Chalmers University of Technology, for example, are developing an intelligent package designed to simplify communication between patients and doctors. The package records precisely when a tablet is removed. If the doctor's prescription is not observed, the patient receives a wireless reminder – relayed

New pharmaceutical packages protect proteins and prevent falsification



Figure 3: Tiny seeds of hope: Researchers are working flat out to discover new active substances for better medicines. Crystals lend themselves particularly well to processing into tablets. (Source: Bayer HealthCare AG)

to a mobile phone, for instance. Such consumer-friendly solutions demand a difficult balancing act from pharmaceuticals manufacturers, who have to integrate extra features while also keeping costs under control.

The pressure to cut costs is passed on by the pharmaceuticals industry to the packaging sector. "Today's requirements in the pharmaceuticals sector are tough – in terms of both innovation and boosting efficiency in the drive to cut costs," explains Richard Clemens, Managing Director of the Food Processing and Packaging Machinery Association within VDMA. Developers are therefore working flat out on new packaging solutions and improvements in equipment for

the production of medicines. "Pharmaceuticals manufacturers need solutions that give them new room for manoeuvre in production," says Christina Rettig, spokesperson of Mainz-based glass specialist Schott. The company ranks among the leading suppliers of primary packages made of glass and has developed special glass vials for biomedicines that have a super-thin lining of silicon dioxide on the inside. For coating, Schott makes use of chemical vapour deposition in which, after the reaction of a precursor gas with oxygen at high temperatures, silicon molecules are deposited on the glass wall. "The silicon layer prevents protein interactions with the package surface and protein adsorption – sensitive biopharmaceuticals thus stay stable," Rettig explains. At interpack 2014, the world's premier event for the packaging sector and related processing industries, Schott will be presenting, among other things, innovative solutions in the pharmaceuticals vial segment from 8 to 14 May 2014.

Multi-layer plastic bottles are an alternative to glass vials. Some polymers such as polyolefins are transparent like glass but protect biopharmaceuticals even better as their surface cannot be attacked by alkaline liquid medicines and contain hardly any organic substances that might enrich bio-substances. On the other hand, the polymers are relatively expensive, which is why the industry has been hesitant to use them so far.

Every package a one-off

Progress has also been made in the fight against falsification. August Faller, a manufacturer of secondary pharmaceuticals packages in Baden, has developed barcodes, alphanumeric series and data matrix codes for folded boxes and labels for the serial coding of packaging materials. The specialist uses ink-jet technology to print the packages with the serial product information, thus making it possible to trace the medicines back to the manufacturer.

The demand for identification solutions can be expected to grow rapidly in the coming years. securPharm, the umbrella organisation for five medicinal product distribution associations, intends to establish a system based on data matrix codes to guard against falsified medicines by 2017. The idea is that the manufacturers of the medicines make each package a one-off by printing it with a square data matrix code containing a unique number. They store all the awarded numbers in a shared manufacturer database. At the pharmacist's, the code of each package is then scanned and checked with the database



Figure 4: Upping the tempo in tablet manufacturing: Machines for the production of pharmaceuticals are becoming more and more efficient. With new systems, users can almost double product output. (Photo: Fette Compacting)

New pharmaceutical packages protect proteins and prevent falsification

before the medicament is handed out to the patient. As this check takes only a few seconds, falsified products are quickly identified. The system has already passed its practical test with 280 participating pharmacist shops, 24 cooperating pharmaceutical companies, over 3.5 million marked medicinal product packages and over 30,000 authentications, explains Reinhard Hoferichter, spokesman of the securPharm Executive Board. "With newly coded packages of selected drugs, we achieved system accessibility 99.5 per cent of the time."

Machine and plant manufacturers have adjusted well to the new requirements of the pharmaceuticals sector. New production equipment that produces and packages medicines faster and more flexibly helps manufacturers to offset high outlay on elaborate packages and supplementary features with cost savings in production. For the identification and tracking of medicines, Italian automation specialist Marchesini, for example, has developed a track-and-trace solution whose printing module is capable of printing 400 folded boxes per minute from both sides and from the top with different security labels. A camera then checks and verifies the codes. The data are finally stored in a huge central server from where they can be retrieved at any time, thus making things exceptionally difficult for counterfeiters.

More efficient production

Swabian machine manufacturer Bausch + Ströbel is also pulling out the stops for pharmaceuticals companies. "In the production of modern biopharmaceuticals, it is becoming more and more important to achieve highly reproducible precision in the filling process with high machine efficiency and availability in sterile conditions. "We are investing heavily in innovation, quality assurance and process technology so that we can continue to offer our customers the best-possible solutions," says Managing Director Hagen Gehringer. The company's innovations include a fully automatic labelling machi-

ne that labels bottles at a rate of up to 21,000 per hour and permits reel changes without interrupting production.

Bausch + Ströbel and sensor specialist visiotec have also developed a process permitting the continuous control of filling processes without output being reduced by this close scrutiny. During the production of medicines, 100 per cent in-process checks are often necessary, as it is essential to ensure that precisely the right proportion of active substance is contained in each vial, syringe or carpule. Until now, the filled vials have been removed from the process and weighed, thus reducing the rate of production throughput. Instead, with their new method, Bausch + Ströbel and visiotec use sensors that check the vials in the on-going process and thus maintain high machine speed.

Northern German equipment supplier Fette Compacting also specialises in greater speed and flexibility. It now claims that the rotary table press recently added to its product range achieves product changes faster than any other presses in its performance bracket. Replacing the rotor, the key component of the machine, is said to take only 15 minutes. On existing conventional presses, this process may take more than an hour. The rotor carries the filling cams that mechanically control the movement of the punches and ensure that the tablets are pressed with precision. To change the rotor, it has always been necessary until now to unscrew many individual parts. Fette has designed the component in larger segments so that it can be replaced faster. The packaging sector currently has a multitude of innovations in store for the pharmaceuticals industry. At interpack 2014, visitors can gain their own detailed impressions. Overall, about 1,100 of the roughly 2,700 exhibitors have expressed their intention to show solutions for the pharmaceuticals industry.

Messe Düsseldorf GmbH
D 40001 Düsseldorf



Figure 5: All from a single source: Compact, fully automatic production systems cut costs. On this syringe line, plunger assembly, labelling, safety device assembly and syringe buffering dovetail intelligently. (Photo: Bausch + Ströbel)

POWTECH is the world's number one trade fair for processing, analysis and handling of powder and bulk solids and the key innovation and information forum for all sectors. The show focuses on equipment for size reduction, grinding, mixing, fractionating and screening, filtering, agglomerating, dosing, weighing, emptying and filling, as well as the complete particle analysis process. From 30 September till 2 October 2014, more than 700 exhibitors from over 25 countries will once again showcase their entire range of cutting-edge mechanical processing technology. Around another 250 exhibitors will present the latest developments in sterile production processes for pharmaceuticals, food and cosmetics at the parallel TechnoPharm show.

The world's leading powder and bulk material industry gathering meeting heads for Nuremberg

**30th Sept. - 02nd Oct. 2014:
POWTECH 2014, Nuremberg (D)**

“POWTECH is much more than just a trade fair for the individual stages of mechanical processing,” says Willy Viethen, Director Exhibitions at NürnbergMesse. “In Nuremberg, designers and operators of equipment for the powder and bulk solids processing industry will also find a lot of innovative solutions for linking up these process stages.”

End-to-end solutions

The exhibitors at POWTECH present technical solutions for all flows of powders, granules and bulk solids within a company, starting with solutions for incoming goods with all options for emptying big-bags, containers, silos and sacks. They also showcase current developments in pneumatic and mechanical conveying such as bucket conveyors, screw conveyors, hoppers, vibrators and belt conveyors as well as vacuum and pressure conveying systems. In addition, more than 200 POWTECH exhibitors will introduce innovations and improvements in filling and bagging systems, palletisers, big-bag filling equipment and other solutions for packing or filling powders and granules.

Automation a key component

POWTECH 2014 will also live up to its reputation as the world-leading trade fair for the bulk material processing industry because it also includes an overview of the entire range of automation technology available. More than 200 exhibitors of automation solutions make POWTECH the standout innovation show for the materials processing industry.

The show therefore accurately reflects the extent to which automation technology is already part and parcel of conventional mechanical processing. Because nowadays, it is hard to imagine operating any materials processing plant without recipe management, batch control, material flow data logging and reliable end-to-end tracea-



bility. This is why it is no surprise that the world's leading vendors of field instrumentation or process control technology – such as Endress+Hauser, Vega, Proleit or Siemens – have for many years been using this platform in Nuremberg to showcase their solutions.

Safety and environmental technology always to the fore

For designers and above all operators of powder and granulated material plants, environmental protection, explosion and fire protection, emission control and occupational safety are always a top priority. Dust explosions, workplace concentrations, filter monitoring and particle separation are just some of the key issues that represent a daily challenge for plant operators in the materials processing industry. Around 80 exhibitors at POWTECH 2014 will specifically focus on innovations relating to safety issues.

Highlights from the supporting programme

The trade fair experience includes numerous presentations. On the second day of

the show, the POWTECH forum is devoted to the issue of efficient explosion protection. Technical presentations on fire and explosion protection will be followed by a panel discussion and exclusive guided tour by trade journal publisher Vereinigte Fachverlage. Also worth seeing are the live explosions in the exhibition centre parklands.

In addition, a presentation series by technical publisher Konradin Verlag will provide an overview of the technologies currently available to transport sensitive bulk solids from A to B carefully and without segregation.

Interested companies still have until 29 August 2014 to apply for the Innovation Award 2014 conferred by Vogel Business Media at POWTECH. On the second day of the show there will be 90-minute tours for the first time in which the winners and those reaching the shortlist will present their products. Further information on the supporting programme is available at: www.powtech.de/supportingprogramme.

NürnbergMesse GmbH
D 90471 Nürnberg

55% Increase in Export Sales Helps Fuel Growth

Cherwell Opens Expanded Redipor® Prepared Media Facility

Cherwell Laboratories, manufacturer of Redipor® prepared microbiological media, has completed an expansion programme at its Bicester-based facility. Initiated in response to a significant increase in demand, Cherwell has doubled the size of its cleanroom manufacturing suite and recruited additional staff to support the higher production capacity. Cherwell is renowned for offering a flexible supply of quality prepared media products, and the expanded facility ensures increasing demand in the UK and mainland Europe can be accommodated.

Cherwell's continuing growth is partly fuelled by the development of export sales - up 55% in the past two years - and the appointment of further European distributors for the Redipor range. Already supported in Italy, Ireland, Poland and Slovenia, Cherwell has recently signed distributor agreements with AcefeSA in Spain and Dorte Egelund in Denmark. The Company has carefully selected partners with the capability to deliver the same quality of service enjoyed by its UK customers.

The Company has increased its UK market share through a dedication to customer

service and the ability to deliver bespoke prepared media solutions. Many customers are switching to the convenience of Redipor pre-prepared media rather than making their own onsite. Increased pressure by regulators for more environmental monitoring has also led to overall growth in the prepared media market. Notably, demand for Redipor Barrier pack products, for use in isolators where Vaporised Hydrogen Peroxide (VHP) is present, has grown, reflecting the increased use of VHP technology for sterilisation procedures.

Andy Whittard, Managing Director, Cherwell Laboratories commented, "This investment in facilities and capabilities is a clear indication of our commitment to developing our position as a leading supplier of prepared media. Recent market research shows our customers value not just the quality of our products, but increasingly our service and support. Most importantly, we are consistently delivering what our customers want."

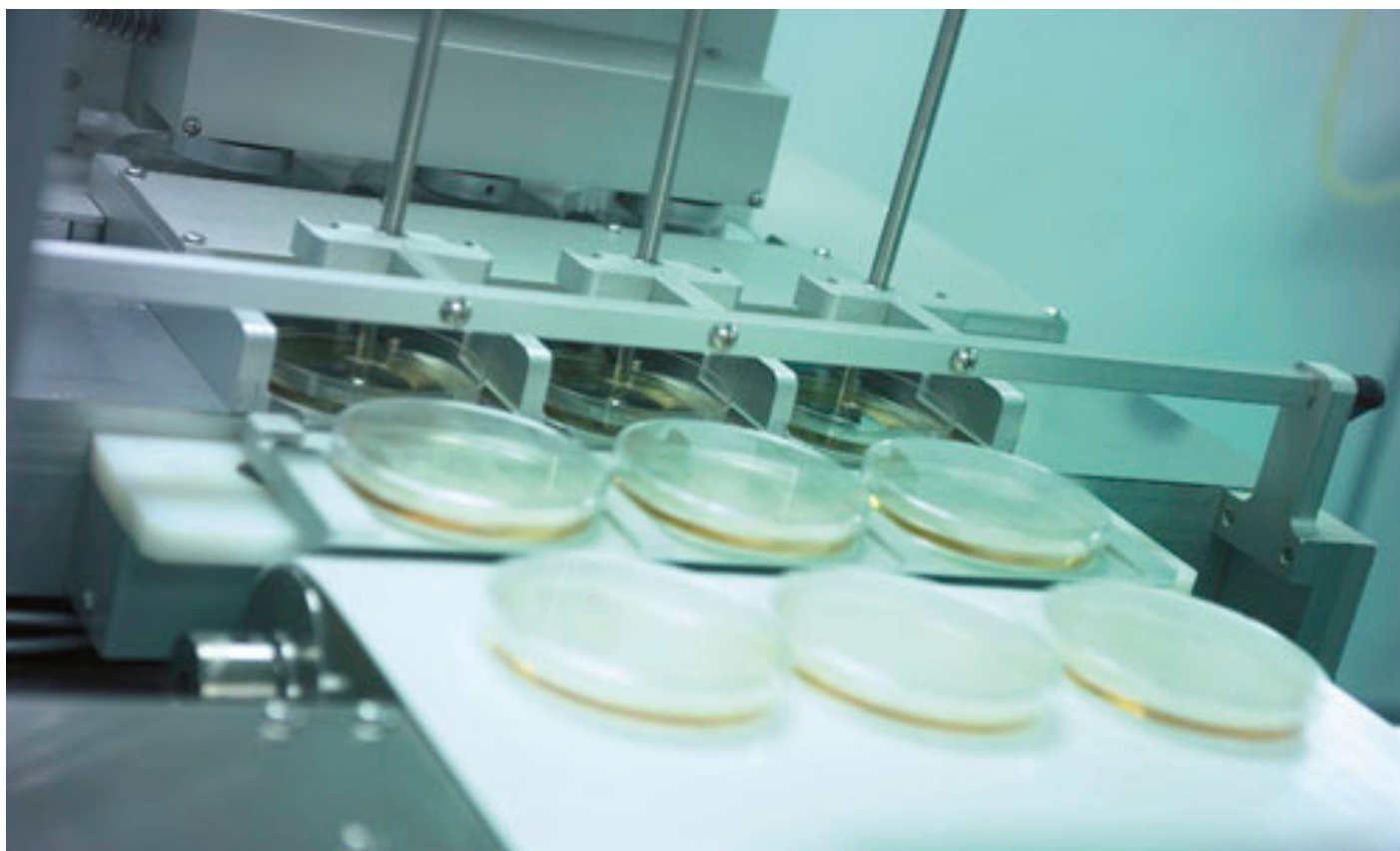
He added, "By developing our export markets through carefully selected partners, we aim to continue growing our UK-based production in a controlled manner, keeping excellent service and the customer at the

core of what we do."

With over 40 years' experience, Cherwell has developed a fully integrated range of products for environmental monitoring, product sterility testing, operator validation and process validation. Cherwell's range of Redipor high-quality prepared media products includes petri dishes and contact plates, plus bottled media, broth bags and ampoules.

Redipor prepared media is designed to meet customer requirements for both industry standard products and those with a unique formulation or presentation. All Redipor products are subjected to a full array of QC tests, including comprehensive growth tests, with detailed QC certification supplied for every batch. The flexible production methods and managed stock levels, all supported by the new manufacturing facility and investment in additional production equipment, allow Cherwell to deliver cost-effective, in-time solutions for both large and small customers alike.

Cherwell Laboratories Ltd
OX26 4XB BICESTER
Vereinigtes Königreich Großbritannien und Nordirland



Fab-Automation live: Roth & Rau - Ortner presented its mobile Transport-Robot for the Semiconductor Industry at Semicon Europa

During Semicon Europa Roth & Rau - Ortner GmbH presented its new mobile robot for cleanroom applications, Scout active. As a specialist for fab automation, the company has developed the autonomously navigating robot together with its partner MetraLabs GmbH.

Equipped with a 6-axis-robot, Scout active can execute transport jobs in semiconductor fabs as well as in other ultraclean environments. It can not only transport wafer cassettes, but it also can pick and place those where needed. "Up to now, Scout has been known as a transport vehicle only", says Dr. Karli Hantzschmann, Division Manager Automation of Roth & Rau - Ortner. "Now it becomes an active system, which takes over transport jobs as well material handling tasks from busy operators - thus Fabs can operate more efficiently and save valuable time and cost."



Scout's touch screen in detail.

Autonomously operating SCOUT for efficient material transport in Semiconductor Factories

Scout navigates autonomously and does not require any additional infrastructure, neither on the floor nor on the ceiling. Via WiFi and a Graphical User Interface new transport jobs can be issued, and important status information like its current position can be displayed. Scout is cleanroom proven up to ISO class 3/ US FED 1 and has shown its reliability with over 5.000 km of operational performance.

Scout can be integrated wherever a permanently installed transport system such as rails or a conveyor system cannot be implemented or would be too expensive. "With its compact size and reliable sensor technology Scout can operate safely in areas where people and machines work very closely together." explains Dr. Hantzschmann.



Scout helps operators and allows them to concentrate on important tasks.

Scout is capable of moving various materials and products between any points in the fab; it can take measurements and provide tools and auxiliaries where needed. Equipped with different handling units, (i.e. robot-arms or linear-axis) or transport features, (i.e. for SMIF Pods and HA 200 boxes), Scout can be individually configured to customers' specific needs.

Smart Automation Solutions for more competitive Semiconductor Factories

Scout is an integral part of Roth & Rau - Ortner's "Missing Link" concept, which offers tailor made automation solutions for existing semiconductor fabs. Its main focus lies in manufacturing and is well-suited for semi-automated-production. In older fabs manual material handling between production steps is quite common. "This uses up valuable manpower, it is time consuming and it generates significant cost, and on top of that, it is error-prone. For these production lines, Ortner has individually designed technology for wafer and cassette handling in cleanrooms, custom made for making fabs more competitive." commented Dr. Karli Hantzschmann.

Roth & Rau - Ortner GmbH
D 01099 Dresden



Scout can even be used safely in areas where people and machines work closely together.

Regulations to treat electronic cigarettes as medicinal products are due to be adopted later in 2016. When these come into place, high quality and reliable products will shape the future of this emerging market.

The Electronic Cigarette Revolution



Production and manufacturing environments will no doubt be key focus points for manufacturers in ensuring the highest levels of quality are achieved.

The E-cigarette Market is currently a highly debated topic, and with forecasted annual growth of 31% there are enormous opportunities within this sector. As quoted recently on BBC News, E-Cigarette users are 60% more likely to quit smoking.

Regulation to Smooth Controversy

National No Smoking Day on the 12th March sparked a debate on e-cigarettes, with the concerns voiced about e-cigarettes attracting the youth market and being glamorised in advertising. In short, it seems there is a concern that e-cigs are becoming the latest new craze, as opposed to the smoking cessation aids for which they were intended.

This coupled with Wales being the first country to propose initiating a ban on e-cigarettes in public places makes this a very current topic.

The upcoming regulation on nicotine containing products (NCPs) was announced in 2013 by the Medicines and Healthcare Products Regulatory Agency (MHRA) and the European Commission's draft Tobacco Products Directive. Medicinal products have strict rules governing advertising and so regulation will help address these concerns and lead to a more positive future for the

electronic nicotine delivery system (ENDS) market.

Focus on Quality Production

One organisation which has noticed a change in pace from e-cigarette manufacturers is contamination control company, Connect 2 Cleanrooms who manufacture bespoke modular cleanrooms, which organisations use to create clean manufacturing environments in which the concentration of airborne particles is controlled.

Airborne particles, although invisible to the eye, could create microbial contamination in the vapour from electronic cigarettes. Cleanroom production will significantly reduce this risk for personal vaporiser (PV) manufacturers, as cleanrooms are constructed and used in a manner to minimise the introduction, generation and retention of these particles.

Connect 2 Cleanrooms recently installed a modular cleanroom for The E-Liquid Company to accommodate their e-liquid mixing and dispensary machine providing a ISO 14644-1 standard Class 5 (Federal Class 10,000) clean area.

"By investing in a cleanroom environment, The E-Liquid Company is recognising the importance of creating controlled clean environments when producing the liquids for the e-cigarette applications. It also gives our customers reassurances that the pro-

ducts will be produced in a clean environment, preventing potentially harmful contamination and stands us apart from competition, particularly the home manufacturer competitors." Suhail Virmani, Director of The E-Liquid Company.

The E-Liquid Company's products contain a variety of every day food components that can be digested, including food flavours and vegetable glycerine that helps to produce the vapour. E-liquid flavours range from drink flavours, to food flavour to tobacco flavour. They contain nicotine and offer a nicotine free option but have NO alcohol and are nut free. They are a mixture of flavour and vapour.

"The provision of our modular cleanrooms to e-cigarette industry leaders, The E-Liquid Company, will help to shape the industry and support new legislation whilst highlighting the importance of producing the e-cigarette products in a controlled environment," says Joe Govier, MD. Connect 2 Cleanrooms Ltd.

Connect 2 Cleanrooms' consumables division, Cleanroomshop.com, which distributes cleanroom disinfectants and consumables, has also noticed an increase in demand from the e-cigarette market. It notes a sharp rise in demand for premier disinfectants, which have full technical files documenting kill rates for potentially harmful micro-organisms.

They have been advising newcomers to contamination control about suitable cleaning and disinfecting techniques, which will reduce the risk of potentially harmful build-up of micro-organisms.

Connect 2 Cleanrooms is an industry leader in creating modular cleanroom solutions for critical environments, both in the UK and internationally. The company designs and manufactures hard and soft wall cleanrooms in-house and delivers quality cleanroom solutions to meet the ISO 14644-1 standard required.

Its consumables division, Cleanroomshop.com, supplies a full range of consumables, equipment and furniture to the cleanroom industry worldwide.

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New standards for surface cleanliness, energy efficiency and nano-particles are under discussion

Cleanzone 2014 provides information on the latest cleanroom standards and their implementation

21st to 22nd Oct. 2014

Cleanzone Frankfurt am Main (D)

The word “clean” almost automatically brings to mind a universal ideal, yet cleanroom philosophies vary from continent to continent, as well as from region to region. Traditionally the USA is seen as being fond of regulations, Japan as focused on technology and Europe as leaders in the field of applied engineering. This gives rise to all manner of ideas which are currently leading to the continued development of recognised standards.

Koos Agricola, General Secretary of the ICCCS (International Confederation of Contamination Control Societies) and the ICEB (International Cleanroom Education Board), sums up the situation: “Whereas the US is known for sticking with familiar processes for a long time, US researchers are responsible for introducing numerous new technical solutions for cleanrooms. Japan is currently producing fewer outstanding innovations than it did in the past, yet it has perfected an extremely scrupulous system of quality control.”

Most of the ideas for optimising existing standards and guidelines originate in Europe. Emerging markets in Asia and South America, home to an increasing number of new cleanrooms, are fond of adopting these advances. Koos Agricola: “They often use European products, but increasingly there are also alternatives available from China. Staff training is a significant factor, and Europe could play a much bigger role here than is currently the case.”

In spite of different national regulations, VDI Guideline 2083 (VDI – Association of German Engineers) and ISO EN DIN 14644 have established themselves as the basis for cleanroom operation and have become widely accepted internationally. According to Thomas Wollstein, who has overall responsibility for the field of cleanrooms at VDI: “The chaos that prevailed 50 years ago when there were countless national cleanroom standards has now been eliminated with ISO 14644. Many useful standards have been implemented using this as a model. Now there are a number of pressing new issues on the agenda.” The solutions to these issues will change cleanroom operation in important



On all continents and even in space: science astronaut Ulrich Walter during his speech at the Cleanzone Congress. (Source: Ehrensberger)

ways.

Taking smaller particles and viable organisms into account

For the definition of air purity classes, particle size distributions based on the distribution of “natural aerosols” in ambient air have been defined down to the micron and sub-micron range. Following the expansion of the air purity classes to cover nano-particles (scale: 10 angstroms), which have their very own agglomeration behaviour, these must now be accounted for with new particle size distributions and new measurement methods. The development of the corresponding standards is only just beginning.

It is not only extremely small particles that pose problems, but also those which can reproduce, such as bacteria. Unlike aerosol particles, however, these cannot be measured immediately. Instead, they must first be allowed to reproduce in a culture for a number of days in order to demonstrate sterility, so that the product can be approved. There is already a VDI guideline governing bio-contamination, which helps meet the need for rules governing the hygienic design of cleanrooms.

This guideline is completed by a brief introduction to the GMP cleanroom classes, their areas of application and the threshold values on which they are based. This poses the question: just how important is GMP cleanroom classification in comparison to ISO classification? This is to some degree a question of philosophy, but in practice it means that anyone who manufactures phar-

maceuticals has to work in accordance with GMP, as otherwise they will be unable to satisfy the conditions of audits performed by regulatory bodies. Certification in accordance with ISO standards can also offer additional advantages, such as the optimisation of workflows, the utilisation of all potential cost reductions and the ability to satisfy specific customer requirements. Companies who wish to enjoy these benefits do not have to start from scratch, however, as GMP compliance generally equates to compliance with 70 to 80 percent of the requirements for ISO certification. One thing both classification systems have in common is the fact that they are based on air cleanliness, and they always specify upper limits on the numbers of particles of particular sizes that are permissible per cubic metre.

Cleanable, cleanroom-compatible: surfaces and materials

Koos Agricola: “More and more people in the sector are also coming to realise that clean air is far from the only thing that matters in a cleanroom. It is also necessary that all surfaces be cleaned in accordance with the specifications of ISO 14644-9, yet there is still no standard governing the particulate deposits on the fixtures, furnishings and walls, among other things.”

Materials – and combinations of materials – are an important part of this equation, as it is sometimes necessary to deal with material pairs, such as a roller moving across a surface. Thomas Wollstein: “In Part 17 we recently described a process that reproduces

Cleanzone 2014 provides information on the latest cleanroom standards and their ...

actual usage conditions. This involves allowing a ball to roll across a surface in order to define the standard contact load. The model is based on relevant research conducted by the Fraunhofer-Gesellschaft.”

Potentially much more energy efficient

Tremendous progress has been made with regard to energy efficiency in the cleanroom in German-speaking countries in particular. Michael Kuhn of STZ EURO (Steinbeis Transfer Centre for Energy, Environmental and Cleanroom Technology, Offenburg) provided numerous examples to demonstrate just how large the potential savings can be – almost always 10 to 20 percent, and as much as 50 percent when all of the potential sources of savings are utilised. Standardisation in the form of standards is currently under way at the VDI, and the British Standards Institution – the UK’s counterpart to Germany’s DIN – has already proposed that this issue be tackled within an international framework.

Pole position for Europe – update for everyone at Cleanzone

To sum up, although the term “standard” brings to mind something that has been set in stone, there is currently a great deal happening in the field of cleanroom standards. An entire series of questions having to do with standardisation problems is now being addressed in Germany, Austria, Switzerland, and the Netherlands. These currently include surface cleanliness, bio-contamination with viable organisms and the expansion of particles covered to include nano-particles.

Visitors will be able to find associated

ideas, a wealth of tips for implementation in actual practice and innovative technical solutions at Cleanzone, the international trade fair and congress for cleanroom technology, on 21 and 22 October 2014 in Frankfurt am Main. It represents one of the best opportunities for obtaining comprehensive information and for establishing important personal contacts.

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The Cleanroom show in Frankfurt stands also for intense discussion in the Cleanzone Plaza (Source: Ehrensberger)



The people are the biggest particle accelerators – the partially shut down of the systems during a non-production time offers saving potential. (Source: STZ-EURO)



For a low air exchange and a resource saving work at the frontier of cleanroom and the so called normal world. Highspeed roller door according to the standard DIN EN ISA 14644-1 and GMP. (Source: Albany Door Systems)



In the sluice: must be easy to decontaminate and to autoclave according to EN IS- 14644 and EU-GMP guideline (inclusive annex 1). (Source: Palmbam Class / basan GmbH)

Pre-validated single-use filling systems from a single source

Bosch expands PreVAS portfolio

- Successfully used by customers in Europe, the U.S. and China
- New multi-tubing port for efficient upgrades
- All key components as well as pre-tests from a single source

At Interpack 2014, Bosch Packaging Technology, a leading supplier of process and packaging technology, presented the expanded portfolio of the single-use filling system PreVAS. „The existing system has been successfully introduced to the market. Now the time has come to offer our customers additional solutions for their existing line concepts and to consequently extend our portfolio,“ Klaus Ullherr, product manager at Bosch Packaging Technology said. The name PreVAS stands for pre-validated, pre-assembled and pre-sterilized single use filling systems, which Bosch Packaging Technology has developed in cooperation with Sartorius Stedim Biotech (SSB).

Fast and economic upgrades

Since the official launch in 2012, PreVAS has been successfully established in the market and is used by customers in Europe, the U.S. and China, who produce in accordance with strict GMP guidelines and FDA regulations. „As with every successful system, the development of PreVAS is also



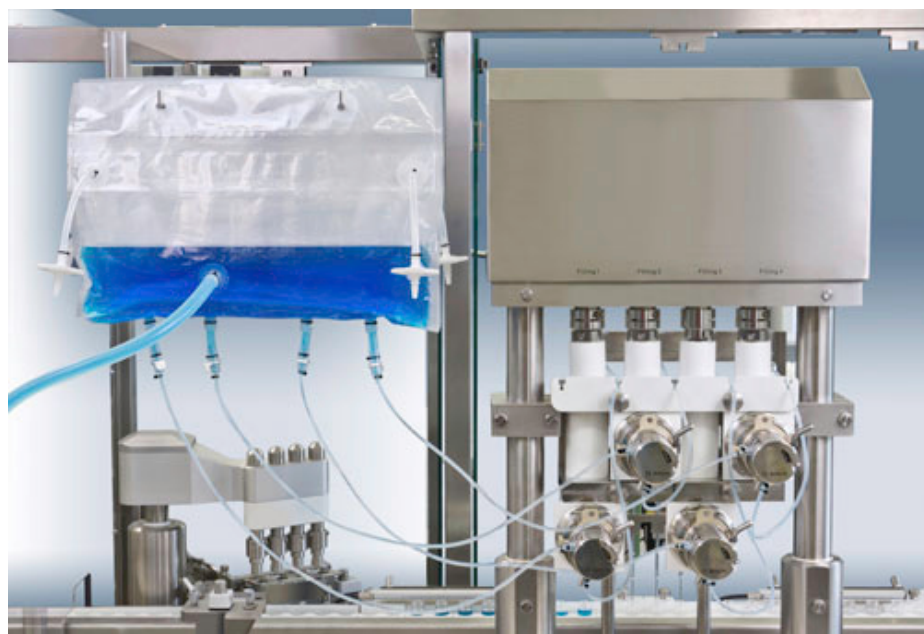
PreVAS: well-validated in the market: Since the official launch in 2012, PreVAS has been successfully established in the market and is used by customers from Europe, the U.S. and China, who produce in accordance with strict GMP guidelines and FDA regulations.

never fully completed. We constantly work on developing new approaches for specific customer requirements,“ Ullherr explained. With the PreVAS pump trolley, customers now receive a mobile filling station, which can be flexibly combined with existing filling lines. In this version, the product bag is situated outside of the isolator, while the

filling tubes are compactly and safely guided through the isolator wall via the newly developed multi tubing port, before being connected to the filling station. „Customers can now quickly and economically upgrade their existing lines to filling operations with PreVAS,“ Ullherr said.

Comprehensive pre-validation

Just like the entire single-use filling system, the multi-tubing port is also fully validated. Prior to its market launch, PreVAS was tested and validated under realistic conditions for one year. Amongst others this included performance tests for filling accuracy, biocompatibility tests, extractable and leachable studies as well as particle tests. „Our customers receive all key components from a single source- bag, pump and tubing, as well as filling needles. Combined with comprehensive validation and technical support for upgrades, PreVAS answers the requirements of the pharmaceutical and biopharmaceutical industry for higher filling accuracy as well as safe and flexible solutions for simple and quick product changes,“ Ullherr concluded.



Single-use filling system PreVAS: The name PreVAS stands for pre-validated, pre-assembled and presterilized single-use filling systems, developed by Bosch Packaging Technology in cooperation with Sartorius Stedim Biotech (SSB).

Bosch Packaging Technology
D 74554 Crailsheim

Distributors Mikro-Optik Tıbbi Malzeme İthalat İhracat ve Ticaret Limited İrketi and Gantenbein Ticaret Mürsel Gelincik ve Orta İ Adi Komandit İrketi Have Been Acquired

Leica Microsystems Strengthens Market Presence in Turkey

Leica Microsystems has strengthened the alliance with its Turkish distributors Mikro-Optik Tıbbi Malzeme İthalat İhracat ve Ticaret Limited Şirketi and Gantenbein Ticaret Mürsel Gelincik ve Ortağı Adi Komandit Şirketi, thereby deepening its market presence in Turkey. All relevant assets of the two companies, both of Istanbul, with another office of Gantenbein's in Ankara, have been acquired as of June 4, 2014. Mikro-Optik distributes and services Leica surgical microscopes and has worked closely with Leica Microsystems since 1985. Gantenbein provides customers from industry and life science research with products and services and has acted as a distributor since 1952. The associates of both companies will be taken on and integrated into a new Turkish legal entity together with our Turkish associates. This Turkish legal entity is currently being established and will be headquartered in Istanbul. The office in Ankara will be retained.

"We see significant potential in the Turkish market. There is an increasing demand for our products and services from the medical community as well as customers from industry and life science research," says Peter van den Broek, President Leica Microsystems. "Mikro-Optik and Gantenbein are highly valued partners who have built and nurtured customer relationships for decades. We are investing into these relationships and developing our business further with this move."

Hayk Celalyan, former owner of Mikro-Optik, will act as a consultant during the integration of the businesses. He adds: "With the more direct link to Leica Microsystems, we will be even better able to serve customers in the future. This will also help in the development of new products as well as the evolution of existing ones, as the people in the field can address directly what our customers need. I am looking forward to being part of this new chapter."

Having been founded as a family business in the 19th century, Leica Microsystems has a tradition of developing and evolving high precision optics and scientific instruments "with the user, for the user". "At Leica Microsystems, we work to ensure that our products and services are exactly as the users need them. We support them in their work-flows, constantly striving to understand how we can help them achieve their results more quickly, more precisely, and more easily," says Mehmet Dinc, General Manager of the prospective Turkish branch. "We want our customers to succeed at what they wish to attain - whether that is technicians inspecting the quality of components, biologists exploring the secrets of life and brain surgeons operating on their patients. We are looking forward to cooperating more closely and directly with our customers in Turkey."

Leica Microsystems GmbH
D 35578 Wetzlar

In 2014, Leica Camera AG will be celebrating 100 years of Leica photography

The year 1914 saw the birth of 35 mm photography as we know it today. Oskar Barnack made the Leitz Camera, the very first Leica, 100 years ago. And now, in 2014, Leica Camera AG is celebrating the centenary year of this occasion with numerous events, exhibitions and exciting new products. The slogan for this centennial celebration is '100 years of Leica photography'.

Oskar Barnack, an employee of the Leitz Werke Wetzlar and a pioneer of photography, invented and constructed the first still picture camera for the 35 mm film format (24 × 36 mm) in 1914. The construction of this so-called Ur-Leica according to Barnack's philosophy of 'small negative - big picture' revolutionised the world of photography with vastly increased creative scope for photographers who, up until then, had had to rely primarily on cumbersome plate cameras for their work. Barnack therefore originally gave his compact and highly portable prototype camera the name 'Liliput', as is noted in the company archives in a document dated March 1914: 'Liliput camera completed'. The original is still in the possession of Leica Camera AG, together with the negatives and prints

of the first exposures captured with the Ur-Leica - including pictures from a trip Ernst Leitz II took to the United States in the summer of 1914. In 1925, following inevitable delays as a consequence of the First World War, the Leica finally set out to conquer the world of photography and founded the legend of the brand with a multitude of iconic pictures that have profoundly influenced our understanding of the world. Examples of these include Robert Capa's 'Falling Soldier' from the Spanish Civil War, the famous portrait of Cuban revolutionary leader Ernesto 'Che' Guevara by Alberto Korda, the naked and burning young girl Kim Phuc, photographed by Pulitzer Prize winner Nick Út during the Vietnam War, and the photo by Alfred Eisenstaedt which captured the celebrations on VJ day in New York's Times Square in 1945.

Dr Andreas Kaufmann, chairman of the Supervisory Board and majority shareholder at Leica Camera AG, summarised the history of the company as follows: 'No other brand has so crucially shaped and influenced the past 100 years of photography like Leica has - by continuing to provide photographers with the best tools and superb lenses to

match them. For this reason, it is only logical that we will be celebrating our centennial with numerous renowned photographers from around the globe and shining a spotlight on their work.'

Alfred Schopf, chairman of the Executive Board at Leica Camera AG, also announced a range of product highlights that will accompany the celebrations of Leica in the centennial year. 'That Leica today, as in the past, is still synonymous with high-end, handmade products, iconic design, technical innovation and better pictures will be confirmed by the selected products we will be presenting in the course of our centennial year.' This campaign will be accompanied by a series of cultural projects, photography exhibitions and competitions, book presentations and a special issue of LFI with the title '100 years of Leica photography'.

Another highlight of the centennial year is the relocation of Leica Camera AG to the new, ultra-modern factory and administrative complex in the Leitz Park in Wetzlar, which will be officially opened in May 2014.

Leica Camera AG D 35578 Wetzlar

ICEC – Lutfi Kırdar International Congress and Exhibition Center

Cleanroom Technology, Maintenance and Equipment Exhibition, 16th-18th April 2015

Technology, developments, special applications and solutions... Facility managers and "Cleanroom professionals" who design and engineer "extraordinary spaces" for facilities, will come together at the "one and only" Cleanroom Exhibition of Turkey in Istanbul, on 16 -18 April 2015.

**16th - 18th April 2015:
Cleanroom Exhibition 2015
Istanbul (Turkey)**

Nowadays; special industrial plants, medical facilities, research&development departments of the concerned facilities require very hygienic and extremely sterile spaces which should be designed and engineered with high-tech materials and equipment.

Production&operability process, special equipment, control techniques, management models, certification and risk management systems are all indispensable fields of the cleanroom applications.

Cleanroom 2015 Exhibition will be an appropriate business platform for all concerned sectors to present the materials, products, technology and services for the increasing demand of the facility managers and professionals who require "Cleanroom" in their facilities. The concerned industries are invited to establish new business contacts in this rapidly

developing field and to take a place in the future-oriented market of Turkey.

Istanbul : an international Hub for industry and technology ...

As one of the Megacities of the world, Istanbul is also known as the capital of economy of Turkey and a very important international business point, located as a bridge from Europe to Near Asia and entire Middle East as well as the Eastern Mediterranean area. Thousands of huge industrial facilities including medicine, metal processing, heavy industry, food processing etc. have been located in and around Istanbul and neighbouring provinces that create a huge business volume for the suppliers of technology, equipment and solutions for Cleanroom applications. Moreover, private healthcare services recently became a very important sector in Istanbul giving considerable market opportunities to the concerned suppliers as well.

Cleanroom Istanbul 2015 Exhibition offers ideal business opportunities to make

new business contacts and to meet the expanding industrial market of Turkey.

Cleanroom Istanbul 2015 Exhibition is:

- a business platform to meet industrial professionals and facility managers to establish new business relations,
- an information center of the innovative cleanroom technology with its wide range of exhibited products,
- a marketplace for new trends,
- an academic meeting point with an interesting and attractive accompanying programme to the professionals,
- not only an exhibition itself but also a network in the fields of; cleanroom technology, facility management, industrial maintenance and sustainability in facilities.

Akdeniz Tanitim A.S.
07100 Antalya Türkiye



Exhibitors profile

The main exhibiting categories of Cleanroom Istanbul 2

> CLEANROOM BUILDING

- > Engineering, Design, Construction
- > Cleanroom Floor, Wall, Door, Ceiling Systems
- > Cleanroom Furnishings

> TECHNOLOGY& EQUIPMENT

- > Air Conditioning, Air Filtration and Air Handling Units
- > Air Distribution and Ventilation Materials and Components
- > Process and Laboratory Water Treatment
- > Testing, Commissioning and Validating Systems
- > Cleanroom Devices and Equipment
- > Laminar Flow Cabinets
- > Microbiological Safety Cabinets
- > Airborne and Surface Disinfection Equipment and Materials
- > Electronics, Automation and Digital Systems
- > Chemicals and Gas Distribution and Treatment

> OPERATION & ORGANISATIONS

- > Training and Consulting
- > Cleaning Equipment and Services (Washing, Sterilisation)
- > Laboratory analysis services
- > Packing and handling
- > Cleanroom Housekeeping
- > Qualification and Testing
- > Consumables, Clothings and Personal Equipment
- > Publishings, Organizations

Visitors profile

Target visitor groups of Cleanroom Istanbul 2015 Exhibition

Target Professionals:	Target Sectors:
cleanroom designers	Health Industry
cleanroom sectional managers	Medicine Industry
hospital managers	Manufacturing Industry
Laboratory asistants	Food Processing Industry
facility managers	Chemicals Industry
Technical managers and technicians	Biotechnology
production, process managers	Cosmetics
IT system managers	Electronic Industry
facility engineers	Nuclear Industry
the authorised advisers for quality control and certification	Optical Industry
research and development department managers	Hospitals and other healthcare facilities

Busines fields of target visitors

Management
Engineering
Production
Maintenance & Technical Service
Marketing
Procurement
Planning
Research
Consulting

Record Participation – AUTOMATICA Shows Production of Tomorrow

- 34,500 visitors from more than 100 countries
- 731 exhibitors from 42 countries
- Great start of service robotics

**21st - 24th June 2016:
AUTOMATICA 2016, Munich (D)**

AUTOMATICA 2014 draws a positive balance: more than 10% more visitors and 7% more exhibitors. Trade Fair Deputy CEO Dr. Reinhard Pfeiffer „The growth rates and the high degree of satisfaction among exhibitors and visitors prove that AUTOMATICA has expanded its leading role.“ VDMA Robotik + Automation Managing Director Patrick Schwarzkopf added: „AUTOMATICA provides a decisive contribution to a change in production as an innovation platform. Trade visitors from the whole world learn what the future looks like at AUTOMATICA.“

Robotics and automation are becoming increasingly important globally

A total of 32% of the visitors came from foreign countries, an increase of more than 15%. „The motto of AUTOMATICA – „Optimize Your Production“ – is experiencing a boom throughout the whole world,“ Hans-Dieter Baumtrog explained, Chairman of the Board of VDMA Robotics + Automation. „It concerns the quality, safety and sustainability of products. Integrated assembly solutions, robotics and industrial machine vision are the key to success in this context! The increasing internationalization of AUTOMATICA is a clear indication of this development.“ Stefan Kapferer, Permanent State Secretary at the German Federal Ministry for Economic Affairs and Energy: „AUTOMATICA has once again demonstrated the outstanding position of Germany in robotics and automation.“

SPARC: 2.8 billion euros for European robotics

The role of the industry is becoming very clear on a European level. Neelie Kroes, Vice President of the European Commission, announced the world's largest civil robotics promotion program SPARC at AUTOMATICA 2014. With a total volume of 2.8 billion euros, Europe's leading position is to be expanded and consequently more than 240,000 jobs created. Ms. Kroes emphasized: „AUTOMATICA is a perfect opportunity to showcase the latest European robotics technology.“

Man and machine will work hand in hand in the future

Robotics and automation are reaching a new dimension with man-machine cooperation. Robots are handling work in the place of people that is monotonous, injurious to health and requires no special job skills. This makes workplaces more productive, flexible and ergonomic. AUTOMATICA also showed the enormous potential for small- and medium-sized firms in numerous examples.

Professional service robotics – a fantastic start

Marketable service robotics created a lot of interest. More than 60 companies, specialized in service robotics with B2B relation, exhibited the outstanding possibilities of intelligent service robots and components from the areas of medicine and nursing, inspection and maintenance as well as logistics. The Berlin-based company Argo Medical Technologies won the first Service Robotics Masters Start-up Award with its exoskeleton suit, which provides paraplegics with the possibility to walk again.

The fourth industrial revolution on the rise

The fourth industrial revolution has no longer been just a vision for quite some time. Trade fair visitors obtained information about the concrete effects of Industry 4.0 on

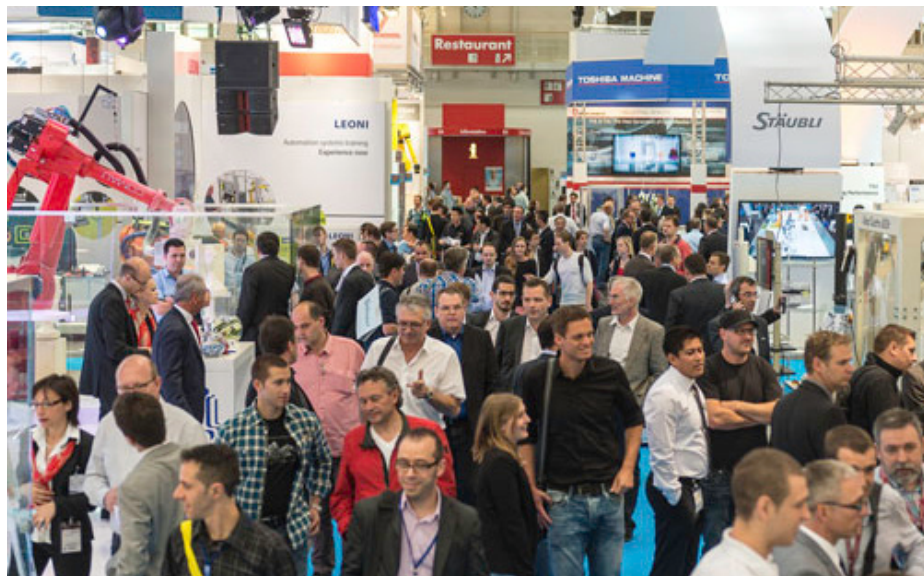
production in live demonstrations and during talks given by experts. „The realization of Industry 4.0 will determine our future, because we can only succeed in establishing a networked, resource-efficient and highly flexible form of doing business in this way,“ Mr. Kapferer explained.

Good mood among visitors and exhibitors

The range of offers at the trade fair ensured full halls and created a good mood among exhibitors and visitors. The independent market research institute tns infratest determined that 97% of the surveyed visitors found the completeness of the offer good to excellent, and 95% praised the good presence of market leaders. The feedback from exhibitors was correspondingly positive. The mood at the trade fair was good to excellent for 95% of the surveyed companies.

The next AUTOMATICA will take place in Munich from June 21 to 24, 2016.

Messe München GmbH
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Filling capacity, flexibility and the efficient use of resources through clever technology

Anuga FoodTec 2015: Spotlight on innovative beverage technology

The once classic boundaries between breweries and soft drinks manufacturers are becoming increasingly blurred. In recent years, the major breweries have developed into universal beverage suppliers. A further aspect is the increasing variety of packaging variants and materials. Nowadays, therefore, flexibility is just as important for a filling machine as its speed. New developments and innovative approaches are to be found in many areas, as Anuga FoodTec, the international supplier fair for the food and beverage industry, taking place in Cologne from 24-27 March 2015, will demonstrate.

In 2012, German drinks technology suppliers produced machinery worth 2.2 billion Euro. Including the strong demand for stretch blow-moulding machines for plastic containers, experts such as Volker Kronseder, Executive Board Chairman of mechanical engineering company Krone, estimate the industry's turnover here in Germany at around five billion Euro. Kronseder knows what he is talking about. Almost one bottle in every four opened worldwide has been filled using plant supplied by the Neutraubling-based company.

With an export ratio of more than 80 per cent, German beverage technology continues to flourish on the world market and can count on its customers' considerable appetite for investment in 2015 as well. An important driver are the burgeoning middle classes in the emerging countries of Asia and Latin America, where the demand for beverages is increasing in line with prosperity - and with it the need for filling machines. Where-

as in China the focus is on high continuous performance, the demand in the saturated European markets is for flexible plants, permitting quick and frequent product changeovers. They enable producers to serve niche markets efficiently. Short set-up times can only be achieved by electronically controlled machines. The plants are characterised by their high degree of automation and the fact that each component has its own autonomous power unit.

In the beverage industry, clever technology doesn't just ensure high standards of hygiene but also helps to husband resources. This is already evident in the details. For example in the question, how the beer gets into the bottle. Previously, carbon dioxide was the preferred means of removing oxygen from the bottle. The „balloon style filler“, on the other hand, dispenses with CO₂. A plastic balloon is introduced into the empty bottle by a filling valve and inflated, expelling the oxygen from the bottle. The beer flows into the bottle between the balloon and the bottle wall, thus once again deflating the balloon, which is then removed from the bottle. Whereas it used to take five seconds to fill a half litre bottle, the balloon technology performs the same task in one second.

It is above all premium products such as juices made of pieces of fruit or pulp that require premium technologies. To fill these as carefully as possible, it is advisable to separate the juice and the fruit content - for example using the dual-stream process. The trick is to have the juice and fruit pieces follow separate routes throughout the entire

product handling process up to the point of filling. That way each component receives the most appropriate treatment. Only in the bottle do the two components meet - blending to form a first class beverage.

The market the world over is moving towards still and alcohol-free beverages. And demand the world over is growing precisely for such beverages in PET containers, accounting for more than 40 per cent of drinks packaging. A trend with technological consequences because ever more beverage bottlers are opting to invest in a PET line. They are confronted in the process with the question of all questions: cold aseptic or hot filling? As before, cold aseptic is held to be the nec plus ultra, whether filling PET or glass containers. Contrary to hot filling, it is used at low temperatures. Beverage, container and closure are sterilised separately and come together under clean room conditions. This technique enables sensitive juices to be filled in a microbiologically safe and gentle process. Admittedly greater effort and expense is required to minimise the risk of recontamination.

This contrasts with hot filling, where beverage, bottle and closure are heated and made conservable together. Lower investment costs and the latest advances in hot filling are again making the competing process a contender for beverage bottlers. The logical consequence: new, flexible fillers lend themselves both to hot filling in PET and glass bottles and to the cold filling of still beverages. Coca-Cola has given itself this flexibility for its Surabaya production plant in the east of the Indonesian island of Java. The company fills both hotfill products using the hotfill technique as well as soft drinks using the cold technique in two virtually identically configured filling plants. The two plants together confer the opportunity to decide freely how much of which beverage to fill and when.

Koelnmesse GmbH D 50532 Köln

Entrematic participated in March 2014 at the R+T Trade show in China

R+T trade show success

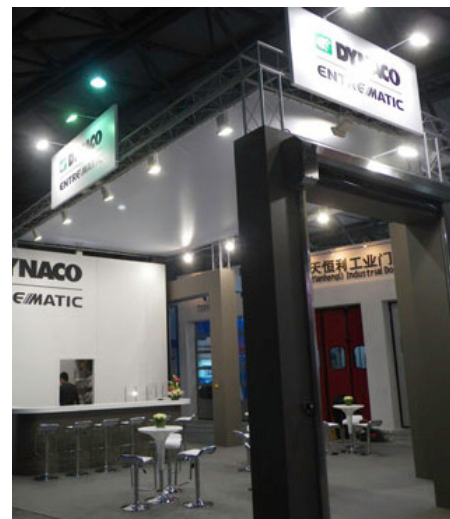
In a joint effort with the company's local partner JING JING, Entrematic participated at the R+T Trade show in China from March 25 to 27.

The event was very successful, with approximately 250 people visiting the booth and showing interest in high performance doors. Most visitors were from the warehousing and logistics industries, a minor quantity from the freezer industries.

About 80% of the visitors were intere-

sted in becoming an Entrematic distributor, the remaining visitors were suppliers or potential customers.

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Trade Show Duo meets rising demand for processed and packaged food and beverages in India

International PackTech India and drink technology India

25th - 27th September 2014
International Pack Tech India
and drink technology India,
Mumbai (India)

The trade fair duo drink technology India and International PackTech India meets the rising demand for processed and packaged food and beverages in India. Both trade shows, taking place from 25 September until 27 September in Mumbai, will present the complete value chain for food processing, liquid food, beverage and packaging technology.

One of the largest markets for packaged food in the world

The packaged food industry is the fifth largest sector in India. The Indian packaged food industry is worth 39.7 billion USD and is expected to reach 65.41 billion USD by 2020. With a sales volume of 30 million tonnes in 2013, India is one of the largest markets for packaged food in the world, just behind the US, China, Brazil and Mexico, and the second largest in Asia. But with a per capita consumption of 24 kg per year the Indian packaged food market is still at an early stage.

The fourth largest sales market for beverages in Asia

With a consumption of 22 billion litres of drinks (alcoholic drinks and soft drinks) India is the fourth largest sales market for beverages in Asia. Soft drinks are the largest segment. The Indian non-alcoholic beverage market was growing at an annual compound growth rate of 23 percent between 2010 and 2013 as more and more people are choosing packaged soft drinks. Within the soft drinks market bottled water is the largest category and the demand will double until 2017. Packaged juice shows also a strongly increasing demand. It is expected that the consumption of juice in India will rise by an annual compound growth rate of 20 percent until 2017 up to 1.2 billion litres.

Shifts in the Indian food and drinks industry

With more than 50 percent of the population younger than 25 years, increasing disposable incomes, a growing middle class, ongoing urbanization, changing lifestyles and a rising number of modern retail formats like supermarkets, the country enjoys highly favourable demographic patterns. These will enable shifts in the Indian food and drinks industry, as the young people are one of the key drivers in the demand of processed and hygienic packaged foods. Manufacturers are continuing to introduce products that increase convenience and reduce the time required to prepare meals. Products with additional ingredients - in easy to handle pa-

ckaging and convenient package sizes - will continue to gain popularity.

Premiumisation trend

The Indian middle class is growing rapidly and they simply love to buy. They are on the lookout for premium brands, especially for confectionery products like chocolate. But the premiumisation trend is not only noticeable in chocolates but also in biscuits. These trends are expected to continue even years from now.

Rural India provides growth opportunities

Rural India provides growth opportunities for packaged food and beverages. Almost 70 percent of the Indian population live in rural regions. The rural population benefits from investment in infrastructure and rising wages. Food processing companies are realizing the potential of rural India and are trying to expand their presence in these areas. They are launching their products in smaller pack sizes and at low price points to attract consumers. As India's soft drinks market is slowly reaching maturity in urban India, rural India is the new target for most of the manufacturer of soft drinks.

High growth rates for food and beverage expected

All these developments result in a continuously growing demand for packaged food and beverages in India. It is expected that the demand for packaged food in India will rise by an annual compound growth rate of 6 percent to reach an amount of 37 million tonnes by 2017. The beverage consumption will grow by an annual compound rate of 15 percent to reach an amount of 38 billion litres in 2017.

Growing demand for state-of-the art processing and packaging technology

To meet the rising demand for processed and packaged food and beverages, companies have to expand their production, and as a result the demand for state-of-the art pro-

cessing and packaging technology will grow. Export oriented manufacturers in particular favour high-tech solutions in order to meet the international standards and to be competitive.

An overview of India's beverage and food industry including statistics of machinery imports and exports is available at www.drinktechnology-india.com.

Successful trade show double feature: International PackTech India and drink technology India

drink technology India is being held for the third time in conjunction with International PackTech India. Both trade shows will take place under one roof in Mumbai from 25 September until 27 September, 2014, and present solutions for the international packaging, package labelling, processing, food and beverage industries. The organizers of this successful trade show double feature (Messe Düsseldorf for the International PackTech India and Messe München International for the drink technology India) expect about 260 exhibitors from all over the world and around 8,500 trade visitors from India and neighbouring regions.

Together these two strong partners present a unique platform. In 2014, both drink technology India and International PackTech India are going to intensify their portfolio by covering the food sector, too. Thereby the trade fair duo offers a top market place gathering two industries at one place: India's beverage and food as well as packaging industry.

VDMA: Conceptual Sponsor

The VDMA Fachverband Nahrungsmittelmaschinen und Verpackungsmaschinen (Food processing and packaging machinery association) is the conceptual sponsor of the drink technology India and the International PackTech India, and KHS, KRONES, PEN-TAIR, SIDEL and SIEMENS are official partners of the drink technology India.

Messe Düsseldorf GmbH
D 40001 Düsseldorf

BOY with triple impressive performance in Kielce, Poland



BOY participated at the PLASTPOL trade fair in Kielce (27th to 30th of May) by presenting two automatic injection moulding machines operating together with one injection unit. In the booth of the Polish BOY representative Wadim Plast Sp.j., the three machines from BOY, which specializes in injection moulding machines of up to 1,000 KN, demonstrated their capacity.

Compact cleanroom

Equipped with an efficient servo drive and antistatic painting, a model BOY 35 E (350 KN closing force) produced protective caps for a syringe for insulin injections. Using a laminar flow unit that is compliant with cleanroom class 7 (corresponding to ISO 14 644), the protective caps were directly packed into aseptic packaging following ejection from the 16-cavity mould. The production data was printed on the transparent bags to permit tracing and were then vacuum-sealed. It was possible to locate the packaging machine directly under the cantilevered clamping unit in a space-saving manner.

Ready for use production unit

A new Boy 60E (600 KN closing force) produced beer glasses from highly transparent polycarbonate. The plastic glasses were taken out of the tool using a four axes BOY SL 30 industrial robot and then placed on a conveyor belt. The visitors of the trade fair got fresh draught beer by pressing a button.

The automatic injection moulding machine, which is new to the BOY product range, was equipped with an increased closing force, the multi-patented multi-touch Procan ALPHA[®] 2 control and EconPlast. The newly developed optional plasticization sys-

tem uses up to 50% less energy for melting the plastics.

The whole production equipment including the automatic injection moulding machine, the industrial robot with integrated rotational function, conveyor belts and a protective body compliant with EC norms can be ordered in a ready to use state from BOY.

How singles become partners

The model BOY 2C XS – an injection unit for two-component or multi-component injection moulding offers the possibility of transforming a classical injection moulding machine into a 2K machine. The injection unit with integrated hydraulic drive and a Procan ALPHA[®] 2 control proposes a plasticization volume of up to 76,4 cm³ and attains injection pressures of up to 3,128 bars.

The model BOY 2C XS can be connected to different types of injection moulding machines with just a few steps. Owing to guideable rollers the machine can be easily transported and thus provides for flexible use. Furthermore the positioning and command of several BOY 2C XS can be carried out from the same basic machine.

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

Gains access to more than 2,000 square meters of additional MEMS cleanroom space

X-FAB expands MEMS manufacturing capabilities with two new dedicated MEMS Fabs

X-FAB Silicon Foundries today announced it has reached a major milestone in further expanding its MEMS manufacturing capabilities in two of its German locations, Erfurt and Itzehoe. Driven by increased customer demand for MEMS manufacturing services, the expansion includes two new dedicated MEMS fabs with cleanroom space totaling more than 2,000 m². MEMS devices manufactured at X-FAB include pressure sensors, micro-mirrors, microphones and microfluidic devices used in mobile, consumer, medical and automotive applications. Customers requiring CMOS and MEMS solutions also benefit from access to X-FAB's existing CMOS wafer fabrication facilities.

"These two expansions come at an exciting time for X-FAB as the MEMS industry continues to grow," said Dr. Peter Merz,

MEMS Business Unit Manager at X-FAB. "With the two new dedicated MEMS fabs, we are well prepared for volume MEMS manufacturing and able to meet the growing demand we see from our customers."

In Erfurt, X-FAB will access 1,300 m² of new manufacturing space dedicated for MEMS operations alongside its existing CMOS and MEMS semiconductor fabs on site. The new cleanroom will be used for high-volume manufacturing of 200mm MEMS and related processes with the first equipment to be installed in December this year.

In Itzehoe, X-FAB is moving its operation into a new state-of-the-art 1,000 m² fab commonly used with Fraunhofer ISIT, a renowned research institute for microelectronics and microsystems technology also located in Itzehoe. The new 200mm fab enables X-

FAB to increase manufacturing capacity and expand its process capabilities. In addition, X-FAB will expand its R&D cooperation with Fraunhofer Institute. The Itzehoe fab was officially opened on May 28, 2014 with the first tools already installed.

Dr. Merz added, "X-FAB offers its customers a great variety of CMOS processes for analog/mixed signal, high-voltage and power applications in unique combination with a wide range of MEMS process capabilities. Customers benefit from this one-stop-shopping approach by getting outstanding quality and high-volume manufacturing service. In addition, X-FAB simplifies the supply chain by supporting integration and interface challenges on all levels."

X-FAB Semiconductor Foundries AG D 99097 Erfurt

New particle counting system to analyse high quantities of samples

New particle counting system

Many laboratories are using Automatic Particle Counters to determine the solid contamination within their fluid samples. In most cases, standard sample systems are sufficient for everyday laboratory measurements. Difficulties arise when a high quantity of samples are required daily. Standard systems cannot cope with the sheer volume of samples, so laboratories analysing these very large numbers are forced to use multiple systems in parallel. This creates a higher cost for the companies and the numerous units use up a larger amount of space. For laboratories with high sample quantities, PAMAS has designed the new PAMAS AS3 autosampling system. The system incorporates an automatic measuring process, so that several hundred samples can be analysed per day. Compared to previous versions, the new PAMAS AS3 autosampler comprises of improved key features in relation to reliability, sample preparation, sample handling, flushing and sample dilution.



The newly developed PAMAS AS3 autosampling system analyses several hundred samples per day with unattended operation. (Picture: PAMAS)

The new autosampling system PAMAS AS3 is designed to provide sample analysis of several hundred samples per day, with unattended operation. The development of this new product was formed around the feedback PAMAS received from users of existing PAMAS autosamplers and also from the requirements of potential customers. Based on these requests, the new autosampler PAMAS AS3 now includes all the necessary requirements that have been brought forward from the users and offers new features in relation to reliability, sample preparation, sample handling, flushing and sample dilution.

Reliability

System reliability and trouble free operation are considered by staff operators as the two most important features for automatic particle counters. Global and uncommitted availability of components is a prerequisite for system reliability. The PAMAS AS3 system is built using high quality components that are readily available. A short delivery

time worldwide is essential to maintain the operation of the system. To ensure availability of parts, manufacturers of worldwide available parts were chosen. All service personnel maintaining these systems will require training at a PAMAS facility to ensure a competent service of the system can be maintained at any location, worldwide.

Sample preparation

The new PAMAS AS3 system includes a sample preparation probe that breaks all agglomerates in the fluid before analysis. The ultrasonic probe is located on the robot and prepares the subsequent sample whilst the current sample is being analysed. The sample preparation device is cleaned between samples to minimise cross contamination.

Sample handling

The new system has a XYZ stage, operating with samples on trays as these are the most widely used method in high quantity

laboratories. RFID (Radio Frequency Identification) or barcode systems can be used optionally to automatically identify the trays.

The system can be linked to an existing LIM (Laboratory Information Management) system. If the existing LIM system can forward sample IDs based on tray number and X/Y position within the tray, no individual sample identification procedure is necessary. If the samples carry RFID or barcode labels, samples can be identified with an attached reader. Sample identification enables correct handling of individual samples. A close link to the LIM system helps to request information about samples. It is possible to transfer special condition options for samples using the LIM system. For example the LIM system can be set up for "necessary dilution factor 9:1" or "average value of the last five results". The new autosampler PAMAS AS3 handles this information accordingly.

The system can be built to match existing trays. Large systems with several hundred samples to analyse, allow continuous unattended operation (three shifts within 24 hours).

The system is servo motor driven. This increases the speed of operation and reduces the noise level below that of stepper motors.

The system table has an integrated drain trap that collects any spillage. A drainage system can be connected to feed the spillage to a central collection system.

Flushing

The new PAMAS AS3 autosampling system is equipped with an intelligent flushing device which optimises the sequence of samples.

Sample dilution

Some samples may either be too dirty or too viscous or may contain undissolved additives or undissolved water. In this case, sample dilution with low viscous solvents helps to get reliable measuring results. The new system has an automatic dilution system that adds a programmable amount of solvent online to the raw sample. The system's inner structural design ensures that the solvent and sample fluid are thoroughly mixed.

Conclusion

The new PAMAS AS3 utilises current superior advanced PAMAS sensor technology and features all relevant requests for improvement that have been brought forward from users.

PAMAS Partikelmess- und Analysensysteme GmbH
D 71277 Rutesheim

Austrian sensor specialist demonstrates innovation

E+E Elektronik with multiple product innovations at Sensor+Test 2014

At this year's Sensor+Test, Austrian sensor specialist E+E Elektronik will be demonstrating their full innovative powers with a whole range of new products for industry, HVAC and OEM applications. The range of new developments includes sensors and transmitters for humidity, temperature, CO2, oxygen, flow, dew point and moisture in oil.

CO2 sensor module for OEM applications

The CO2 sensor module EE893 was developed especially for challenging OEM applications. Thanks to the measurement principle (NDIR dual wavelength procedure) based on infrared technology, ageing effects are compensated automatically. The module is also particularly insensitive to environmental influences. The multiple point CO2 and temperature adjustment ensures excellent measurement accuracy across the entire temperature working range. The CO2 measurements with a measurement range up to 10,000 ppm are available on the digital E2 interface. Thanks to smaller dimensions and low power consumption, the module is also suitable for use in battery-operated devices such as wireless transmitters, hand-helds or data loggers.



Figure 1: EE893 CO2 sensor module and EE820, EE850 CO2 transmitter.

CO2 transmitter for challenging tasks

The advantages of the NDIR dual wavelength procedure are also brought to bear in the new CO2 transmitters EE850 and EE820.

The CO2 and temperature transmitter EE850 is ideal for use in building technology and applications in harsh environments. The CO2 concentrations and temperature measurements are available on the analogue current or voltage outputs. As an option, the EE850 offers an additional passive temperature output.

The EE820 CO2 transmitter was also developed for especially demanding applications. The robust, functional housing with integrated special filter allows the EE820 to be used in contaminated environments, such as in agricultural operations, stalls, hatchers or greenhouses.

Miniature humidity sensor of the next generation

With the new HC801, E+E Elektronik presents its smallest humidity sensor for mass applications to date. The miniature sensor for high precision humidity measurement is manufactured in thin

layer technology based on silicon and is only 300 x 765 µm in size. Maximum reproducibility of the sensor characteristics and linearity across the entire humidity range, as with all humidity sensors in the HC series, further benefits the sensor element.

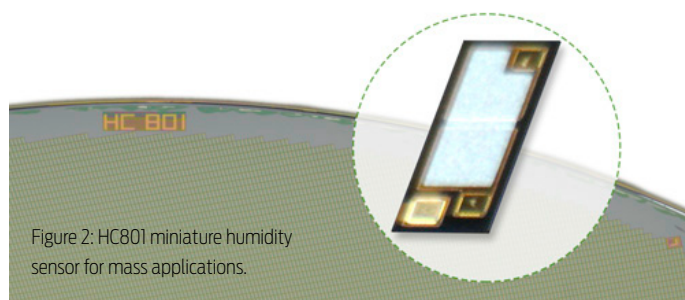


Figure 2: HC801 miniature humidity sensor for mass applications.

Flow sensor

The new VTQ is a thin layer sensor, combined with the latest transfer molding technology. The result is a compact, easy to assemble sensor element with high dirt resistance and outstanding reproducibility of the sensor characteristics. Other advantages of the sensor are the rapid response time, low angle dependence and a wider measurement range up to 20 m/s.

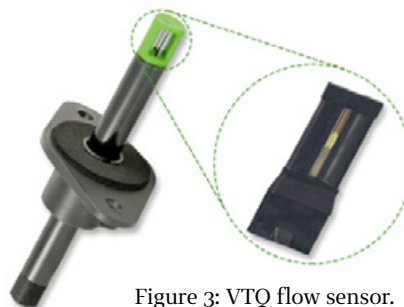


Figure 3: VTQ flow sensor.

Robust O2 transmitter

The robust O2 transmitter with zirconium dioxide sensor impresses with rapid response time and linear O2-dependence across a wide temperature range. The transmitter measures oxygen concentrations from 0 to 100 % and is suitable for temperatures up to 800 °C. Typical applications include the monitoring of industrial combustion processes, for example.



Figure 4: O2 transmitter.

E+E Elektronik mit vielen Produktneuheiten auf der Sensor+Test 2014

Temperature sensor series for the HVAC sector

The new E+E sensors are suitable for passive temperature measurement, primarily in HVAC and building technology. The product range includes a variety of models, such as a duct or immersion sensor (EE431). Also available are outdoor sensors (EE451), strap-on sensors (EE441), a cable sensor (EE461) or a model with remote probe (EE471).

An innovative production and mounting concept ensures a high protection class (IP65) and permits especially simple and rapid mounting of the sensors.



Figure 5: Temperature sensor series for HVAC.

Compact dew point transmitter

The EE354 miniature transmitter permits precise dew point measurement and is ideal for monitoring refrigeration driers and use in OEM applications. The small design, robust stainless steel housing and excellent long-term stability are further advantages of the transmitter. The measurement values are issued on an analogue 4-20 mA and a digital Modbus RTU output.

Figure 6: EE354 dew point transmitter.



Multi-functional hand-held meter with interchangeable sensing probes

A wide range of applications is offered by the multi-functional handheld unit Omniport 30. With various interchangeable sensing probes, up to 22 measurements can be recorded, such as relative humidity, temperature, air velocity and CO2 and the data stored via the



Figure 7: Omniport 30 hand-held meter with data logging.

data logger function. Operation is simple and intuitive via the large touchscreen display.

Figure 8: EE364 moisture in oil transmitter.



Moisture in oil transmitter

Precise information on the moisture in oil can save costs for unnecessary maintenance work and avoid expensive machine downtimes. The EE364 transmitter provides the option of continuous monitoring of transformer, lubrication, hydraulic and engine oils as well as diesel fuel. The measurements for water activity (aw), temperature (t) and water content (x) are output via two configurable 4-20 mA analogue outputs as well as a digital Modbus RTU interface. The compact design and the stainless steel housing permit space-saving integration in demanding applications.



Figure 9: EE210 humidity / temperature transmitter.

Humidity/temperature transmitter for challenging environments

The EE210 permits precise humidity and temperature measurement, even in difficult environmental conditions. This is ensured via the combination of completely encapsulated measurement electronics and the special E+E coating on the HCT01 humidity sensor. The EE210 also calculates further physical values such as dew point temperature, absolute humidity and mixing ratio. The transmitter is available as a wall or duct version, with an optional display. A model with remote sensing probe was also recently launched. Typical applications for the EE210 are in agriculture (stalls, hatcheries, incubators, greenhouses), in storage rooms, cooling chambers or indoor pools.

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Aseptic Preparation & Dispensing of Medicines Course, 7th-10th July 2014

Cherwell Confirm Continued Support for Aseptic Manufacturing Training



Cherwell Laboratories, specialists in products for process validation and environmental monitoring, have confirmed their continued support for the development of personnel within aseptic manufacturing. The Company will be exhibiting a selection of their prepared media, microbial air sampler and biological indicator products at the Aseptic Preparation and Dispensing of Medicines (APDM) Training Course, Leeds Trinity University.

Organised jointly by the NHS, Technical Specialist Education and Training (TSET) and the University of Leeds, the 4-day CPD accredited course, starting on 7th July 2014, is designed to extend the knowledge of personnel working in licensed and unlicensed aseptic units. Cherwell Laboratories will be available during the course exhibition, held on days two and three, to discuss how they can help with microbiological QA/QC and

monitoring requirements.

Andrew Barrow, Sales Manager, Cherwell Laboratories commented, "Aseptic production in NHS pharmacies is critical to patient safety and a key focus area for Cherwell. We are proud to continue to support this well respected course."

He added, "We believe in creating strong relationships with our customers whilst appreciating that in today's working environment time is limited. By supporting these events Cherwell can keep up-to-date with the latest developments within the industry and offer accessible and timely advice on how our products can meet specific requirements."

Cherwell's product range has developed over the years to meet changing customer and regulatory requirements. The Redipor® range of prepared microbiological media offers a vast selection of contact plates and

Petri dishes plus liquid media in a variety of formats. Despite significant growth in demand for Redipor products, Cherwell continues to provide the flexibility and customer-focus traditionally expected from a smaller manufacturer and are always happy to discuss specific requirements.

Cherwell also supply SAS microbial air samplers for a variety of environmental monitoring applications, including cleanroom, compressed air/gas and isolator monitoring. Supported by an experienced in-house engineering department, Cherwell's distinctive yellow air samplers offer a convenient, robust and reliable solution to environmental monitoring needs.

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