



Vetter further expands secondary packaging

Pharmaceutical service provider relies on expanded capacities, modular production and modern analytics

- Pens and autoinjectors make self-medication easier in the everyday life of patients
- Modular use of semi-automatic and fully automatic machines increases flexibility
- Vetter sets new standards with modern analytics and know-how



Secondary packaging line at the Ravensburg Sued site with an abundance of Vetter know-how and high-tech solutions. (Picture source: Vetter Pharma International GmbH)

Vetter is a leading solution provider of prefilled drug-delivery systems and a specialist for a wide range of packaging solutions. In addition to labelling, blister packing, cartoning as well as serialization, the company offers its customers further technically sophisticated packaging solutions such as the assembly of pens, auto-injectors and safety devices.

Because they facilitate self-medication for many users, the demand for these systems is continuously increasing. For example, diabetes patients benefit from the ease of handling and exact dosage during application. Vetter includes the production of these user-friendly and secure but complex packaging solu-

tions among its core competencies. Due to its many years of experience and expert knowledge of its staff, the company is at the position to meet the different requirements that authorities, customers and patients demand in a product. "Thanks to the modular use of manual, semi-automatic and fully automatic machines, we are able to individually package anything from small clinical to large commercial quantities and, therefore, react flexibly to changing customer structures and requirements", said Bernd Stauss, Senior Vice President Production and Engineering.

At the Ravensburg site, various syringes, cartridges and vials, some with highly complex requirements,

Vetter further expands secondary packaging

are currently packed on state-of-the-art lines. In addition to the existing area of approximately 6000 m², an additional 2900 m² will be available in a new building by 2020, enabling continued flexible planning of secondary packaging well into the future.

The extension also includes investments in modern testing and analysis methods. In addition to standard release and stability tests, e.g. syringes with a needle shield, the pharmaceutical service provider will be at the position to offer its customers even more extensive tests for autoinjectors beginning in March 2019. This development was achieved through the efforts of a team of specialized engineers that worked on the development of a testing machine, enabling application simulations and digital documentation on auto-injectors. Vetter is setting a new standard for testing machines for autoinjectors in the pharmaceutical industry. "State-

of-the-art technologies and extensive know-how are bundled at Vetter. In this way, we create real value for our customers – high quality, compliance with regulatory requirements and user-friendly administration systems", explained Wolfgang Weikmann, Senior Vice President Quality.

This high level of quality is well received by customers. The ever-increasing demand means that Vetter will continue to expand its offering for complete solutions in the future and contribute with user-friendly solutions for patient safety, as well as convenience and compliance.

Vetter Pharma International GmbH
D 88212 Ravensburg




Dear subscribers,

another year is coming to an end. For us, 2018 was a successful year and the good relationship with our customers, subscribers and readers as well as numerous praise of our work were pure joy.

In fact, there was a lot of work to do because the cleanroom industry is growing rapidly and changing constantly. The next milestone is already on the horizon: The **lounges in Karlsruhe** will open their doors on 5 February 2019. So it's high time to make a note of the date in your calendar and secure your free participation in the lectures and workshops with our code today.

The editorial team of Cleanroom online wishes you **a wonderful Christmas** season surrounded by your loved ones. And for 2019 we wish you and us much success. Ideally together.

Yours sincerely


Reinhold Schuster

LOUNGES 2018

Die Besucherregistrierung mit dem nachfolgendem Code ermöglicht Ihnen die **kostenlose Teilnahme** an den Vorträgen und Workshops sowie den Besuch der Ausstellung.

Code: rronline2019

Eine Registrierung als Teilnehmer ist Voraussetzung für den kostenlosen Besuch sowie die Nutzung aller Kommunikationsmöglichkeiten.

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Series production of Gx RTF Clearject plastic syringes started

Gerresheimer produces high quality COP syringes in Germany

The pharmaceuticals and health care specialist Gerresheimer has commenced with series production of the new Gx RTF Clearject syringes. The products of the high performance plastic COP (Cyclo Olefin Polymer) are used where especially sophisticated medications need to be packaged. The new Gx RTF Clearject syringe 1 ml long with cannula is the first plastic syringe developed and produced by Gerresheimer itself. It was presented from November 20 to 23, at Pharmtech & Ingredients in Moscow (Crocus Expo IEC) at the Gerresheimer booth A229 in hall 7 in Pavilion 2.

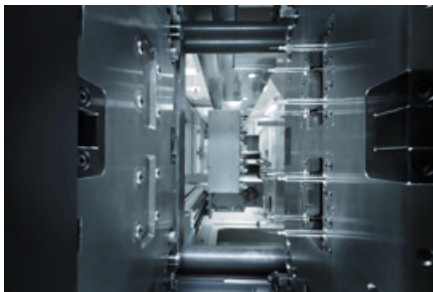
Gerresheimer brought together its comprehensive competence in glass production at the Bünde location and the expertise of its plastic specialist in the Technical Competence Center (TCC) Wackersdorf for the development and industrialization of the new syringe. The production facility was thus planned and built by the automation team of the Technical Competence Center; the know-how for the quality control and quality guidelines for primary packaging originates from the inspection specialists of the glass location Bünde, and

was adapted jointly to the specific requirements of plastic production. Production takes place pursuant to the especially high quality requirements for pharmaceutical primary packaging material corresponding to GMP. The new production facility is conceived in such a way that the entire processing chain from injection molding to finished RTF packaging is covered. A series of cameras were installed at various stations for quality control, with which all relevant geometrical parameters and cosmetic-visual defects are checked for each individual product.

Innovative medications mean strict requirements for their primary packaging. Especially biotechnologically manufactured active agents may not interact with the packaging, because this could mean undesirable effects for patients. Gx RTF ClearJect syringes offer especially low interaction potential. The material COP has a high pH tolerance, does not emit metal ions into the medication solution, and therefore causes no displacement of the pH value while in storage. The syringe is manufactured as an injection molding part in an 8-fold hot runner mold. The cannula is also thereby injected at the same time and does not need to

be retroactively glued in. Tungsten and glue residue is therefore eliminated with the Gx RTF ClearJect syringes. The precise geometry of the injection molding part reduces the dead volume in the syringe, leaving behind less of the expensive medication in the syringe. Also attractive is the increased safety for the end consumer. COP is particularly break-resistant, making it suitable for packaging aggressive or toxic materials.

The new Gerresheimer Gx RTF ClearJect COP syringe is available in the long 1 ml size with cannula. The design corresponds to ISO 11040-6. The first version of the syringe is equipped with a 27-gauge, 1/2-inch (12.7 mm), and thin-walled stainless-steel needle with three bevels. The syringes are siliconized with a precisely controlled amount of high-viscosity, and thus low-particle Dow Corning 360 MD (12,500 cSt) silicone oil, offering a comprehensive syringe system that completes the COP syringe body with plunger rods, plunger stoppers, finger flange, and closure systems. An economically efficient complete solution is achieved through the use of commercially available standard components.



The cannula is insert-molded during the injection molding procedure. The syringe is free of tungsten and glue.



The new Gx RTF Clearject plastic syringe.



Production in the clean room according to GMP Grade C of the pre-fillable plastic syringe with cannula.

Gerresheimer AG D 40468 Düsseldorf

Endress+Hauser expands manufacturing of temperature and system products

Company dedicates new production facility in Nesselwang, Germany

Endress+Hauser has invested more than 10.4 million euros in a new, state-of-the-art production facility at its location in Nesselwang, Germany. The 4,800-square-meter building contains new production and office space, in addition to technology and common rooms. With the expansion, the Endress+Hauser Group is making further investments in sustainable growth.

The expansion was driven by the growing demand for innovative temperature technology and system products, as well as the introduction of new product lines. “We are constantly investing in our centers of competence in order to develop persuasive solutions for our customers and to increase production efficiency,” said Matthias Altendorf, CEO of the Endress+Hauser Group, during the dedication ceremony, which was held on Friday 26 October 2018, in the presence of representatives from politics and business as well as employees.

In many processes, temperature is a measurement parameter with a major influence on product quality. “We will continue to expand and round out our temperature and system product portfolio so that we can be in a position to optimally serve our customers in the future as well. To do that, we need additional space for research and development, production, logistics and quality assurance, which this new building provides,” said Harald Hertweck, Managing Director of the Endress+Hauser center of competence for temperature measurement technology.

Sustainable expansion

The new building is an eye-catcher with an impressive, intelligent architecture featuring a sloping facade that offers protection against the sun, plus glass fronts that let in an abundance of light. The new building also boasts a sustainable energy concept, including a photovoltaic system installed on the roof that provides enough electricity to completely power the basic production load. E-bike charging stations further underscore the emphasis on sustainability.

While the building was being constructed, the production and logistics processes were also optimized and structured in accordance with Lean Principles and the One Piece Flow approach. This structure enables the center of competence to increase the individual responsibility of the employees, add more flexibility to the production process and optimally utilize the capacity of the machines and operational resources.

Center of competence for temperature measurement technology and system products

Endress+Hauser Wetzler, the Group’s center of competence for temperature measurement technology and system products, which is headquartered in Nesselwang, Germany,



Endress+Hauser dedicated a new production facility in Nesselwang, Germany, after investing more than 10 million euros in the expansion.

operates five additional production facilities in Pessano (Italy), Greenwood, Indiana (US), Suzhou (China), Aurangabad (India) and Benoni (South Africa). The company received several awards this year for the iT-HERM TrustSens, the world’s first self-calibrating thermometer. In addition to awards in France (Mesures, CFIA) and the Czech Republic (Zlatý Amper), Endress+Hauser was also the recipient of the HERMES AWARD, a renowned industry prize, in addition to the AMA Innovation Award at the SENSOR+TEST trade fair in Nuremberg, Germany.

Endress+Hauser AG CH 4153 Reinach BL 1



Inauguration in Nesselwang (from left): Managing Director of Endress+Hauser Wetzler, Klaus Endress, President of the Supervisory Board of the Endress+Hauser Group, Franz Josef Pschierer, Bavaria’s Minister of Economic Affairs, Franz Erhart, Mayor of Nesselwang, Matthias Altendorf, CEO of the Endress+Hauser Group, and Rainer Kühnel, Director Operations at Endress+Hauser Wetzler, cut the ribbon.



The 4,800-square-meter expansion offers additional production, office and meeting room space.

Ceramics Made of “Sand” from the Red Planet

TU Berlin scientists craft complex geometric shapes from simulated Martian soil

Researchers from the TU Berlin Chair of Ceramic Materials collaborated with the Federal Institute for Materials Research and Testing to produce complex components from simulated Martian soil for the first time, demonstrating the theoretical possibility of creating stable vessels like vases solely using resources from the red planet. Their results have been published in the open access journal “PLOS One.” Through their approach, the researchers aim to contribute to the research on the long-term exploration of Mars.

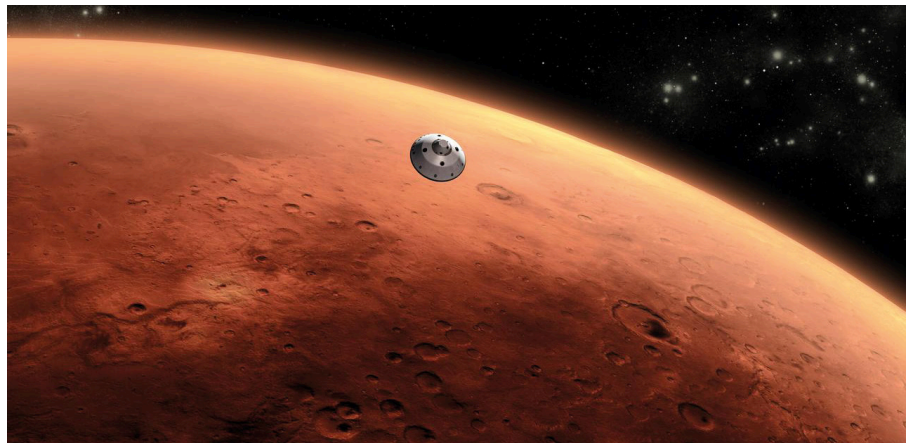
Ambitious goals: The American space agency NASA, together with its international partners, aims to send the first manned mission to Mars in the 2030s – a journey into the depths of space which will be closely followed by researchers worldwide. A team from the TU Chair of Ceramic Materials in the Institute of Material Science and Technology located in Faculty III - Process Sciences, is also undertaking experiments which focus on a potential trip to Mars.

Simulated Martian soil from volcanic earth enables the manufacture of complex, geometric molds that can be used as storage containers

For their publication “Towards the colonization of Mars by in-situ resource utilization: Slip cast ceramics from Martian soil simulant,” the scientists produced complex geometric shapes, such as rings and vases, using “JSC-Mars-1A,” a simulant of Martian soil. The material, modeled after Martian soil or regolith, is of volcanic origin, from the sides of the highest mountain in Hawaii, Mauna Kea. The materials were developed by the NASA Johnson Space Center and made available to the scientific community for so-called in-situ resource utilization, ISRU for short. Its properties simulate those of the Martian regolith.

Resource Utilization of Local Materials as a Foundation

Mars and Earth are between 56 and 401 million kilometers apart. It could take up to eight months to reach Mars, according to current estimates. “In the event of a stay on Mars, it will be important for astronauts to be able to manufacture their own products using local materials. This practice is called in-situ utilization and is the foundation of our trials,” explains David Karl. He and Franz Kamutzki are the project coordinators of the study. Both are research assistants in the team led by the head of Chair, Professor Aleksander Gurlo.



An artist rendering of the Mars. (© NASA)



Vases in different stages of production. (© TU Berlin/ David Karl)



Vases, rings, and tablets made from simulated Martian soil in various stages of firing. (© TU Berlin/David Karl)

“Our ‘Martian ceramic’ is composed of soil chemically similar to that of Mars. We ground the Martian simulant with just water, poured it into a cast, and fired it,” states Kamutzki, describing the approach. “We only used ‘Martian soil,’ plaster, water, and energy – all resources which are present on Mars or can be created.

The Process: Mix with Water, Grind, Fire

“In the beginning, we put the material through a number of preliminary processes: We heat-treated it and pre-ground and pre-sifted it, added organic additives in the form of dispersants and binding agents, and in the end, determined, that the con-

ceivably easiest version is the most stable,” says Karl. The scientists combined the Martian simulant with water in a ratio of 50:50 and ground it for 48 hours. The resulting slip was then poured into casts – like those for vases – and, after a short time, removed, air-dried, and fired at different temperatures ranging from 1000 to 1130 degrees Celsius. The result is ceramic parts which, depending on the firing temperature, show evidence of similar or even higher pressure resistance compared to porcelain.

“We were very surprised by the positive mechanic properties of our Martian ceramics – theoretically they are interesting for all applications, for which porcelain and earthenware are currently used: from dis-

Ceramics Made of “Sand” from the Red Planet

hes to technical building components or materials,” says Kamutzki, summarizing the significance of the experiments.

Visions of the Future: Fully Automatic Process Would Offer Possibility of Creating Building Parts with Flexible Geometry Through 3D Printing

In response to the question what purpose vases could have on Mars, the scientists explain: “In the conceptual phase of our project, we discussed at length which tools would be crucial for human colonization of Mars. In the end, we agreed on a geometric shape for our ‘Martian ceramics,’ which was produced, used, and left behind by all cultures in the history of human civilization and is still in use around the world today.”

The team also emphasizes that many other complex shapes could be produced using the process developed. The slip casting with plaster molds is suitable for the large-series production of items with similar geometry. Currently, the team is working on

new processes, in which the developed slip system is being processed through 3D printing. Theoretically, a remote-controlled or fully automatic process would offer the possibility of creating building parts with flexible geometry – even before humans set foot on Mars.

Publication

The project’s initial results were published in the open access journal “PLOS One”.

“Towards the colonization of Mars by in-situ resource utilization: Slip cast ceramics from Martian soil simulant”. David Karl, Franz Kamutzki, Andrea Zocca, Oliver Goerke, Jens Guenster, Aleksander Gurlo (2018): <https://doi.org/10.1371/journal.pone.0204025>

Technische Universität Berlin
D 10587 Berlin

Gerresheimer to offer the irradiation of primary plastic packaging

Gerresheimer is expanding its range of services to include surface finishing of plastic packaging for ophthalmology and rhinology products with irradiation. As part of this move, the company is drawing on partnerships with selected certified partners. Krzysztof Dabrowski, Vice President Sales Central/Eastern Europe, was giving a detailed presentation of this new service in his specialist talk at the Pharmtech Forum at 11:05 a.m. on November 22.

“We want to make life easier for our customers when it comes to procuring their dropper bottles and, by treating our products with gamma radiation, we are adding in an important work step before filling,” said Krzysztof Dabrowski, Vice President Sales Central/Eastern Europe. “To help us in this, we are relying on selected, recognized, and certified partners.” The chosen partner companies have the requisite certification in accordance with ISO standards 11137, 11737, and 13004.

Benefits

The benefits of this service speak for themselves: Gerresheimer is assuming responsibility for handling this work step from start to finish, including transport to the irradiation company, monitoring and inspecting its work, and delivering to the location specified by the customer. The inspection processes also involve physically and chemically testing the product characteristics after irradiation. Gerresheimer regulates the validation and revalidation of the entire process, helping to reduce costs for the customer.

Cleanroom production Gerresheimer’s range of ophthalmology and rhinology products encompasses bottles and dropper inserts made from low-density polyethylene (LDPE) with pump systems to match. Irradiation also ensures the products are germ-free. As a specialist in plastic packaging for the pharmaceutical industry, Gerresheimer offers a wide range of innovative packaging solutions for solid, liquid, and ophthalmological products. All of the company’s primary packaging for the pharmaceutical industry is produced in cleanrooms in ISO classes 7 and 8 at its plants in Vaerloese (Denmark) and Boleslawiec (Poland).



Gerresheimer is expanding its range of services to include surface finishing of plastic packaging for ophthalmology and rhinology products with irradiation.

Low germ level thanks to ISO-standard irradiation

The population of viable microorganisms on the surface of a product and/or packaging is called the bioburden. The bioburden is determined in accordance with ISO 11737. Raw materials, components, packaging, and medical products are all investigated in order to gather information about the germ composition and level of germ contamination before treatment. A stable bioburden guarantees a successful irradiation process.

Gerresheimer AG D 40468 Düsseldorf

Micro-Measurements Introduces Moisture-Resistant Protective Coating for Maximum Strain Gage Sensor Stability

Coating offers a wide temperature range and helps mitigate field installation failures

The Micro-Measurements® brand of Vishay Precision Group, Inc. (NYSE: VPG), industry experts in the design, development, and manufacture of resistive-foil sensors for high-precision strain, high-stress and force mechanism measurements, today introduced the Gagekote #1, an expansion of the Gagekote Series, a solvent-thinned (toluene) synthetic resin. The Gagekote #1 is ideal for applications in PCB testing, agriculture, civil engineering, automotive, stress analysis aviation/defense/aerospace, education, medical, Internet of Things (IOT), Robotics, Industry 4.0, consumer, Process monitoring, load cell manufacturer. Transportation, Energy, and smart manufacturing industries.

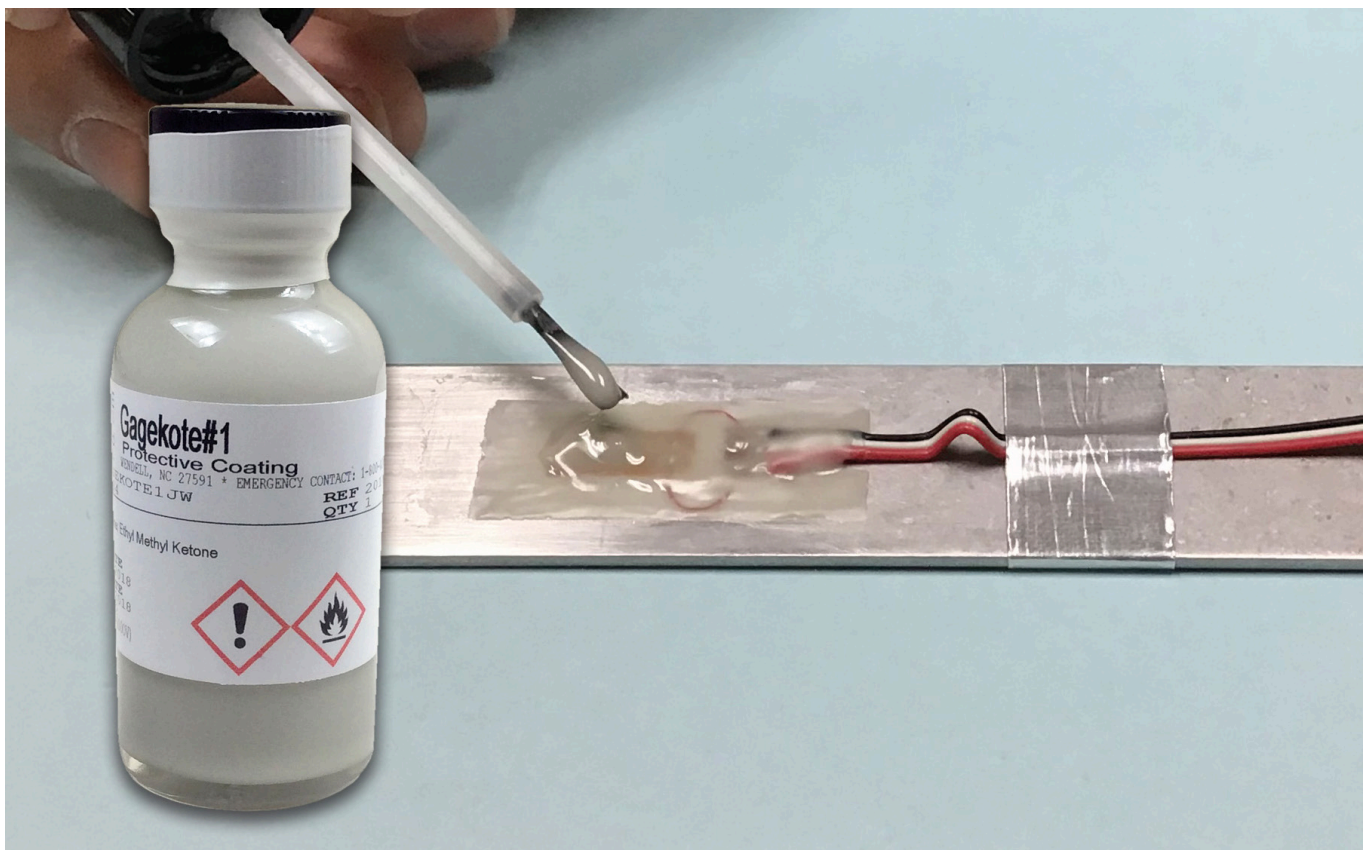
The Gagekote #1, often used as a pre-coat for Gagekote #5 and Epoxylite #813, is resistant to moisture, and offers a wide-operating temperature range that is easily removable after exposure to temperatures as high as 500F. It was designed to provide maximum stability of the strain gage sensor, as moisture is the most common cause of field installation failures.

“A good protective coating such as the Gagekote #1 not only seals the strain gage installation from moisture, but also seals in any moisture in the area at the time of coating application,” said Yuval Hernik, Sr. Director of Sales and Marketing. “In order to provide maximum stability in high-moisture environments, the gage installation should be warmed until all moisture is removed prior

to applying the protective coating. Next, the Gagekote #1 coating should be immediately applied after gage and leadwire installation to prevent moisture from collecting in the gage area. One of the advantages of the Gagekote #1, is that it provides a wide temperature range coating and can easily be removed after exposure to temperatures as high as 500F” (260°C)

Field installation of strain gages present stress analysts with several unique challenges, particularly when long-term measurements are required, and when massive structures or inclement weather are encountered. For example, strain gage sensor performance is easily degraded by the effects of moisture, chemical attack, or mechanical damage. As a result, strain gage sensors require varying degrees of protection, according to the severity of the environment in which they must operate. The Gagekote #1 provides maximum stability of the strain gage sensor through its protective coating that is immediately chemically stable and highly resistant to water-vapor transmission. The coating only protects against incidental mechanical damage, like minor objects lightly coming into contact with the installation, or very lightly dragging across it.

Vishay Precision Group, Inc.
PA 19355 Malvern
Vereinigte Staaten



Medical experts once again were “spoiled for choice” at MEDICA and COMPAMED



A scope of topics and offers that is unique worldwide – Digitalisation wave causes a flood of innovations

Once again, decision makers of the international healthcare industry were “spoiled for choice” when it came to the themes at the world’s largest medical trade fair MEDICA and the internationally leading supplier trade fair COMPAMED in Düsseldorf. On the four days of the fair, around 120,000 visitors (with an international share of approx. two thirds from around 155 countries) enjoyed an offer that was more extensive and international than ever before. The fair took place from 12 to 15 November 2018. 5,273 exhibitors from 66 countries and an international share of more than 80 percent mean a new record for MEDICA. COMPAMED also seamlessly continued its record run with 783 exhibitors from 40 states.

“Nowhere else in the world will you find the entire process chain of innovations for the development, manufacture and marketing of medical devices, products, instruments and high-tech solutions presented in such a seamless manner and broached in hundreds of speeches by renowned experts,” say Wolfram Diener, CEO of Messe Düsseldorf since 2018, impressed by the programmatic range. Diener is able to draw this comparison, as he held a leadership position at another trade fair host in the Asian business for many years. Here, he gained insight into markets, their structures and focus on innovation in various countries. “At MEDICA, visitors can see for themselves what is generally possible with regard to modern outpatient and clinical care and in which areas new processes and care models are being used in a promising way. These impulses are gaining importance, especially with regard to the German market. Service providers in this country are faced with ever growing price pressure. At the same time, they fortunately also benefit from an increasing orientation towards innovation and new technologies,” says Wolfram Diener, drawing on knowledge gained in numerous conversations with exhibitors.

Particularly with regard to one of the most significant trends of all, digital transformation, visitors were offered a lot of new information. A walk through the halls at MEDICA 2018 as well as participation in one of the roughly 1,000 presentations from the programme of the accompanying forums and conferences proved that the many innovations related to digitalisation not only offer good business perspectives to their providers, they also benefit doctors and particularly patients. “Benefits for patients are a more efficient use of medical personnel on the one hand and easier access to specialist know how on the other, for example when experts from neighbouring university hospitals or even from abroad are called in virtually,” emphasises Horst Giesen, Global Portfolio Director Health & Medical Technologies at Messe Düsseldorf.

MEDICA is the hotspot for start ups from around the world

At the moment, there is a clear development towards more digital health applications that are no longer based on expensive new hardware developments but are primarily software-driven. This development plays into the hands of large companies, but not just theirs. Start-ups around the world are also seizing their opportunity. For them, MEDICA has increasingly become a hot spot in the past years.

New start-ups gave presentations every day in the “MEDICA DISRUPT” initiative, held within the scope of the MEDICA CONNECTED HEALTHCARE FORUM and the MEDICA App COMPETITION (Hall 15). A total of over 50 start-ups stormed the stage to present solutions for everything from treating skin cancer and chronic conditions (affecting the heart and lungs, for example) to telemonitoring and tracking of vital signs and activity. Thrilling start-ups could also be found in the MEDICA START-UP PARK, at the Wearable Technologies Show (both in Hall 15) as well as at the joint booths, especially of France, Israel and Finland. Among the product innovations presented here were a smartphone ophthalmoscope to examine retinas and eyes as well as a smart pain patch that uses blue and red LED light to stimulate the wound healing process, to name a few examples. The developer team from “FibriCheck” in Belgium emerged victoriously from the App COMPETITION with a smartphone application based on artificial intelligence that recognises cardiac arrhythmias. All you have to do is scan one finger with a smartphone camera.

Programme highlights captivated the audience

The accompanying programme offered numerous highlights that focussed on the most important trends on the market and were met with an excellent response from the professional audience. Here, visitors could experience further enthralling examples of the use of artificial intelligence and see for themselves which sometimes breathtaking advances are already in the pipeline for the future. This became clear at the session on developments in the field of bionic technologies (for use in intelligent prosthetics) at the MEDICA CONNECTED HEALTH CARE FORUM, to name one example, and at the MEDICA HEALTH IT FORUM. Here, one highly frequented session focussed on the potential of artificial intelligence for diagnostics, for example.

Other highlights of MEDICA’s accompanying programme were MEDICA ACADEMY, a medical training event, the international DiMiMED conference for specialists from the military and catastrophe medicine sector, the MEDICA PHYSIO CONFERENCE and the MEDICA MEDICINE + SPORTS CONFERENCE for sports professionals. Among other topics, the focus this year here lay on corporate fitness, meaning prevention concepts to be implemented in companies, as well as the use of sport in paediatrics and adolescent medicine as a means of preventing chronic illnesses such as diabetes 2 or obesity.

Medical experts once again were “spoiled for choice” at MEDICA and COMPAMED

The 41st German Hospital Conference offered 2,150 participants a multitude of health politics and practice-oriented sessions, with several events dedicated to the topic of digitalisation here, as well. The most famous visitor was German Federal Minister of Health, Jens Spahn, who officially opened the Hospital Conference and praised clinics as the backbone of care in his speech.

Suppliers boost powerful products

In connection with MEDICA, COMPAMED was held for the 27th time. COMPAMED is a worldwide leading event for the supplier market in medical technology manufacturing. The companies and research institutes came to Halls 8a and 8b and showcased their high-tech solutions, thus presenting themselves as skilled partners for development and production in the medical technology industry. Once again, small and simultaneously powerful components proved a hot topic among the product innovations. These components are used in increasingly more compact devices and products and even in active implants, which count as the most sophisticated medical products in the world. Currently, 3D printing is also developing dynamically. For the first time, COMPAMED dedicated a one-day international conference to this topic.

18.11. - 21.11.2019: COMPAMED 2019, Düsseldorf (D)

Messe Düsseldorf GmbH
D 40001 Düsseldorf

Foto: Messe Düsseldorf, Constanze Tillmann



interplastica 2019 in Moscow continues on Course for Success



Strong German participation +++ Special 3D fab + print +++ lecture forum Polymer Plaza addresses Russian and international industry topics

interplastica, the 22nd International Trade Fair for Plastics and Rubber, to be held at the AO Expocenter in Krasnaja Presnja (Moscow) from 29 January to 1 February, continues to develop very positively.

After 650 exhibitors from 31 countries presented their ranges at the latest interplastica in January 2018, prospects are also excellent for 2019. There is growing evidence that next year's edition will post similarly good KPIs. After the official deadline for registrations in late September only some small stand spaces are still available and will be allocated until the end of November 2018. The demand in the raw materials segment is as strong as for machinery and equipment.

Registered exhibitors include the major suppliers from the plastics and packaging industries as well as specialised SMEs, longstanding participants and a strikingly high number of new exhibitors. As for the international attendance Germany, Austria, Italy and also China are particularly well represented. Furthermore, numerous companies from Turkey will take part in interplastica 2019.

The ranges displayed by exhibitors will be accompanied by a programme of technical side events. One of the highlights will be the special show 3D fab+print Russia in Hall 2.3, to be held concurrently with interplastica for the third time now. It focuses on the

fast growing areas of Additive Manufacturing/3D Printing. Both Russian and international experts will discuss the developments, opportunities and challenges of this young technology while exhibitors will showcase their innovative products and solutions.

Another major attraction for the international expert audience will be the Polymer Plaza in Hall 1. With lectures and discussions on raw materials production, application and processing this lecture forum proves an extremely valuable add-on feature for trade fair visitors. Focal themes will include sustainability along the value chain and environmental issues, to name but two.

Held in parallel with interplastica 2019 again will be upakovka – processing and packaging with more than 250 exhibitors, generating clear synergies. While interplastica occupies Halls 1, 2 and 8, upakovka will be held at the HalleForum. To the tune of 25,000 trade visitors are expected to attend the two trade fairs. Admission tickets to interplastica also grant access to upakovka and vice versa.

29th Jan.. - 01st Feb. 2019: interplastica 2019, Moskau (R)

Messe Düsseldorf GmbH
D 40001 Düsseldorf

K 2019: New technology as a motor for innovation



Special show and Science Campus address pioneering key issues of the polymer industry

Innovative materials and technology have been at the heart of all presentations staged at the K trade show in Düsseldorf, the international flagship fair for the plastics and rubber industry. K 2019, which will take place between 16 and 23 October 2019, will also revolve around the key issues of circular economy, resource conservation and digitisation, all of which will be addressed at exhibition stands and by the accompanying programme.

The special show, traditionally hosted alongside K 2019 under the known title of “Plastics shape the Future”, will illustrate how plastics can have a sustainable impact on our future, which developments have emerged today and which visions have the potential of becoming reality tomorrow. Centred on several topics, the seven-day event will offer expert discussions, kick-off speeches, entertaining presentations and exciting experiments. Explorations of economic and ecological aspects will also tackle problematic issues and provide solutions for discussion. The special show is a project that was initiated by the German plastics industry under the aegis of PlasticsEurope Deutschland e.V. and Messe Düsseldorf. “Plastics shape the future” promises to provide insights and previews for exhibitors and visitors of K 2019 as well as for the media and the interested public.

The Science Campus K 2019 open platform encourages an active discourse between research and the industry. It also provides exhibitors and visitors with an opportunity to gain a comprehensive overview of recent scientific activities and results that affect the plastics and rubber industry and offers room for the exchange of information between universities and companies.

The Science Campus and special show programmes are carefully aligned. Both platforms address topics that will dominate the global development of the polymer market in the coming years. These key issues were defined by scientists and experts from the innovation circle of K 2019 as follows:

Digitalisation/ Plastics Industry 4.0

- Platform economy
- Value-added networks

Plastics for Sustainable Development

- Water management
- Renewable energies
- Circular economy (alternative raw materials etc.)

System integration: functionality through material, process and design

- New materials and additives
- Additive manufacturing
- Lightweight engineering
- Mobility (e-mobility)
- Bioplastics

We will also address the question of how to recruit new, young professionals for the industry, science and training. The key issues will be prepared by the participating universities, institutes, associations and funding agencies and induced and explored in presentations with the help of select exhibits.

A total of 3,000 international exhibitors are expected to attend K 2019 and show their latest developments from the areas of machinery and equipment for the plastics and rubber industry, raw materials and auxiliaries as well as semi-finished products, technical parts and reinforced plastics products. More than 200,000 visitors from all over the world are expected to flock to the exhibition centre in Düsseldorf to attend K 2019 from Wednesday, 16 October until Wednesday, 23 October, every day, from 10 am until 6.30 pm.

16th - 23rd October 2019: K2019, Duesseldorf (D)



Photo: Messe Düsseldorf, Constanze Tillmann

Lab Innovations 2018 confirmed as a major hit with visitors, exhibitors and speakers



More visitors than ever before and organisers announce dates for next year's show - 30-31st October 2019

Lab Innovations, the UK's only trade show dedicated to the laboratory industry, beat all records for the show, attracting 3,113 attendees - a 10% increase on the previous year. Underlying the headline number were significant increases in visitors involved in purchasing products and services. Overall, 79% of visitors were involved in the purchasing decision, with a 43% increase in lab managers, a 53% increase in lab technicians, and an impressive 125% increase in procurement managers. In addition, the number of scientists attending increased by 49%.

This dynamism was clear from the buzz of activity on the floor, with the statistics highlighting the enormous contribution that Lab Innovations makes to the business of laboratory science. Carolyn Jones, Lab Manager, University of Birmingham, summarised the event as "... well worth attending. I'd definitely recommend this to anyone with a budget to spend." These sentiments were supported by Jacqueline Balian, Head of Laboratory Technology Sector at GAMBICA, who said: "GAMBICA has exhibited at Lab Innovations since the start. We find it one of the most effective events for connecting our members with purchasers and distributors."

Living up to its name, Lab Innovations saw many new products, technologies and applications introduced to the UK by big brand laboratory names and smaller niche suppliers, including:

- Eppendorf's range of centrifuges, a large capacity biological shaker and CO2 incubator family
- HORIBA Scientific's award-winning Duetta absorbance/fluorescence spectrometer
- Elementar's UNICUBE and UNICUBE trace instruments for C and N measurements
- IKA's ROTAVISC series of highly functional viscometers
- Analytix's Milestone DMA-80 evo high-sensitivity mercury analyser
- Malvern Panalytical's Zetasizer® Pro and Ultra systems for measuring particle size, molecule size and zeta potential

- Haier Biomedical's intelligent, energy-reducing Salvum Ultimate freezers
- OHAUS's Pioneer PX analytical and precision balances
- Appleton Woods' appPETTE single channel variable pipettes
- Socorex's Qualitix® tipfill system for quick and easy filing of pipette racks

The Innovation Gallery Award, sponsored by Innovation DB, recognised these product innovations, with new exhibitor, CN Bio, winning the award for its PhysioMimix™ T1 organs-on-chips system.

At the core of the event's success was the mix of numerous laboratory products on show, along with networking and CPD-accredited educational opportunities in the four open-access seminar theatres: the Royal Society of Chemistry theatre; the Laboratory News Insights and Innovations theatre, sponsored by PerkinElmer; the new Cleanroom Hub area, in association with Cleanroom Technology; and the LIVE lab. Most presentations were packed, with 'standing room only' the order of the day, especially for the keynote speakers, broadcaster Maggie Philbin, highlighting 'Hidden Innovators', and science presenter Steve Mould, anecdotally discussing 'What it means to be a nerd'.

The Sustainable Laboratory area - another new feature for 2018 - proved to be a very important draw, with Jane Banks of The Science Council commenting: "Sustainability and innovation, which is at the heart of the laboratory industry, means that Lab Innovations is an event not to be missed". Ruth Wilson, a researcher from Proctor & Gamble particularly enjoyed the focus on sustainability, "which is very relevant to my company. I would love to come again and will definitely be passing on a lot of information now and recommending it to my colleagues for next year." Lab Innovations also presented a great opportunity to discover new options for improving efficiency in the lab, as Ralph Munonyedi, Microbiologist, Mondelez International, explained: "I've found many products that would be beneficial to use in our own laboratories to support efficiency savings - including time, costs and also energy."

Conceived to support the industry by introducing purchasers to innovative products and ideas, Lab Innovations 2018 proved highly successful, as many exhibitors emphasised: "I wouldn't miss it for the world," said Christopher Austin, Managing Director, IKA England. "IKA are proud supporters of Lab Innovations...we want to come here and show our innovations, we'll have more to show you next year, and we can't wait."

Stephen Dey, Operational Marketing Team Leader, Eppendorf UK, commented: "Lab Innovations is one of the only places where we get to see this breadth of customers. You get everyone here... and it gives us an opportunity to engage with a huge range of people." Joshua Chapman, Marketing Director, Scientific Laboratory Supplies concurred, saying that Lab Innovations "is very much a priority on the scientific calendar for us and it's one that we're cer-



Lab Innovations 2018 confirmed as a major hit with visitors, exhibitors and speakers

tainly going to be supporting for years to come.” New exhibitors were also impressed: “Lots of people placed pre-orders for our novel cell washer product,” said Amrat Imrali, of Imrali Inventions, with Jim Watts of Network Scientific, confirming that “It will definitely be worth coming back.”

Further underlining the significance of Lab Innovations for exhibitors, Simon Mortimer, Area Sales Manager, Veolia, observed: “It’s been a very busy and lively show. We’ve had a really enthusiastic response and have been talking pretty much non-stop with laboratory decision makers from organisations ranging from universities and pharma companies to the MoD and BP.” Sara Osman, EMEA Field Marketing Leader, PerkinElmer, summarised the exhibitor feedback saying: “We definitely made the right decision to attend and sponsor Lab Innovations as it has allowed us to meet new prospects, as well as catch up with many existing customers.

We will definitely be back next year.”

The organisers are already working on providing even more reasons to visit and exhibit in 2019, with Lab Innovations Divisional Director, Alison Willis, commenting: “This seventh year of Lab Innovations has beaten all expectations and we are really looking forward to Lab Innovations 2019. We have over 76% of our current exhibitor space rebooked already and we will be growing the show next year; it will be even bigger and better.”

30th - 31st October 2019: Lab Innovations, Birmingham (UK)

easyFairs UK Ltd
TW13QSTwickenham
Vereinigtes Königreich

Cherwell supports key national microbiology event

Pharmig annual conference highlights latest microbial updates and hot topics

Cherwell Laboratories specialist suppliers of environmental monitoring and process validation solutions, will once again be supporting Pharmig’s Annual Microbiology Conference. The conference, which will be held on 28th and 29th November, provides the opportunity for individuals within pharmaceutical and healthcare industries and the NHS, to keep up to date with the very latest topics in microbiology. Cherwell will be highlighting how its cleanroom microbiology product offering and expertise continues to facilitate such microbial related updates by assisting in the effective

management of controlled environments and processes.

Pharmig’s 26th Annual Conference, will be held at the Nottingham Belfry Hotel, in Nottingham, UK. This year, the topics covered have the broadest possible scope. These include up-to-date science, as well as the practical applications for manufacture and storage, ranging from pharmaceutical water for injection to Advanced Therapeutic Medicinal Products, and from quality by design to how to recover when it fails. In addition, there will be a fascinating mix of case studies, reviews of test methods and a presentation of the latest experiences and Annex 1 updates from the MHRA inspectors.

Andrew Barrow, Sales Manager, Cherwell Laboratories, who will be attending the event, commented, “There is a great deal of interesting content in this year’s programme. I am particularly keen to hear the results of Pharmig’s survey on the use and application of microbiological culture media which aims to benchmark industry best practice. I’m sure it will generate several questions from delegates and we will be ready to answer as many as possible.”

Members of Cherwell’s team of cleanroom microbiology experts will also be on hand at the event to offer delegates advice and discuss customer-specific requirements. With over 45 years of experience, Cherwell has built a reputation within the pharmaceutical and healthcare sciences industry as a provider of high-quality products to meet the specific requirements of environmental monitoring and process validation. The Cherwell range includes Redipor® prepared media; a selection of petri dishes, settle plates, bottled media, broth bags, vials and ampoules and SAS microbial air samplers.



Cherwell Laboratories Ltd
OX26 4XB BICESTER
Vereinigtes Königreich

Medical experts once again were “spoiled for choice” at MEDICA and COMPAMED



A scope of topics and offers that is unique worldwide – Digitalisation wave causes a flood of innovations

Once again, decision makers of the international healthcare industry were “spoiled for choice” when it came to the themes at the world’s largest medical trade fair MEDICA and the internationally leading supplier trade fair COMPAMED in Düsseldorf. On the four days of the fair, around 120,000 visitors (with an international share of approx. two thirds from around 155 countries) enjoyed an offer that was more extensive and international than ever before. The fair took place from 12 to 15 November 2018. 5,273 exhibitors from 66 countries and an international share of more than 80 percent mean a new record for MEDICA. COMPAMED also seamlessly continued its record run with 783 exhibitors from 40 states.

“Nowhere else in the world will you find the entire process chain of innovations for the development, manufacture and marketing of medical devices, products, instruments and high-tech solutions presented in such a seamless manner and broached in hundreds of speeches by renowned experts,” say Wolfram Diener, CEO of Messe Düsseldorf since 2018, impressed by the programmatic range. Diener is able to draw this comparison, as he held a leadership position at another trade fair host in the Asian business for many years. Here, he gained insight into markets, their structures and focus on innovation in various countries. “At MEDICA, visitors can see for themselves what is generally possible with regard to modern outpatient and clinical care and in which areas new processes and care models are being used in a promising way. These impulses are gaining importance, especially with regard to the German market. Service providers in this country are faced with ever growing price pressure. At the same time, they fortunately also benefit from an increasing orientation towards innovation and new technologies,” says Wolfram Diener, drawing on knowledge gained in numerous conversations with exhibitors.

Particularly with regard to one of the most significant trends of all, digital transformation, visitors were offered a lot of new information. A walk through the halls at MEDICA 2018 as well as participation in one of the roughly 1,000 presentations from the programme of the accompanying forums and conferences proved that the many innovations related to digitalisation not only offer good business perspectives to their providers, they also benefit doctors and particularly patients. “Benefits for patients are a more efficient use of medical personnel on the one hand and easier access to specialist know how on the other, for example when experts from neighbouring university hospitals or even from abroad are called in virtually,” emphasises Horst Giesen, Global Portfolio Director Health & Medical Technologies at Messe Düsseldorf.

MEDICA is the hotspot for start ups from around the world

At the moment, there is a clear development towards more digital health applications that are no longer based on expensive new hardware developments but are primarily software-driven. This development plays into the hands of large companies, but not just theirs. Start-ups around the world are also seizing their opportunity. For them, MEDICA has increasingly become a hot spot in the past years.

New start-ups gave presentations every day in the “MEDICA

DISRUPT” initiative, held within the scope of the MEDICA CONNECTED HEALTHCARE FORUM and the MEDICA App COMPETITION (Hall 15). A total of over 50 start-ups stormed the stage to present solutions for everything from treating skin cancer and chronic conditions (affecting the heart and lungs, for example) to telemonitoring and tracking of vital signs and activity. Thrilling start-ups could also be found in the MEDICA START-UP PARK, at the Wearable Technologies Show (both in Hall 15) as well as at the joint booths, especially of France, Israel and Finland. Among the product innovations presented here were a smartphone ophthalmoscope to examine retinas and eyes as well as a smart pain patch that uses blue and red LED light to stimulate the wound healing process, to name a few examples. The developer team from “Fibri-Check” in Belgium emerged victoriously from the App COMPETITION with a smartphone application based on artificial intelligence that recognises cardiac arrhythmias. All you have to do is scan one finger with a smartphone camera.

Programme highlights captivated the audience

The accompanying programme offered numerous highlights that focussed on the most important trends on the market and were met with an excellent response from the professional audience. Here, visitors could experience further enthralling examples of the use of artificial intelligence and see for themselves which sometimes breathtaking advances are already in the pipeline for the future. This became clear at the session on developments in the field of bionic technologies (for use in intelligent prosthetics) at the MEDICA CONNECTED HEALTH CARE FORUM, to name one example, and at the MEDICA HEALTH IT FORUM. Here, one highly frequented session focussed on the potential of artificial intelligence for diagnostics, for example.

Other highlights of MEDICA’s accompanying programme were MEDICA ACADEMY, a medical training event, the international DiMiMED conference for specialists from the military and catastrophe medicine sector, the MEDICA PHYSIO CONFERENCE and the MEDICA MEDICINE + SPORTS CONFERENCE for sports professionals. Among other topics, the focus this year here lay on corporate fitness, meaning prevention concepts to be implemented in companies, as well as the use of sport in paediatrics and adolescent medicine as a means of preventing chronic illnesses such as diabetes 2 or obesity.

The 41st German Hospital Conference offered 2,150 participants

Medical experts once again were “spoiled for choice” at MEDICA and COMPAMED

a multitude of health politics and practice-oriented sessions, with several events dedicated to the topic of digitalisation here, as well. The most famous visitor was German Federal Minister of Health, Jens Spahn, who officially opened the Hospital Conference and praised clinics as the backbone of care in his speech.

Suppliers boost powerful products

In connection with MEDICA, COMPAMED was held for the 27th time. COMPAMED is a worldwide leading event for the supplier market in medical technology manufacturing. The companies and research institutes came to Halls 8a and 8b and showcased their high-tech solutions, thus presenting themselves as skilled partners for development and production in the medical technology indus-

try. Once again, small and simultaneously powerful components proved a hot topic among the product innovations. These components are used in increasingly more compact devices and products and even in active implants, which count as the most sophisticated medical products in the world. Currently, 3D printing is also developing dynamically. For the first time, COMPAMED dedicated a one-day international conference to this topic.

18th - 21st November 2019: COMPAMED + MEDICA 2019, Duesseldorf (D)

Messe Düsseldorf GmbH
D 40001 Düsseldorf

Laminar Flow Sensor with Digital Output



The EE660 air flow sensor, ideal for monitoring very low air velocity, is now also available with an RS485 interface.

The EE660 from E+E Elektronik measures accurately very low air velocity. It is ideal for laminar flow monitoring and clean room applications. The transmitter is now also available with an RS485 interface.

The EE660 is suitable for accurate measurement of very low air velocity down to 0.15 m/s (30 ft/min). It features an E+E hot film sensing element, which offers excellent long-term stability and short response time. Furthermore, the sensing element is highly resistant to contamination and has a low angular dependency.

Additionally to current and voltage outputs, the device now features an RS485 interface with Modbus RTU or BACnet MS/TP protocol, which allows for easy integration into a bus system.

The EE660 is available for duct mount or with remote probe. The enclosure with

external mounting holes facilitates installation with closed cover.

The measured data is also available on the optional display. Backlight and 180° rot-

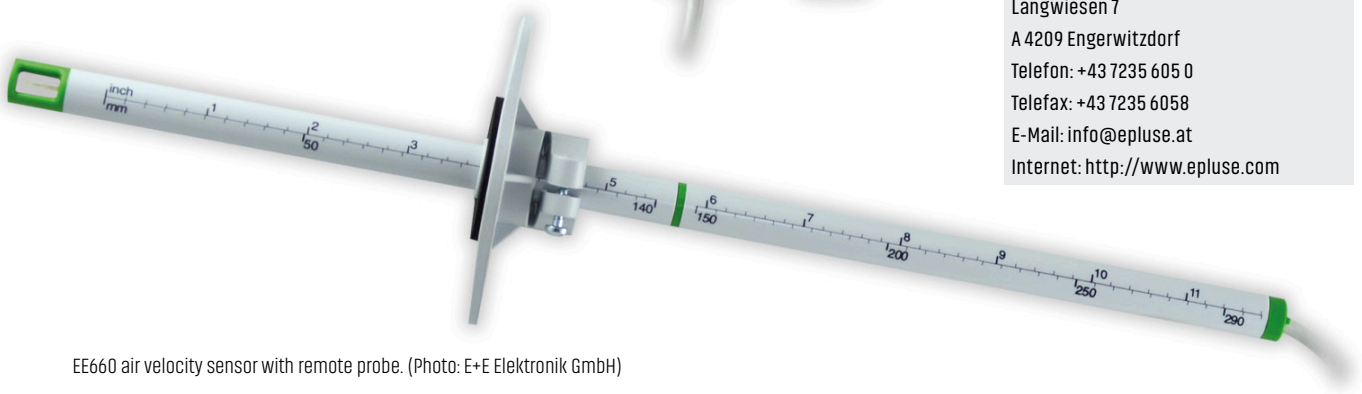
atability allow for comfortable reading independent of the mounting conditions.

The EE660 is user configurable with jumpers on the electronics board or via software. The adjustment and the display setup can be performed with an optional configuration adapter and the free EE-PCS Product Configuration Software.



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



EE660 air velocity sensor with remote probe. (Photo: E+E Elektronik GmbH)

Smart solutions for greater productivity, quality and cost effectiveness



ENGEL at Plast Eurasia 2018

Optimum efficiency, maximum performance and consistent quality: ENGEL, the Austrian injection moulding machine manufacturer and system expert, will demonstrate how flawless interplay between injection moulding machine, automation, and Industry 4.0 can reconcile these demands cost-effectively and sustainably at the Plast Eurasia 2018 trade fair from December 5th to 8th in Istanbul, Turkey. Live on site: the production of sophisticated medical parts on a tie-bar-less e-victory and large automotive components on a duo injection moulding machine as well as proven and new inject 4.0 products for smart digitalisation and networking of injection moulding processes.

Maximum integration with a minimal footprint

Highly integrated, compact production cells minimise the system footprint and increase area productivity. These aspects really pay off in the cleanroom. ENGEL further developed the stainless steel pipe distributor for the cavity specific handling of small injection moulding parts, so that the handling system now fits completely into the expanded safety gate of the injection moulding machine. At Plast Eurasia this extremely compact solution will be demonstrated using the production of needle holders for 1 ml safety syringes as an example.

The precision parts will be manufactured from polystyrene on an ENGEL e-victory 170/80 injection moulding machine equipped with a 16-cavity mould by Fostag Formenbau (Stein am Rhein, Switzerland), taken off the mould by an ENGEL viper 12 linear robot and transferred to the distribution system. To ensure batch traceability down to the individual cavity, the filigree parts will be packed in cavity-specific bags.



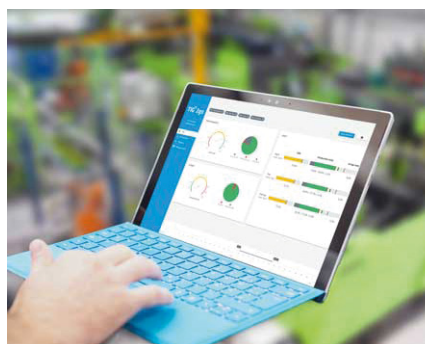
The production of filigree needle holders poses exacting requirements in terms of precision and process consistency. At Plast Eurasia, the cleanroom version of a self-optimising ENGEL e-victory injection moulding machine will be used for the purpose. (Picture: ENGEL)



The production of filigree needle holders poses exacting requirements in terms of precision and process consistency. At Plast Eurasia, the cleanroom version of a self-optimising ENGEL e-victory injection moulding machine will be used for the purpose. (Picture: ENGEL)



With their new injection units and thanks to ecodrive as a standard feature, the dual-platen injection moulding machines from the ENGEL duo series achieve even greater efficiency and precision. During Plast Eurasia, ENGEL will be producing car engine covers on a duo 3660/500 machine. (Picture: ENGEL)



The new TIG 2go dashboard solution makes it genuinely easy to get started in the world of MES. (Picture: TIG)

For this purpose, the 16 bags are hung in a cart located directly beneath the pipe distributor. Individual shots can be extracted for quality inspection purposes.

To ensure fully automated cleanroom operation, two carts are alternated in sequence, with a buffer system enabling the automated exchange during on-going production. All the peripherals for this are integrated into the CC300 control unit of the injection moulding machine. Thanks to shared data storage, the CC300 can precisely coordinate the movements of the machine and the robot with each other, thus optimising overall efficiency. On top of this, the robot paths are especially short due to the tie-bar-less clamping unit of the e-victory machine. Both of these factors contribute to the short cycle times of six seconds in this application.

So that the machine can also be flexibly used for other products, ENGEL designed the pipe distributor and the bag-packing carts as fixed units. These can be easily moved back and forth, ensuring full accessibility of the mould area. In contrast to many other systems in the market, all com-



Compact integration: The pipe distributor by ENGEL fits inside the machine's safety guard. (Picture: ENGEL)

Smart solutions for greater productivity, quality and cost effectiveness

ponents in contact with the product in ENGEL's pipe distributor are made of stainless steel. This helps to ensure low particle load in the cleanroom.

Intelligent assistance for a maximum of good parts

With a shot weight of only 0.08 g and varying wall thicknesses, the filigree needle holders require extremely precise process control. Since fluctuations in the melt volume would immediately lead to rejects, ENGEL will be using the iQ weight control software at Plast Eurasia. The assistance system from ENGEL's inject 4.0 program, analyses the pressure profile in real time during the injection process, and compares measured values with a reference cycle. For every shot, the injection profile, switchover



The iQ weight control intelligent assistance system compensates for process fluctuations before rejects are produced. (Picture: ENGEL)

point and the holding pressure profile are automatically adapted to current conditions and the injected melt volume is kept consistent throughout the production operation. In this way rejects are proactively prevented.

The self-optimising injection moulding machine is an essential feature of the smart factory, which is the objective of Industry 4.0. Under the inject 4.0 name, ENGEL already offers a wide range of mature and multiply practice-proven products and solutions for digitalisation and connectivity in injection moulding production, providing immediate and substantial benefits, both stand-alone and in the framework of a higher-level digitalisation strategy.

A further assistance system presented by ENGEL at Plast Eurasia is iQ clamp control, which determines and automatically adjusts the optimum clamping force on the basis of mould breathing. Too little mould breathing due to a too high clamping force prevents sufficient mould venting and can lead to burners. On the other hand, excessive mould breathing or too little clamping force may lead to overfilled cavities, resulting in flash formation. Both risks can be ruled out with the help of iQ clamp control. The system exclusively relies on standard sensors in the injection moulding machine for this purpose.

ecodrive as standard for significantly more energy efficiency

With their new injection units and thanks to ecodrive as a standard feature,

the dual-platen injection moulding machines in the ENGEL duo series achieve even greater efficiency and precision. ENGEL will present proof of this at Plast Eurasia. Car engine covers will be produced from fibre-reinforced polypropylene on an automated duo 3660/500 with a clamping force of 5,000 kN.

The temperature and pressure control in the barrel have been further optimised through the development of the new injection units. In addition, special attention has been paid to traverse temperature control. The temperature control range was enlarged to safely rule out clumping in the feed zone and absorption of moisture across a wider range of materials. The new concept minimises energy losses both during heating and cooling of the feed through.

The ENGEL servo-hydraulic ecodrive, which has been tried and trusted for many years, is now part of the standard package of the duo machines, thus significantly reducing energy requirements in production. The key to high energy efficiency here lies in demand-driven pump capacity. When a machine is idle, for example, during cooling phases, the engines close down and consume zero energy. The positive side effects are that machine operation is far quieter while the hydraulic oil heats up less, thus reducing the cooling overhead.

smart production: new solutions for newcomers and advanced users

ENGEL is dedicating its Expert Corner to the subject of smart production at Plast Eurasia. The focus is on TIG authentig, the MES of ENGEL subsidiary TIG (Rankweil, Austria). Tailored for the specific requirements of the injection moulding industry, the Manufacturing Execution System ensures transparency in order to, for example, utilise the total capacity of the available machinery or correlate productivity indicators and economic objectives. The new products that TIG will be presenting for the first time during the trade fair in Turkey include the TIG 2go dashboard solution, which is particularly suitable for entering the MES world, and the TIG big data high-performance analysis platform for networking globally machinery in a central cockpit.



With their new injection units and thanks to ecodrive as a standard feature, the dual-platen injection moulding machines from the ENGEL duo series achieve even greater efficiency and precision. During Plast Eurasia, ENGEL will be producing car engine covers on a duo 3660/500 machine. (Picture: ENGEL)

Visitor Registration for upakovka 2019 Starts



Process, packaging and beverage technology are the main focuses of the Russian trade fair; considerable growth in the packaging sector

Starting immediately, visitors can register for upakovka 2019 free of cost under www.upakovka-tradefair.com. The most important Russian trade fair of the packaging industry and the related processing industry takes place at the AO Expocentre Krasnaja Presnja exhibition centre in Moscow from 29 January to 1 February, 2019.

After a positive trend with a corresponding increase in visitors to last year's fair was already noted at the beginning of this year, early signs for 2019 are promising once more: After cautious consumption during the years of recession, Russian consumers are now increasingly reaching for high-quality packaged foods again. The sale of soft drinks is also rising. At the same time, Russia is resolutely continuing its policy of import substitution. Thanks to state support and subsidies, the percentage of locally produced products has increased. For the further processing of these products, Russian and international companies are unabatedly investing in the development and

expansion of their local production capacities, boosting the demand for packaging, processing and bottling/filling technology in the process.

Wide range from technology to packaging

The upakovka trade fair exhibits promising products and solutions from the entire value chain for the target groups of food, beverages, confectionery products and baked goods, pharmaceuticals, cosmetics, non-food consumer goods and industrial goods with a focus on processing and packaging technology, whereby the packaging part of the upcoming event is once again considerably expanding in scope. The increased alignment towards the pharmaceutical sector due to the partnership with the Association of Pharmaceutical Packaging Manufacturers (APFU) is also new in 2019. APFU represents the interests of leading Russian manufacturers of pharmaceutical packaging. At upakovka, pharmaceutical companies not only find solutions for solid products, but also for liquid medications. In addition to beverage bottling technology, filling technology for cosmetics and chemicals is part of the offerings of exhibitors such as KHS, Krones, Sidel and SMI. Companies that are taking part within the scope of the official German delegation also include global players such as Fawema, KBA, Theegarten-Pactec, Sollich and Thyssenkrupp Rasselstein. Added to this group are individual exhibitors such as Rovema, AUER Packaging, OMAG Srl, SIPA, CFT Group and OMAS Tecnosistemi. Various companies of the "Processing & Packaging - The High Tech Italian Way" network and members of the Italian mechanical engineering association UCIMA will also be represented at upakovka 2019. The Russian exhibitors include Danaflex-Nano, Zolotoy Shar Group, Russkaya Trapeza and Robotek Production Company.

"Innovationparc" special topic considerably expanded

Since upakovka has been organised under the aegis of the interpack alliance, the "innovationparc" special topic adapted by interpack in Düsseldorf will play an important role in Moscow. After the lively interest of the last two years, the forum programme of innovationparc will take place in parallel on two stages at upakovka 2019. In this way, visitors can obtain even more information on the trending topics of the industry throughout the duration of the trade fair. Focuses will include "Digital Innovation for Packaging & Labelling," "Packaging Design," "Recycling and Packaging Waste" and, for the first time, "Pharmaceutical Packaging and Labelling." The latter is of particular interest to affected companies due to new legal regulations. In addition, a block will once again be provided on the topic of SAVE FOOD in cooperation with the Food and Agriculture Organization (FAO). The partners of innovationparc are the National Packaging Confederation (NCPack), the Verband Deutscher Maschinen und Anlagenbau (VDMA), the Global Association for Marketing at Retail (POPAl), the Russian Branding Companies Association (RBCA) and the Russian trade journal Tara i Upakovka.

In total, about 850 companies will have exhibits at upakovka and the parallel trade fair interplastica - International Trade Fair Plastics and Rubber. upakovka will once again take place in the Forum hall, one of the largest on the trade fair grounds.

29th January - 01st February 2019: upakovka 2019, Moskau (R)

Messe Düsseldorf GmbH
D 40001 Düsseldorf



A Convincing Indian Trade Fair Quartet



Broad International Range of Exhibitors at pacprocess India, indiapack, food pex India and the concurrent drink technology India

The interpack alliance package of trade fairs pacprocess India, indiapack and food pex India, along with the concurrent event drink technology India organised by Messe München, met with a very good response at its first event at the Mumbai location from 24 to 26 October 2018. This concept of presenting content-related trade fairs for the packaging sector and affiliated process industry (interpack alliance-Messen) and the theme of drinks technology for dairy and liquid food (drink technology India, Messe München) made for satisfied faces among the participating companies. After last year's premiere at the alternate venue in New Delhi, exhibitor participation at the Mumbai location at the Bombay Convention & Exhibition Centre (BCEC) has once again seen a considerable rise with 343 companies from 16 countries on some 16,500 m². Exhibitors included global players like Multivac, IMA, Ronchi, Clevertex, Cama, Makro Labelling, Bizerba, Constantia Flexibles and Huthamaki. Furthermore, the Italian industry made a strong appearance with the Italian Packaging Machinery Manufacturers' Association UCIMA, the Italian Trade Agency as well as the joint stand "The Italian High-Tech Way". Running concurrently with the trade fairs was a conference held at the Courtyard Marriott Hotel entitled "Future of Sustainable FMCG & Food Packaging" attended by international speakers.

"With its 1.3b inhabitants and an until now relatively low proportion of packaged foodstuffs and other goods India is a very interesting market for the sector. By offering the interpack alliance on the sub-continent we give companies an ideal platform to build their position on this market and benefit from future developments directly," commented Bernd Jablonowski, Global Portfolio Director of Processing & Packaging at Messe Düsseldorf.

India is the third largest market worldwide for packaged foodstuffs with a turnover of 48 m tonnes in 2017. A growing middle class, rising incomes, progressing urbanisation and the continuing spread of modern trading structures like supermarkets are all driving demand for packaged foodstuffs, especially convenience products. British market research firm Euromonitor estimates that sales of packaged food here will rise by 61% to 76 m tonnes by 2022.

To satisfy the demand for processed and packaged foods com-

panies have to develop their production capacities. This means demand for state-of-the-art process and packaging technologies will rise. Export-oriented manufacturers, in particular, favour high-tech solutions to meet international standards and be suitably competitive.

"German technology is in great demand in India – this is something that was highlighted again here in Mumbai this year. As ever, German companies are among the leading suppliers of automated processing and packaging technology in India," commented Vera Fritsche, speaker at the Food Processing and Packaging Machinery Association of the German Engineering Federation (VDMA). Last year they exported machinery and equipment to India worth Euro 124 m.

High-tech equipment also came care of such Italian companies as Ronchi Mario S.p.A.. They presented the EXACTA/R 12/6 as an Indian premiere, their latest machine for applying lids to product packaging from the pharmaceutical, cosmetics, chemical and food industries. This machine serves as an example for the general trends in the industry: flexibility in application, quick format change and simple cleaning.

pacprocess India, indiapack and food pex India are held on an annual basis in combination with drink technology India care of Messe München. This combination of four trade fairs reflects under one roof themes like packaging and related processes (pacprocess India), packaging materials or packaging aids as well as machinery and technology for the production of packaging materials and packaging aids (indiapack), food and confectionery processing and packaging (food pex India) as well as drinks technology, dairy and liquid food together with the associated packaging industry (drink technology India) – a combination that is leading in the region. After New Delhi in 2017 and Mumbai this year the event will be held again in New Delhi next time. The trade fair quartet alternates between these two venues.



05th - 07th December 2019: indiapack packprocess, New Delhi (Indien)

POWTECH launches new “Networking Campus” think tank in 2019



09th - 11th April 2019: POWTECH, Nuremberg (D)

POWTECH 2019 will see the premiere of the Networking Campus, the new POWTECH think tank for the technologies and markets of the future. The Networking Campus is a communication hub and discussion platform for young researchers, start-ups and developers. The heart of the campus is an open presentation stage, where participants can get involved in an interactive programme based on the BarCamp format. In brief presentations, workshops and discussions, with a research poster or a stand at the adjacent table-top exhibition, all participants offer insights into the future of modern bulk solids and particle technology.

“From 2019, ‘Generation Future’ will gather at the Networking Campus. Innovative solutions for the processing industries are part of POWTECH’s DNA. Through the Networking Campus we are now creating the missing link between process engineering and the disruptive technologies of the future that are currently turning industry and daily life upside down!” says Beate Fischer, Director POWTECH.

Be part of the conversation, do some brainstorming and think future

Exhibitors, networking campus participants and trade visitors can all contribute on the moderated presentation stage. The programme is created on a daily basis. Anyone can submit a presentation, workshop or TED-style talk up until check-in and start of the BarCamp, i.e. the presentation series. Interaction and dialogue are what it’s all about. Thematically, the Networking Campus will focus on “Future Markets” and “Future Technologies” and there will be BarCamps on the following six topics:

Future Markets

- Energy storage and energy converters
- Closed-loop economy
- Additive Manufacturing

Future Technologies

- Digitalisation / Digital Transformation in the bulk solids segment
- Human and cobot
- Virtual, Augmented, Mixed Reality: Opportunities and limitations in bulk solids operations

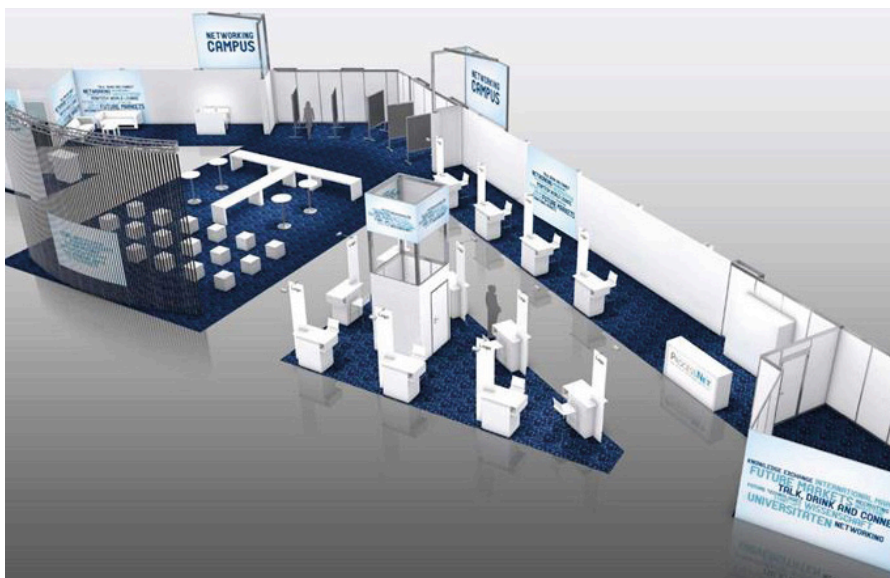
As of now, start-ups and research establishments can register for a table-top in the exhibition area of the Networking Campus at www.powtech.de/networking-campus. Act quickly because places are strictly limited! All POWTECH participants can submit their

ideas for presentations.

A jobs board with interview room for ad-hoc interviews and the Dechema and VDI-GVC ProcessNet Café are welcome additions to the Networking Campus. Make contacts, improve your knowledge and enjoy exploring ground-breaking topics – the Networking Campus offers all this and more.

Technology and expertise in six exhibition halls

At POWTECH, two other forums provide sustenance for knowledge-hungry powder and bulk solids experts. In Hall 2, the Expert Forum provides the platform for a specialist programme focusing on food and chemicals. In Hall 3, pharmaceutical experts gather at the Pharma.Manufacturing.Excellence Forum, where they can look forward to a high-calibre international programme of presentations by the International Association for Pharmaceutical Technology (APV). The international PARTEC Congress for Particle Technology will run parallel to POWTECH 2019. More than 500 delegates are expected at the event, which is sponsored by the VDI Association of Process and Chemical Engineering (VDI-GVC). For POWTECH itself, more than 23,000 square metres of display area have already been booked at this point in time. In six halls, visitors will experience the latest in process engineering and see hundreds of systems in live operation. The leading international fair for the processing, analysis and handling of powder and bulk solids will run from 9 to 11 April 2019 in Nuremberg. It is the meeting place for experts in the powder and bulk solids processing industries, from food, pharmaceuticals and chemicals to the pit and quarry segment, ceramics, glass and recycling.



New at POWTECH 2019: the Networking Campus

Record attendance at INDOPLAS, indopack and indoprint



Strong international presence, more technology on display and local visitors all on the rise

- **24,918 trade visitors from Indonesia and around the world**
- **360 exhibitors from 21 countries showcased best-in-industry solutions**
- **well-attended industry seminars and presentations**

The Indonesian International Plastics, Packaging and Printing Exhibitions, INDOPLAS, indopack and indoprint, welcomed 24,918 trade visitors from 31 countries, when it closed its door on a highly positive note on 22 September at Jakarta International Expo, Kemayoran, Indonesia. This represented a 10 per cent increase over the last edition in 2016. The predominantly local visitors came from diverse industries such as automotive and transportation, building and construction, chemical, food and beverage, graphic arts and printing houses, retail, pharmaceutical and more.

The four-day exhibition that bridges the synergistic industries of plastic, packaging and printing at one central location, provided a one-stop platform serving the entire end-to-end supply chain for local and international companies to promote their businesses. Commenting on the benefits of the co-location of these exhibitions was Aegis Packaging Pte. Ltd. from indopack: “We were overwhelmed by the response that we received at the exhibition. We managed to gather a number of important leads and secured several business offers for a more in-depth demonstration of our machines. The quality of visitors has been very relevant and being located with INDOPLAS, we get to enjoy visitors from both the packaging and plastics industries at the same time,” said Mr. Andrew Ong, its Managing Director.

INDOPLAS, indopack and indoprint 2018 spanned two halls and over 15,000 m², thus cementing its position as Indonesia’s and the region’s must-attend exhibition; with 360 exhibitors – 65 per cent of which came from overseas including five national pavilions and country groups from Austria, China, Germany, Singapore and Taiwan.

As Indonesia continues to build on its solid economic growth due to strong investments and net exports, and a GDP that is projected to exceed US\$3.7 trillion by 2030, investor confidence in the country and the Southeast Asian region is on an upward trend. Commenting on the keen and rising interest in Indonesia, Ms. Rebecca He, Manager at Xiamen Changsu Industrial added, “We believe that Indonesia is the new power in the packaging industry and indopack certainly showed us that there is a huge potential in the country’s packaging sector.”

Similarly, for Haicheng-based Liaoning Xinda Talc Group, one of China’s large-scale talc enterprises – from mining, R&D to production, their participation at the exhibition has been a huge success. “We managed to meet some serious buyers as well as grow our leads in the Southeast Asian market,” said Ms. Christina, International Trade Supervisor. This is the company’s inaugural showcase

at INDOPLAS.

The strong local visitor numbers and international exhibitor participation, further demonstrates the relevance of the exhibition and Indonesia as a destination of choice for many businesses. “This cross-sector platform that brings together the plastics, packaging and printing industries to one central location and to a destination such as Indonesia continues to gain global interest underscored by the busy show floor and successful networking, thus reinforcing its role as a highly-relevant marketplace,” said Ms. Rini Sumardi, Managing Director, Wahana Kemalaniaga Makmur, PT (WAKENI), and joint organiser (together with Messe Düsseldorf Asia) of the exhibitions.

Echoing this sentiment was Mr. Andhika Kurniawan Pontoh, Marketing Manager, PT Epson Indonesia: “Our participation at indoprint 2018 has been very successful as we were able to showcase our new product series to not just the people from Indonesia, but also some from the region.”

Plastics extrusion expert, Mr. Jürgen Rehkopf of Reifenhäuser Group added: “We have achieved our goals at the exhibition and the response has been incredibly strong. We have a lot of positive feedback and made a lot of contacts in both the exhibition and the seminar.”

As one of the region’s leading procurement platforms, INDOPLAS, indopack and indoprint 2018 was also staged against the backdrop of a strong economic growth rate and the Indonesian government’s roadmap – Making Indonesia 4.0 that is aimed at building a digital economy and focused on the five key sectors of food and beverage, automotive, textile, electronics and chemicals. With this, digital technology and automation across the three exhibitions featured strongly with an impressive range of technology and innovations that included energy-efficient machinery, the latest equipment and applications, to new solutions and services across the plastics, packaging, processing and printing sectors.

“To the extent that the Indonesian middle-class population will double to 141 million by 2020, higher purchasing power will invigorate the consumer goods industry and thus boosting demand for plastics products. Once again, the increase in the line-up of international exhibitors in 2018 testifies that the trio of INDOPLAS, indopack and indoprint is the most important platform for business opportunities in the region,” said Mr. Thomas Franken, Deputy Director, Global Portfolio Plastics and Rubber, Messe Düsseldorf GmbH.

The exhibition also served as a knowledge-exchange platform

Record attendance at INDOPLAS, indopack and indoprint

with its series of content-rich conferences and seminars by local and international associations and organisations. Industry trends, new applications and technologies and a comprehensive overview of market developments in Indonesia and the region took centre stage through topics that ranged from plastics to zero waste, packaging in the digital economy, print and packaging media technologies to street food and fast food packaging.

The next edition of The Indonesian International Plastics, Pa-

ckaging and Printing Exhibitions, will take place from 2 to 5 September 2020, at Jakarta International Expo, Kemayoran, Indonesia.

02nd - 05th September 2020: INDOPLAS 2020, Jakarta (Indonesien)

Messe Düsseldorf GmbH D 40001 Düsseldorf

Schreiner MediPharm Develops Protective Label for Raumedic's Dosing Syringe

Syringe System Label Supports Correct Dosing

A novel dosing syringe label by Schreiner MediPharm supports reliable and exact dosing of a medicine for children as part of a clinical trial. The specialty label was developed for the syringe system made by Raumedic. It serves as a visual barrier, protecting the adjustment button and prevents healthcare staff from accidentally activating the mechanism too early. Potential dosage errors of the medicine and false trial outcomes can thus be avoided.

Liquid medicines for oral administration are typically measured and dispensed using dosing aids such as measuring cups, measuring spoons and dosing syringes. This entails the risk of dosage errors. Commissioned by a renowned pharmaceutical manufacturer, Raumedic, a developer and manufacturer of customized components and systems for medical device technology and pharma, developed a dosing system to reduce the risk of dosage errors when dispensing critical medications. The "Liquid Dosing Device" is based on commonly used oral syringes for volumes of one, five and

ten milliliters and has an innovative mechanism for fixing the setting of the dose to be dispensed. The mechanism is equipped with a button with which the healthcare professional can adjust the correct dose and fix the selected setting by pushing the button before using the syringe for the first time—a system that is new to healthcare staff and therefore entails the risk of the button accidentally being pushed too early. The syringe setting would thus be fixed at a wrong level and could no longer be readjusted to the correct level, which would result in under- or overdosing.

Schreiner MediPharm designed a protective label for this requirement that is wrapped around the syringe, smoothly and safely covering the button. This visual barrier avoids the risk of the user accidentally pushing the button; it only becomes visible after the required dose has been drawn up and the label opened at the starter tab. Afterwards the button can be locked by depressing it—the required quantity is thus preset for all subsequent administrations. Additionally, the label includes a reference to the user directions that should be read before fixing the dose.

The main challenge Schreiner MediPharm's experts in Clinical Trial Services faced in this product development project was the label's design. The multilayer label had to ensure ease of use and be optimally adapted to the shape of the syringe. In addition, a specific stiffness and adhesion of the label was required. The tailored dosing syringe label enhances the safety of handling the dosing syringe and helps avoid dosage errors. This increases patient safety during clinical trials, supports medication compliance and addresses potential sources of error in risk assessment.



The dosing syringe in original condition with non-activated button (above), with the label protecting the button (middle) and with dose set after activating the button (below).

Schreiner MediPharm
D 85764 Oberschleissheim

Dew Point Measurement Module for High Humidity Applications



The EE1950 is optimized for accurate dew point measurement at high humidity conditions. It is therefore an ideal solution for climate chambers.

The EE1950 dew point measurement module from E+E Elektronik is dedicated for OEM applications with continuous high humidity and condensing conditions, such as climate and test chambers. Excellent temperature compensation ensures high accuracy over the entire working range from -70 °C to 180 °C (-94 °F to 356 °F). The device is also particularly resistant to pollutants and corrosive agents.

Optimized for High-Humidity Conditions

The EE1950 employs the innovative, heated E+E humidity and temperature sensing element HMC01, which shows best long-term stability even at continuous high relative humidity. Besides, the proprietary E+E coating protects the sensing element from dust, dirt and corrosion. This improves significantly the measurement performance in harsh environment.

Precise Calculation of Relative Humidity

Together with an additional, external temperature sensor, the EE1950 allows for precise calculation of the relative humidity. It is therefore a perfect solution for climatic chamber control.

High Resistance to Chemical Contamination

Thanks to the Automatic Sensor Recovery (ARC) function, the sensor copes well with chemical contamination. By controlled

heating, the chemicals gaze out from the sensing element, which improves the long-term stability and service life of the device. The ARC mode can be triggered either via a push button on the board or an electrical signal.

User-Friendly Configuration and Adjustment

The dew point measured data is available on the analogue output, which can be set to current or voltage with a slide switch. The output scaling and adjustment can be easily performed via the service interface and the free EE-PCS configuration software.

Easy Design-In

The choice of two board sizes (55 x 46.5 mm / 2.17 x 1.83 " or 90 x 70 mm / 3.54 x 2.36 ") and the high-quality, flexible probe cable facilitate the design-in of the EE1950. The stainless steel probe is available in 65 mm (2.56 ") and 200 mm (7.84 ") length.



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



EE1950 dew point measurement module for high humidity applications. (Photo: E+E Elektronik GmbH)

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