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Be compliant by selecting the right sterile cleanroom clothing solution

EU GMP Annex I

The new EU GMP Annex I guidelines will require sterile product manufacturers to adopt a more stringent approach to reducing contamination risks. In this article, Franck Bureth, EMEA Scientific Category Leader at Kimberly-Clark Professional™, explains how selecting the right sterile cleanroom apparel solution will help you improve compliance with the new guidelines.



The EU GMP Annex I changes are on their way and when they take effect sterile products manufacturers will have to adhere to new and more stringent regulations to minimize the risks of microbiological, particulate and pyrogen contamination. The new guidelines cover a range of areas and procedures, with a focus on “appropriate environmental cleanliness levels.” Much of the guidance concerns people and the risks they pose to sterile environments. The reason - People are the #1 source of contamination in cleanroom environment:

- People account for 46% of all particle contamination. (1)
- People shed 1 billion skin cells per day. (2)
- People generates 5 million particles greater than 0,3 µm when moving. (3)

Microorganisms introduced into a cleanroom environment need only three things to grow: moisture, food and temperature – all of which exist in a cleanroom. Therefore, all incoming air, water, chemicals and materials

must be filtered or sterilized so as not to contaminate processes or products in production. The cleanroom operator also must be “filtered,” in a sense, to protect the process. This contamination risk can be mitigated by using innovative sterile single-use cleanroom apparel that protects the environment from viable particles such as bacteria and yeast, and non-viable particles such as hair and dead skin cells.

The EU GMP Annex I comes with a series of stringent guidelines which can be addressed by selecting a well-designed sterile single use cleanroom apparel solution, let's see how:

ANNEX I – 4.10:

“Prior to use, Sterile Garments should be checked for Sterility and Packaging Integrity”

The Kimtech™ A5 sterile cleanroom apparel is the only solution on the market which is vacuum packed. The va-

Be compliant by selecting the right sterile cleanroom clothing solution

cuum packaging is not only a way to extend the sterile validity but also acts as a visual sterility breach indicator. The Kimtech™ A5 sterile cleanroom apparel is sterile each time!

ANNEX I – 4.11:

“The clothing and its quality should be appropriate for the process and the working area. It should be worn in such a way as to protect the product from contamination.”

The Kimtech™ A5 sterile cleanroom Apparel is certified as Class I for particle release (Helmke Drum Test), with 96% Bacterial Filtration Efficiency (BFE) and 94% Particle Filtration Efficiency (PFE). The proprietary Clean-Donhnology ensures gowning is simple to learn and minimizes contamination during the donning process.

ANNEX I – 4.12:

“Garments for Grades A/B should be folded and packed to minimize contact with the outer surface when gowning.”

The Kimtech™ A5 sterile cleanroom apparel are uniquely configured with inside-out folding, and with arms and legs pre-drawn and snapped in position, reducing the risk of touching the outside of the suit, or any other surface while gowning and the blue line indicator is guiding the operator throughout the whole donning process.

ANNEX I – 4.16:

“The ambient temperature and humidity should be set to

prevent shedding due to operators becoming too cold (leading to excessive movement) or too hot.”

The Kimtech™ A5 SMS (Spunbond/Meltblown/Spunbond) fabric provides strength, cloth-like comfort and a strong barrier for fine particles and liquids. Its middle layer acts like a filter which traps particles while maximising airflow to keep the wearer cool and comfortable. So, whilst allowing transpiration to help the body conditions remaining in the ideal condition, the fabric properties avoids the creation of a favorable environment for bacterial to proliferate in specific body areas.

The new guidance described in the EU GMP Annex I are all pointing in the same direction: contamination risk mitigation is key! To protect the process, the product and the people it's essential to use the most relevant solutions available. Not all sterile cleanroom apparel were created equal and that's why it's crucial to select the right garment that controls contamination and gives workers the assurance to do their best work.

Kimberly-Clark Europe

RH2 9QP Reigate Surrey, Vereinigtes Königreich

References:

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- (2) Sandle, B. (2014). „People in Cleanrooms: Understanding and Monitoring the Personnel Factor/IVT Network , <http://www.ivtnetwork.com/article/people-clean-rooms-understanding-and-monitoringpersonnel-factor>.
- (3) Larkin, D. (2009) „The Human Element,“ Controlled Environments.



March 2020

Dear subscribers,

in the current issue of the Cleanroom online newsletter you can read about the following topics:

Be compliant by selecting the right sterile cleanroom clothing solution

EU GMP Annex I

Selecting the right hand protection when working with chemotherapy drugs

Trends in analysis

analytica conference 2020

Sustainable medical technology:

Between dream and reality

...

Yours sincerely

Reinhold Schuster

Selecting the right hand protection when working with chemotherapy drugs

Manufacturing specialized products in a pharmaceutical manufacturing environment has a specific set of requirements when it comes to hand protection. Production and handling of these types of products typically happens in a clean or controlled environment and quite often in a sterile environment as well. When this particular application is further specialized into manufacturing or handling of a particular set of pharmaceuticals known as chemotherapeutic agents additional requirements come into play when selecting appropriate hand protection.

This paper will explore these requirements and what an individual who is working in these environments should be concerned with, while selecting appropriate hand protection as part of their overall personal protective equipment ensemble. It should be noted that this paper discusses the use of gloves as personal protective equipment in an industrial or non-medical application. For those individuals who are handling chemotherapeutic agents in a medical setting additional regulatory requirements must be met.

There are two primary reasons to wear personal protective gloves when working with these types of drugs. First and foremost to protect the individual from exposure to a potentially harmful substance and secondarily to protect the product from contamination. Chemotherapeutic agents are a class of chemical compounds designed and formulated as a drug product to inhibit the growth of or destroy rapidly growing cancer cells within the body. Therefore, by definition, they are either cytostatic or cytotoxic compounds and as such require the use of personal protective gloves that will act as an effective barrier between the hand and the chemical compound in question. Since these compounds are by nature destructive to human cells it is desirable to avoid exposure to these compounds.

Determining whether a glove provides adequate protection

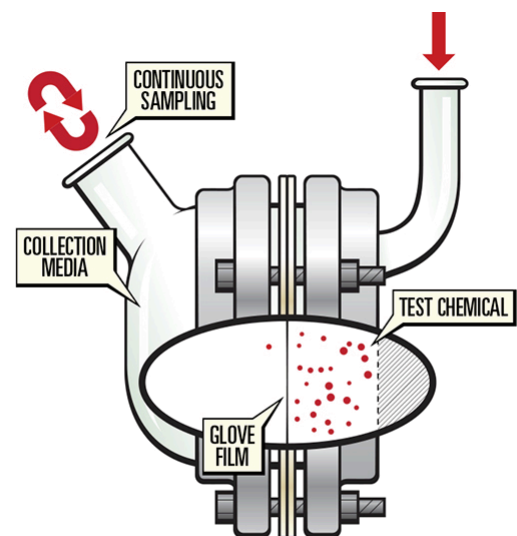
How then does an individual working in these environments and potentially exposed to these types of chemical compounds know whether or not the gloves they are wearing will provide adequate protection? Gloves designed to be used in these environments can be evaluated for their protective qualities when in contact with chemical substances. This is done by conducting what's known as a chemical permeation test and is conducted under the guidance of two

US industry consensus standards. These standards are known as ASTM D6978 Assessment of Resistance of Medical Gloves to Permeation by Chemotherapy Drugs and ASTM F739 Standard Test Method for Permeation of Liquids and Gases through Protective Clothing Materials under Conditions of Continuous Contact respectively. Whereas ASTM F739 is the general test method used to conduct chemical permeation testing, ASTM D6978 includes some additional requirements specific to chemotherapy drugs.

Standard test methods

The ASTM F739 standard test method is used to identify the actual chemical permeation resistance of glove materials under continuous contact with chemicals. The glove material to be tested is placed into a permeation test cell and sandwiched between the test chemical and a collection medium. The collection medium, usually a gas or liquid, is analyzed quantitatively for its concentration of the chemical that has permeated the barrier as a function of time after its initial contact with the glove material.

Each material specimen to be tested is sampled from the palm of at least three gloves. An additional sample may be tested with just col-



Chemical Permeation Test Cell

Figure 1: Chemical Permeation Test Cell

Selecting the right hand protection when working with chemotherapy drugs

lection media as a test control depending upon the actual analytical methods used. All test specimens are cut to fit the same diameter as the flange of the permeation test cell (see Figure 1).

The test chemical is introduced into the challenge compartment of the permeation cell and the time measuring device is started. The compartment containing the test chemical is completely filled during the period of the test. Under the requirements of ASTM F739 the breakthrough time of a chemical is deemed to occur when the sum of the permeation rates of each individual component reaches the rate of $0.1\mu\text{g}/\text{cm}^2/\text{min}$. When a permeation rate of $0.1\mu\text{g}/\text{cm}^2/\text{min}$ is detected, then the breakthrough time is reported in minutes for each test specimen. If the permeation rate does not reach $0.1\mu\text{g}/\text{cm}^2/\text{min}$ then the duration of the test is reported.

However, for chemotherapy agents under the additional requirements of the standard ASTM D6978 a more conservative breakthrough time is reported by determining a breakthrough time when $0.01\mu\text{g}/\text{cm}^2/\text{min}$ is reached. This is done in recognition of the cytotoxic/cytostatic properties of the chemical compounds in question.

Why Ansell does not use the test method EN 16523-1:2015 as set out in the EN ISO 374 standard when testing against chemotherapy drugs

Ansell gloves are tested against the most stringent standard, the American ASTM D6978-05 which employs a testing limit 100 times more stringent than its European counterpart. We do not test gloves using the EN16523-1:2015 (formerly EN374-3) method as this benchmark is not safe when assessing the suitability of a glove for protection against chemotherapy drugs.

To illustrate how the two standards parameters compare Ansell has highlighted the consequences in table 1.

Product contamination concerns

While personal protection is the first concern when selecting a glove, protecting the product from external sources of contamination is equally important. Manufacturing of chemotherapy drugs is conducted under good manufacturing practices (GMP) in a sterile cleanroom environment and as such, product contamination must be avoided. A variety of sources of potential contamination must be taken into consideration, including biological, particulate and undesirable chemical residues. A contaminated product from any of these sources can lead to unacceptable production lots resulting in a costly and time consuming scenario to rectify.

Recommended solutions

How is an appropriate glove chosen for use with chemotherapy agents? As this paper illustrates several factors need to be taken into consideration.

- Protection against:
 - » specific drugs being used
 - » other hazards or chemicals in the work place
- Protection of the products from external contamination
- Comfort
- Fit
- Ergonomics
- Costs

DIFFERENCE	EN16523-1:2015 *	ASTM D6978-05 **	CONSEQUENCE
Thickness of the Test Specimens	Sample has to be taken from the palm of the glove. (EN374-1)	Sample has to be taken from either the palm or the cuff of the glove, whichever is the thinner.	The ASTM D6978-05 requirement ensures that the area of greatest risk is assessed. The cuff is usually the thinnest part of the glove, so gloves tested under EN16523-1:2015 are not challenged as rigorously.
Test Temperature	Testing to be conducted at a temperature of $23^{\circ}\pm 1^{\circ}\text{C}$.	Testing to be conducted at a temperature of $35^{\circ}\pm 2^{\circ}\text{C}$.	The higher temperature specified by ASTM D6978-05 has two consequences: 1. The temperature is 2°C below body core temperature, which is similar to that of a human hand. 2. Permeation rates are greater at higher temperatures, making the test more stringent.
Test Chemicals	Testing is carried out against 1, 3 or 6 chemicals from a list of 18 chemicals (EN374-1). None of the chemicals is a chemotherapy drug.	A minimum of nine chemotherapy drugs must be used for the test. Seven of them are mandatory under the standard; the other two must be selected from a pre-defined list.	The EN374-1:2016 list of chemicals will not give a representation of how the gloves will perform when challenged by chemotherapy drugs. Users purchasing these gloves for chemo use should be advised to have them tested for suitability.
Permeation Limit	Breakthrough of the test chemical is deemed to have occurred when the permeation rate has reached $1.00\mu\text{g}/\text{cm}^2/\text{min}$.	Breakthrough of the test chemical is deemed to have occurred when the permeation rate has reached $0.01\mu\text{g}/\text{cm}^2/\text{min}$.	The ASTM D6978-05 test limit is set at 100^{th} of the EN16523-1:2015 limit. This requirement is far more stringent and reflects the potential hazards presented by chemotherapy drugs.

* EN16523-1:2015 Determination of material resistance to permeation by chemicals Part 1: Permeation by liquid chemical under conditions of continuous contact

** ASTM D6978-05 Standard practice for assessment of resistance of medical gloves to permeation by chemotherapy drugs

Selecting the right hand protection when working with chemotherapy drugs

Additionally, a common practice of wearing two pairs of single use gloves (double donning) can also enhance the end user's protection against chemotherapy agents provided the gloves are chemotherapy drug approved and proven to be elastic and comfortable. In consideration of all these factors Ansell has several product offerings that fulfill these challenging and very specific needs of this environment.

Glove box environment solutions

Glove boxes play a vital role in protecting products from human or environmental contamination as well as protecting individuals and environments from hazardous chemicals used for the compounding of chemotherapy drugs. Due to the propensity of sensitive materials

utilized in the life sciences, any of three different types of glove boxes may be used; Containment glove boxes, Isolation glove boxes and Isolators. The environment inside a glove box is typically sterile, clean and pressurized, either positively or negatively, to meet the specific requirements of the application.

Isolators are used to contain some of the most dangerous and toxic material known to man, therefore they are ultra-clean and contained for product and personal protection.

Ansell Life Sciences isolator glove solutions have been tested to the most stringent standard ASTM D6978 against chemotherapy drugs, to ensure the greatest possible protection.

Ansell GmbH D 81829 München

Permeation:

is the process by which a chemical dissolves and/or moves through a protective glove material on a molecular level. Permeation can occur without damaging the material or by damaging the material by degrading it. Permeation is measured in the amount of time (minutes) it takes for a chemical to pass through the barrier at a determined permeation rate, which is referred to as Chemical Breakthrough Time; and the Permeation Rate which is the rate (volume over time) at which a chemical passes through the glove material.

Penetration (break-through):

is the movement of a chemical and/or microorganism through the material, pinholes or other imperfections of a glove.

Degradation:

is the loss of, or change, in the glove material's chemical resistance or physical properties due to exposure to chemicals and/or use. These changes can occur as swelling, disintegration, becoming brittle, discoloration, flaking, hardening, or softening and is measured by taking before and after results of different metrics such as tensile strength, force at break, modulus, visual observation, and other metrics.

Precise temperature monitoring in systems and piping with new temperature sensor in the GEMÜ range

The new GEMÜ 3240 temperature transducer/switch now allows precise temperature monitoring in systems and piping across an even broader measuring range.

The GEMÜ 3240 temperature transducer/switch supersedes the existing GEMÜ 3220 product range with immediate effect. The new sensor's high-quality measuring cells

are able to withstand media temperatures of between -40 °C and +150 °C and operating pressures of up to 160 bar while maintaining an accuracy of 0.35% FSO.

In addition to the considerably broader measuring scope, the new series scores highly in terms of its wide range of features. For demanding acid/alkali applications, all media wetted parts are available with PVDF encapsulation, for example.

IO-Link for intelligent networking

With an IO-Link interface, the GEMÜ 3240 temperature transducer/switch can be used centrally to automate and monitor processes. This is beneficial for system networking, for example, as it makes components compatible with one another and facilitates parameterization and data transmission.

The rotatable LED display is another advantage: The 4-digit display allows the current operating parameters to be viewed in any installation position.

Versatility

The new GEMÜ 3240 temperature transducer/switch can be used for a wide variety of applications. The sensor is a reliable temperature measurement and control instrument for use in cooling circuits or for monitoring sterilization processes. It is suitable for a huge variety of media, such as highly viscous or contaminated media. In addition, the high-quality material from which the sensor is made means that it is able to withstand even chemically corrosive media.

With its 3140-series pressure transducer/switch, which it launched back in 2018, GEMÜ has already been able to boast state-of-the-art measurement systems for measuring and controlling pressure. This device is now joined by the new temperature sensor, which broadens the scope of the measurement and control systems range.



Temperature sensor GEMÜ 3240 with various process connections of metal and plastics.

Syntegon Technology appoints Dr Michael Grosse as Chief Executive Officer

- Dr Grosse will assume office on March 1, 2020
- Current CEO Dr Stefan Koenig to leave Syntegon Technology
- Further addition to Syntegon Technology's management team: Dr Walter Bickel becomes Member of the Executive Board

Syntegon Technology, a globally leading supplier of processing and packaging technology, appoints Dr Michael Grosse as new Chief Executive Officer (CEO). Most recently, Michael Grosse was a member of the Management Board of Tetra Pak. He has relevant leadership and management experience in the international mechanical engineering industry, particularly in the areas of process and packaging technology for the food industry. Michael Grosse joined Tetra Pak in 2003 and was, among other things, responsible for expanding the global services business. Furthermore, he is an expert for new product development and process technologies. Thanks to his many years of experience, he has built an extensive network and close relationships within the food industry. Before joining Tetra Pak, he held several management positions in the automotive industry. Michael Grosse will take up his post on March 1, 2020.

He will succeed Dr Stefan Koenig, who spent a total of 24 years working for the Bosch Group, ten of which at Syntegon Technology, or Bosch Packaging respectively. Since 2017, he has been leading the company as CEO. In 2019, he was in charge of the company's spin-off from Robert Bosch GmbH and its subsequent sale.

„We are very pleased to have won Dr Michael Grosse, an extremely experienced and successful manager, for Syntegon Technology. Almost two decades of management experience in the packaging machinery industry and an international industry network are excellent prerequisites to further advance the successful development of Syntegon Technology. At the same time, I would like to express my sincere gratitude to Dr Stefan Koenig. He has done Syntegon Technology a great service – under his leadership, the company has not only

become independent but also more profitable and more competitive,” says Marc Strobel, Chairman of the Supervisory Board of Syntegon Technology.

„I am very much looking forward to my new position at Syntegon Technology. Because of its high standards in quality as well as its long tradition, Syntegon Technology is an outstanding company in the packaging industry. Together with the Syntegon Technology team, I will particularly focus on further improving customer satisfaction and profitability,” says Dr Michael Grosse. „In addition, we want to offer our customers even more innovative and sustainable packaging solutions in the future and make full use of the opportunities offered by digitalisation“.

In addition to the change at CEO level, Dr Walter Bickel will be appointed as a further Member of the Executive Board of Syntegon Technology as of March 1, 2020. In his new position, he will be responsible for driving the Group's transformation process forward decisively. Dr Walter Bickel has many years of leadership experience in top management positions within the mechanical engineering and automotive industry. He is a renowned expert in the implementation of holistic profit improvement programs, business model restructuring and leveraging additional growth potential. Between 2014 and 2018, he was CEO and CFO of the international foil manufacturer Treofan. Previous positions also include his role as COO and subsequently Member of the Supervisory Board of robotics manufacturer KUKA as well as Chairman of the Board of Directors of Maillefer Group.

Syntegon Technology D 71332 Waiblingen



Primary Drug Containers for needle-free injection

Gerresheimer and Portal Instruments develop an innovative primary packaging

Together with Portal Instruments (Boston, USA), Gerresheimer Medical Systems has developed an innovative primary drug container for use in needle-free automatic injection system. The cartridge-like container, made of the high-performance polymer COP, serves as the primary packaging for the sensitive active agent and is equipped with a nozzle, with which the hair-thin jet of medication is generated for the injection.

Automatic injection systems play an increasingly important role in the treatment of chronic illnesses. Patients can administer medication themselves at home with these devices and thus save the frequent trip to the doctor's office. When the injection then also takes place directly through the skin without a needle, many people find it much easier to follow the prescribed treatment. Portal Instruments has developed a needle-free automatic injection system, the injection jet of which is considerably thinner than that of the usual cannulas, and which can inject even viscous medications through the skin in less than a second. The device is also networked through the Internet, so that the correct treatment can be monitored by the patient, and possibly also by the physician.

Gerresheimer, together with Portal Instruments, has now developed a drug container that fulfils the high demands of the medication and the injection procedure. Portal Instruments decided in favor of Gerresheimer as a development partner because the company possesses know-how in the development and production of syringes of COP. "For this project, we were able to access our experience from our own product, the polymer syringe Gx RTF® ClearJect®, and develop a customized solution on this basis," Manfred Baumann (Global Executive Vice President Sales & Marketing, Administration & TCC, Manage-

ment Board, Gerresheimer Regensburg GmbH) explains.

Most modern, highly effective medications are today manufactured with biotechnological methods. These sometimes very expensive medications make especially high demands of their primary packaging. COP (Cyclo Olefin Polymer) is often used as a material for pre-fillable syringes and cartridges. The unbreakable, clear-as-glass material hardly interacts with the highly sensitive active agents and is therefore well-suited for the storage and administering of the medication.

Especially challenging in the project was the development of the nozzle and its fastening in the cartridge. The nozzle is a micro-injection molding part with an inner diameter smaller than 200 µm. The connection with the cartridge body is generated via laser welding as it is an adhesive-free solution that eliminates the possibility of chemical contamination of the medication solution. However, the laser welding of two transparent components (Clear to Clear) is especially challenging and care needs to be taken not to deform the precise nozzle by the heat generated from the laser. Mold making, production of the syringe body, and of clinical samples took place at the Gerresheimer location in Wackersdorf.

Gerresheimer AG D 40468 Düsseldorf



Small Batch Production in the Technical Competence Center of Gerresheimer.

Injection molding of cartridge body



The digitalization of industrial production inspired many customers of measurement and automation technology specialist Endress+Hauser in 2019.

Endress+Hauser on course for growth

Group increases sales, employment and profit in 2019

Endress+Hauser remains on course for growth. In 2019 the Group increased its net sales by almost 8 percent to over 2.6 billion euros. The Swiss measurement and automation technology specialist created 400 new jobs worldwide. At the end of the year the company had more than 14,300 employees.

“We have grown across all fields of activity, industries and regions,” said Matthias Altendorf, CEO of the Endress+Hauser Group. Strong impetus came from Asia. Europe, the Americas, Africa and the Middle East developed positively, but at a much slower pace. “With good product innovations, we have set a clear benchmark in the industry,” emphasized Matthias Altendorf.

In 2019, order entry rose faster than sales. “Endress+Hauser has started 2020 with a significantly higher order backlog than the year before,” reported Chief Financial Officer Dr Luc Schultheiss. “The Group was able to maintain the return on sales at the previous year’s level. We are satisfied with our profit before taxes,” said the CFO.

Lower growth expectations for 2020

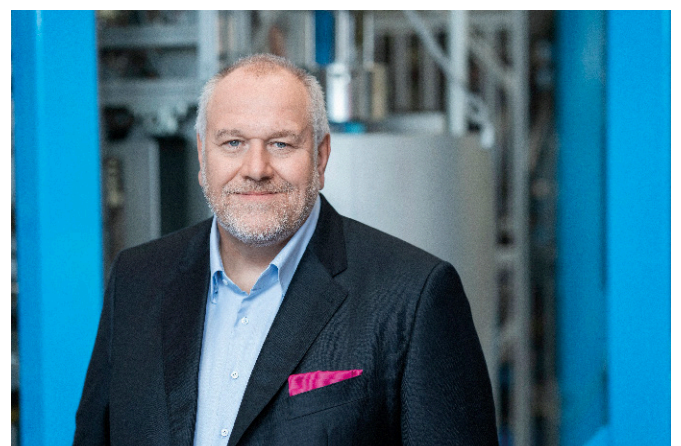
Endress+Hauser expects slower development in 2020. The Group anticipates sales growth in the mid-single-digit percentage range and aims to maintain profitability at a good level. “However, there are still many uncertainties,” stressed Luc Schultheiss.

Endress+Hauser will present its audited 2019 financial figures on 12 May 2020 in Basel, Switzerland.

Endress+Hauser AG
CH 4153 Reinach BL 1



“The Group was able to maintain the return on sales at the previous year’s level,” explained Dr Luc Schultheiss, CFO of the Endress+Hauser Group.



“With good product innovations, we have set a clear benchmark in the industry,” emphasized Matthias Altendorf, CEO of the Endress+Hauser Group.

Trends in analysis



analytica conference 2020

From March 31 to April 03, 2020, analytica, the world's leading trade fair for laboratory technology, analysis and biotechnology, will be held, now for the 27th time, on the exhibition grounds in Munich. From March 31 to April 02, it will be accompanied by the analytica conference, where scientists will report on current topics in analytics. Among the main topics of this year's conference there will be analytical coupling techniques and data management. The scientific program of the analytica conference is organized by Forum Analytik, consisting of the Association of German Chemists (Gesellschaft Deutscher Chemiker, GDCh), the Society for Bio-chemistry and Molecular Biology (Gesellschaft für Biochemie und Molekularbiologie, GBM), and the German Society for Clinical Chemistry and Laboratory Medicine (Deutsche Gesellschaft für Klinische Chemie und Laboratoriumsmedizin, DGKL).

31st March - 03rd April 2020: analytica 2020, Munich (D)

Analytical chemistry is one of the most variegated disciplines in chemistry and interfaces with numerous sub-disciplines. Many Nobel Prizes have been awarded for analytical developments, and often technological leaps are based on insights gained through highly developed analytics. At the analytica conference, experts from all over the world will show what current hot topics in the discipline are.

Among the main topics of the conference there will be analytical coupling techniques and data management. How can a large amount of analytical data be processed efficiently? And what role does artificial intelligence play e.g. in medical analyses? The speakers will give an overview of novel methods, procedures and techniques. The lectures are going to focus on current developments in topics such as chromatography and mass spectrometry, as well as data processing. With his expertise on the current topic of particulate matter,

Professor Dr. Ralf Zimmermann, Helmholtz Zentrum München – German Research Center for Environmental Health, among others, will chair sessions on the latest developments in high-resolution mass spectrometry. Further sessions with experts such as Professor Dr. Michael Rychlik, Technical University Munich, will address the use of modern methods in foodstuff analysis.

The analytica conference will take place at the ICM – International Congress Center Munich, on the fairgrounds. Admission is free for visitors of analytica. The joint booth of Forum Analytik will be located in Hall B2, № 505.

Messe München GmbH
D 81823 München



analytica 2020: The digital laboratory live and tangible



- Globally unique special show Digital Transformation in Hall B2
- The world's most practice-oriented laboratory-of-the-future concept to date
- Forum Digital Transformation with top experts

Visitors to analytica 2020 can experience the laboratory of the future in a special show that is unique in the whole world: 18 partners from science and industry have joined forces to demonstrate device networking, collaborative robotics and user interaction, using the example of eight workflows from real-world applications. In the associated Forum, experts give lectures on the current state of digitization in the laboratory.

From laboratory planning through sample logistics to data management, digital technologies will revolutionize the laboratory world – experts are unanimous about that. However, the new opportunities that this change will actually open up often remain vague, even for industry experts. In the special show Digital Transformation (Hall B2), analytica will therefore demonstrate in specific terms how daily work in the laboratory will change. The special show consists of an Action Area and a Forum.

“Key topics in the laboratory of the future are going to be digitization, miniaturization and automation,” explains Dr. Felix Lenk, head of the SmartLab Systems research group at the Technical University of Dresden (read an interview with Dr. Lenk here). With his team, he is organizing and designing the Action Area dedicated to the topic of Laboratory 4.0 at analytica 2020. A total of 17 industrial partners could be enlisted, who are for the first time working together on this scale to implement lab-of-the-future workflows. They include companies such as eppendorf, Düperthal, LAUDA, Merck, Mettler Toledo, Olympus, and innovative start-ups. The laboratories presented will be created exclusively for the world's leading trade fair.

Action Area with flexibly convertible workflows

At the center of the Action Area, in alternating demonstrations they show two complex laboratory workflows. For this purpose, the area is converted several times a day. “The laboratory of the future must be able to adapt flexibly to ever new tasks. We are demonstrating here how this can work in practice,” explains Dr. Lenk. This setup

includes robot arms that support the laboratory staff in manual activities. Semi-transparent data glasses, so-called mixed-reality glasses, make information and data easily available. The networked equipment – including pipettes, dispensers, pumps, scales and centrifuges – guarantees a consistently digitalized and standardized workflow. All data converge in a digital lab journal.

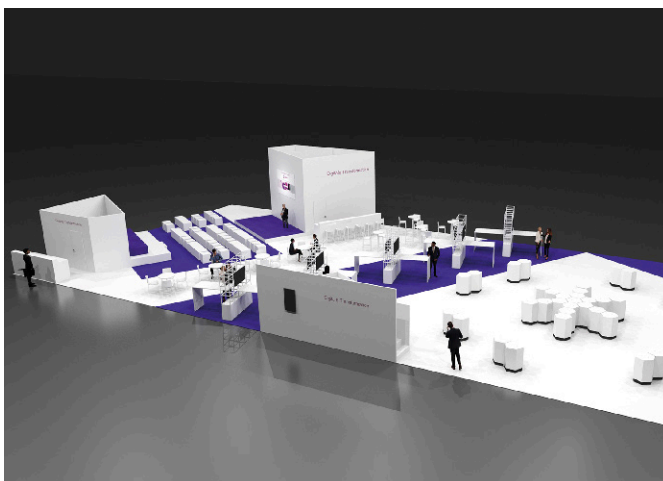
Six smaller hands-on workflows are grouped around this central workflow. Visitors can actively take a hand there and try out laboratory-of-the-future processes. These workflows show, for example, networked temperature controls in bioprocesses, digitized optical analyses, and control of exothermic reactions.

To ensure flexibility of the smart laboratories, at analytica modules in honeycomb form are used, which can be newly combined again and again. In recent years, this design has proven advantageous for use in the laboratory, since it allows for particularly space-saving combinations. For analytica, the honeycomb modules are equipped with extensive engineering and fitted with interfaces that make them universally connectable. analytica visitors will thus experience what is currently the world's most flexible laboratory-of-the-future concept.

The Action Area is complemented by the Forum Digital Transformation. In lectures and discussion rounds on all days of the fair, manufacturers, associations and institutions will give an overview of the current status and future applications of digitization in the laboratory.

Networked know-how: analytica 2022 simultaneously with automatica

“We expect that the digitization trend will continue to keep the laboratory industry busy in the coming years and will again be the focus of analytica 2022,” says analytica Exhibition Director Susanne Grödl. Visitors can then benefit from particular synergies: For due to a tight schedule on the Munich exhibition grounds, analytica 2022 will take place at the same time as automatica, the world's leading trade fair for intelligent automation and robotics. As the leading event for the automation and robotics industry, automatica will occupy seven halls with over 900 exhibitors and welcome more than 45,000 visitors.



Date for both events: 21st - 24th June 2022.

Sustainable medical technology: Between dream and reality



Everybody's talking about sustainability. A search of the term on Google turned up 1,320,000,000 results within seconds and includes many links to blogs with tips for private households to shop sustainably and environmental organizations with suggestions pertaining to mobility such as car sharing or rail travel. A search for the phrase sustainable medical technology still yields 346,000 results. For quite some time now, the sustainability trend has been a key economic factor.

16th - 19th November 2020: COMPAMED 2020, Duesseldorf (D)

For years, small and large companies have tried to adopt more environmentally friendly production processes for their technology. That's because companies in the healthcare/ medical devices industry leave a big ecological footprint. The international non-governmental organization „Health Care Without Harm“ (HCWH) states that health care's climate footprint is equivalent to 4.4% of global net emissions. This number includes the manufacturing of medical devices and emissions from hospitals or patient transports.

Product lifetime as well as energy-efficient and water-saving devices for particular fields are also an important consideration. But when is a medical device considered to be „sustainable“? If it was produced with green sources of energy? If it has an especially long lifetime or is made from recycled components? The concept is difficult to defi-

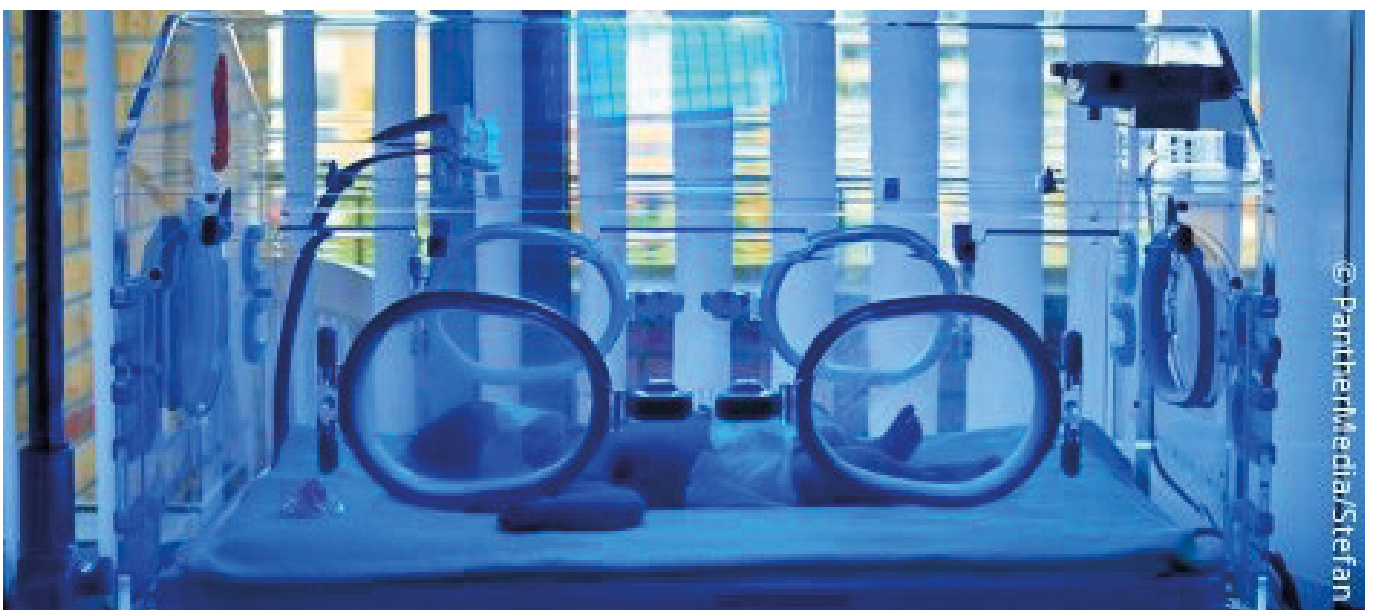
ne. Unfortunately, there is no separate seal of „sustainable medical technology“ (yet) that ultimately defines the applicable requirements and criteria.

Is bioplastics the solution?

What's more, the term „medical technology“ applies to many product categories, ranging from droppers and disposable gloves for laboratory work to CT scanners and displays. Each product group requires a separate set of assessments to determine whether it generates sustainable products. The process seems easier when it comes to plastic tubing versus CT scanners for example. Some manufacturers like Starlab – a company that supplies laboratory consumables and equipment - already analyze their products accordingly. So-called “green officers” ensure compliance with sustainability

criteria. Starlab develops and manufactures pipettes for example. They are made of plastic and are only used a handful of times before they are discarded. How can you make them more sustainable? The answer lies in the manufacturing process. Starlab has succeeded in using less polypropylene (PP) in the injection molding process by making the pipette tip thinner. This doesn't lower the quality, but it significantly reduces the use of PP.

Another approach aims to make plastic from non-petroleum-based material such as PLA (polylactic acid) derived from corn starch, which is approved for medical devices and used for 3D printing. The benefit here is that it can be composted in industrial facilities and does not have to be burned. It is suitable to make orthotics and could ultimately replace the traditional plaster-based cast used for broken bones. DI Johannes Rudloff, Deputy Head of Materials Development, Compoun-



Plastic is used in many areas of medical technology. Even premature babies come into contact with it. It becomes problematic if it contains substances of concern such as BPA. Consumer protectionists and manufacturers are therefore holding lively discussions about limit values and substitutes.

Sustainable medical technology: between dream and reality



ding & Extrusion at the SKZ German Plastics Center sees many potential uses and applications of bioplastics: „PLA can essentially be used in medical devices since many of its properties do not differ from petroleum-based plastics.“ He points out that whether or not the material is suitable for an application must be determined on a case-by-case basis.

Sorting waste is not just a job for housewives and househusbands

There are many ways and options to be more sustainable when it comes to the disposal of medical waste. Hospitals, in particular, produce tons of waste that is far too valuable to burn. For example, it's possible to recover precious metals from cardiac catheters. All that's required is to collect the used material in special containers, which are

subsequently picked up by disposal companies. It's a simple yet effective method of recycling. The COMPAMED exhibitor Remondis-Medison has more information about this technique. Another great option is to collect and sort packaging. Several manufacturers already offer their customers a packaging takeback program for subsequent recycling or reuse.

These different approaches show that sustainability is possible if companies are genuinely willing to „walk the talk“. According to Rudloff, „All stakeholders are vested and prepared to become more sustainable. However, mounting cost pressures on companies still stand in the way of sustainability. This applies to both high-quality recyclates and bioplastics since they are generally more expensive than standard plastics at the present time. To be more sustainable, the quantities of used

material must see an overall increase to reduce costs. Increased government funding for research and development projects – in particular those pertaining to applied research – can contribute significantly to sustainable endeavors.“ It remains to be seen whether more funding will be forthcoming in the future. In the meantime, „sustainability“ will continue to be important and shape the medical technology industry.

The three R's of sustainability

At one point or another we've all heard about the „three R's“ of sustainability: reduce, reuse and recycle. Unfortunately, medical technology isn't always able to implement all three practices. Many medical consumables are simply not recyclable. As the name suggests, disposable gloves are designed to be used only once. However, it may be worth considering whether it's possible to implement at least one or two of the „three R's“. Looking at the product life cycle of an item, one can typically tweak some aspects to create a more positive impact: Could renewable energy sources in manufacturing reduce carbon emissions? Or is it possible to manage and reduce post-consumer waste by rethinking design? Maybe it's possible to consolidate deliveries if the packaging design is slightly changed? At any rate, it always pays to rethink your approach!



Programme promotes dialogue and power of innovation in the sector



MedtecLIVE 2020

Exhibition, congress, partnering, networking: MedtecLIVE, taking place at the Exhibition Centre Nuremberg from 31 March to 2 April 2020, is the largest sector event in Europe this spring, and will offer all visitors major benefits in terms of knowledge and networking. Medtech experts can look forward to a programme with something for the entire medical technology value chain, covering topics such as digitalization, robotics, AI and Regulatory Affairs. The open MedTech Summit Congress & Partnering at the heart of the exhibition and the Innovation Market Place for Start-ups and young companies will ensure seamless interaction between research and practice.

31st March - 02nd April 2020: MedtecLIVE 2020, Nuremberg (D)

Promoting dialogue and innovations, and bolstering networking between the sector and research, policy-making and society: that is the focus of MedtecLIVE together with the MedTech Summit. The event package offers all visitors a comprehensive exhibition comprising innovations from all around the world (about 50 percent of the exhibitors come to Nuremberg from outside Germany) and a programme of lectures and workshops at two trade forums and the congress setting of the MedTech Summit. "Relaxed networking on an equal footing with experts and leading thinkers in the sector – it all comes together at MedtecLIVE," says Alexander Stein, Director MedtecLIVE at NürnbergMesse. "It's all down to a super programme, which we and our partners have arranged, and also the special atmosphere of our sector event in Nuremberg."

Trade forums: Stimuli for Medtech practice

Prominent trade and professional associations and organizations give their support to MedtecLIVE and contribute their expertise to the programme. The programme includes sessions by associations such as BVMed (robotics), ZVEI (MDR and supplier management), VDE (medical software), Bitkom (Artificial Intelligence) and VDI (bioprinting). The leading trade publishers in

the sector will organize further sessions and guided exhibition tours, covering subjects like electricity supply for medical devices, wearables, 3D printing, and careers and new talents. On all of these topics visitors can look forward to top speakers from the fields of industry and practice, and plenty of opportunities to engage with the experts in person.

MedTech Summit addresses trends and challenges

The MedTech Summit is one of the most significant innovations at this year's event. From now, this top-level congress with international speakers is integrated into the exhibition events, and is open to trade visitors with no additional ticket charges. More than 50 speakers will bring the global visions of the future of medical technology to Nuremberg. The lecture programme is divided into two streams, "Future Trends" and "Major Challenges", and covers themes like Artificial Intelligence, Clinical Innovations, Regulatory Affairs and Effective Manufacturing. Speakers have been confirmed from top-level institutions such as Siemens Healthineers, GE Healthcare, IBM Watson Center, mdc medical device certification, Technical University Munich, University Hospital Heidelberg, University of Oxford and the Estonian Connected Health Cluster. "We are pleased that we are now able to make expert knowledge on the key future trends and interaction on promising innovation strategies available to an even broader audience," confirms Dr Matthias Schier, Project Manager MedTech Summit at Bayern Innovativ GmbH.

The established networking format



Programme promotes dialogue and power of innovation in the sector

“MedTech Summit Partnering” also offers the opportunity for intensive interaction with selected partners in the form of prearranged conversations, which are also open to all exhibition visitors.

MedtecLIVE: Home for Start-ups

Meet Europe’s best Medtech founders and Start-ups in person at the Innovation Market Place, the large special exhibition area for start-ups and young companies. About 50 entrepreneurs and their inventions will be hosted by MedtecLIVE, with special support from prominent incubators EIT Health and Medical Valley EMN. All start-ups have the opportunity to give lectures to impress a broad-based expert audience with their ideas. They will also take part in the EIT Health Start-up Contest and pitch for top-quality prizes and funding.

The entire MedtecLIVE and MedTech Summit programme is available from now at www.medteclive.com/en/events. From now, visitors can reserve tickets for MedtecLIVE, which will also include access to the MedTech Summit Congress & Partnering.

About MedtecLIVE and MedTech Summit

MedtecLIVE trade fair in combination with MedTech Summit Congress & Partnering is a leading networking platform for the international medical technology community. The range of solutions on display covers the full medical technology supply chain, from prototypes to market-ready products. Companies, associations and institutions come together at MedtecLIVE

to make contacts, share ideas and create new innovations. The international alignment of MedtecLIVE was confirmed in 2019, when it welcomed visitors from 50 different countries who networked with the more than 400 exhibitors from 30 nations. The renowned Med-Tech Summit Congress & Partnering event that accompanies the exhibition enables manufacturers, end-users and researchers to hold interdisciplinary discussions on the future developments in the sector. This particular event is organised by the Bavarian Ministry of Economic Affairs, Regional Development and Energy and realised by Bayern Innovativ. The industry network Forum MedTech Pharma is the institutional sponsor of MedtecLIVE and MedTech Summit.

NürnbergMesse GmbH
D 90471 Nürnberg

Two Freeformer machines show potential of Arburg Plastic Freeforming



Rapid + TCT 2020

- **Arburg Plastic Freeforming: for processing original materials, even in clean rooms**
- **Focus on medical technology: Freeformer 200-3X produces resorbable bone plates**
- **Freeformer 300-3X: resilient hard/soft combinations**

Rapid + TCT is taking place from 21 to 23 April 2020 in Anaheim in the US state of California. At stand 3405 in hall B, Arburg will present two Freeformer machines which use Arburg Plastic Freeforming (APF) to process original plastic granules in the production of complex functional parts: the first of these, a Freeformer 200-3X with two discharge units, will be producing an implant for use in medical technology. The second exhibit, a Freeformer 300-3X with three discharge units, will showcase an application involving the processing of three materials.

20th - 23rd April 2020: Rapid + TCT 2020, Anaheim, CA (USA)

“We were incredibly proud to win the People’s Choice Award at Rapid + TCT 2019. This year, our exhibit will once again feature two Freeformer machines, exciting examples of components, interactive stations and the latest developments in Arburg Plastic Freeforming,” says Friedrich Kanz, Managing Director of Arburg Inc. in the USA. “We have recently expanded our Freeformer team in the USA. Having firmly established a position in the injection moulding sector of the US

market, which is a major priority for Arburg, we now intend to do the same for additive manufacturing.”

Freeformer exhibit produces resorbable implants

The Arburg Plastic Freeforming process is able to cope with highly challenging applications, especially in medical technology, and pro-

Two Freeformer machines show potential of Arburg Plastic Freeforming

duces the right results where no other additive process can. The open system provides a cost-effective way of processing biocompatible, resorbable and sterilisable FDA-approved original plastic granulates – resulting in products such as custom-made orthoses and implants. At Rapid + TCT 2020, a Freeformer 200-3X will be demonstrating the advantages that the APF process holds for this demanding industry: Resomer LR 706 (a polymer composite made from poly(L-lactide-co-D,L-lactide) and β -TCP) will be used to create implant plates intended for direct application in the body to help repair fractures. The polymer composite, which is an Evonik product, imitates human bone and contains 30 percent ceramic additives, making the resulting component more stable and adding calcium as a means of promoting bone



Resorbable materials such as plate implants that resemble bone are replaced with the body's own tissue and absorbed of their own accord after a certain time. (Photo: Arburg)

formation. After a certain time has passed, the implant is then fully absorbed. The Swiss company Samaplast is one example of a customer from the medical technology industry which is already using a Freeformer to process innovative resorbable materials of this type.

Freeformer machines cover a wide application spectrum

The two Freeformer 200-3X and 300-3X machines cater to a wide range of industrial additive manufacturing applications. While the Freeformer 200-3X is equipped with two nozzles as standard, the Freeformer 300-3X is able to process three components as a means of producing even complex functional parts in resilient hard/soft combinations with support structures. The APF process operates on the basis of qualified standard granulates, which are the same as those used for injection moulding. Users have the option of processing their own original materials and optimising droplet size as well as process control with the open Freeformer system. Alternatively, they can access Arburg's material database of reference materials. The numerous qualified standard granulates documented there include ABS (Terluran GP 35), PA10 (Grilamid TR XE 4010), PC (Makrolon 2805), TPE-U (Elastollan C78 A15) and PP (Braskem CP 393). Further examples are special plastics for specific applications such as medical PLLA (Purasorb PL18, Resomer LR 708) and a PC (Lexan 940) approved for aerospace use.

With just a few minor adjustments, Freeformer machines are suitable for use in clean room environments – something that customers have already proven in practice. They produce very few emissions, are dust-free and have a build chamber that is usually made from stainless steel. Process quality can be documented reliably, and components can be clearly traced as and when required.

ARBURG GmbH + Co KG D 72290 Loßburg



The 200-3X and 300-3X Freeformer machines enable Arburg to cover a broad spectrum in the industrial additive manufacturing of functional parts from original materials. (Photo: Arburg)

Tailor-made packaging solutions from a single source



MULTIVAC at interpack 2020 (Hall 16, Stand B 72)

At this year's interpack MULTIVAC will be exhibiting packaging solutions for sensitive products. The highlight will be the RX 4.0 thermoforming packaging machine in GMP design, which will be presented to the visitors for the first time. In conjunction with an integrated handling module and an IntelliJet HD printer from BELL-MARK, it forms an efficient solution for producing and printing combi packs containing a syringe, filter and vial.

07th - 13th May 2020: interpack 2020, Duesseldorf

(D)

RX 4.0 in GMP design for producing combi packs

The packaging solution is completely enclosed in a housing. In addition to the machine's comprehensive sensor system, the new generation of intelligent dies also contributes to the high level of efficiency, process reliability, and operating security. Thanks to their highly developed actuating system, the RFID-coded X-tools enable the die to be changed quickly and reliably during product changes. The packaging solution in Düsseldorf will be used to produce a combi pack. The RX 4.0 is equipped with an IntelliJet HD printer from BELL-MARK for coding the packs. An integrated H 242 handling module in the outfeed area removes the packs from the machine.

Carousel system for the separating and controlled loading of syringes

MULTIVAC is also showing a carousel system with integrated H 242 handling module for loading syringes into combi packs. A high-per-



formance vision system will be used on the carrier system. This ensures that, even at high throughput, all the packs are inspected for completeness, and it also checks whether the individual products are loaded correctly into the pack cavities.

Wrap-around labelling of cylindrical containers

Among the other exhibits is a compact solution for the wrap-around labelling of glass or plastic bottles. The L 320 conveyor belt labeller, combined with a MRT 100 rotating infeed table and an outfeed table, will be on show in Düsseldorf. The L 320 was specially developed for rapid and precise labelling of round or oval bottles, pots, or glass jars. Since the labeller is constructed of standard modular elements, it can be perfectly designed for the requirements of the particular sector. The model is also very versatile when it comes to label positioning. Labels can be positioned on all sides, as well as over the pack edges or as wrap-around labels. The application of sealing labels is also possible. Thanks to a minimum of format parts, which can be changed very quickly, the L 320 can be converted to different products within a short period of time. The rapid change of label rolls, together with the use of low-maintenance components, also contribute to the labeller's high level of availability.

MULTIVAC Sepp Haggenmüller GmbH & Co. KG
D 87787 Wolfertschwenden



A virtual experience of future manufacturing



Staufen Digital is organizing the fully virtual NEXCON conference, which focuses on the digital transformation of the manufacturing sector, for the third time. The conference, which will feature high-profile experts, digital networking and visionary Industrie 4.0 concepts from Europe, China and the USA, is to take place on March 5th, 2020. Fraunhofer IPA is a cooperation partner for the event where it will focus on its collaboration with the Fraunhofer Project Center for Smart Manufacturing in Shanghai.

05.03.2020: Virtuelle Konferenz NEXCON

The Fraunhofer Project Center for Smart Manufacturing, where application-oriented solutions in the field of production management, human-robot collaboration and Industrie 4.0 are researched and developed, is home to the collaboration agreed between Fraunhofer IPA and Shanghai Jiao Tong University (SJTU). The overarching objective of this partnership is to carry out research projects on the digital transformation in China, primarily with industrial partners in Germany. Visitors to Fraunhofer IPA's virtual NEXCON exhibition stand will be afforded an insight into the research work being conducted at the Project Center. In addition, SJTU professor Hao Wang, who is leading the project alongside Michael Lickefett, a Department Head at Fraunhofer IPA, will be giving the first keynote speech of this year's NEXCON on the topic of "The second Phase of Industry 4.0: Impact of 5G".

Additional topics at the Fraunhofer IPA virtual exhibition stand

Simulation Game Digitalised Production Control Fraunhofer IPA's awarded, self-developed simulator will bring all participants up to



Michael Lickefett, Head of Department for Factory Planning and Production Management at Fraunhofer IPA, and Professor Hao Wang, Vice Dean of the School of Mechanical Engineering at SJTU, lead the Fraunhofer Project Center for Smart Manufacturing in Shanghai. At NEXCON 2020, Fraunhofer IPA will provide insights into the work conducted at the Project Center. (© Fraunhofer IPA)

speed with regard to any changes to production plan-ning and management brought about by Industrie 4.0. The participants will have the opportunity to learn all about these changes at first hand via an interactive simulator for the assembly of toy robots. The simulator can furthermore be adapted to the individual requirements of different businesses.

LeanDA

Fraunhofer IPA's IT-independent process optimization set is due to be unveiled at this year's NEXCON. Through its combination of wireless multi-sensors and smart algorithms, the system creates transparency for both manual and automated assembly processes. As a result, process engineers are supported in their efforts to optimize the assembly process by near-real-time assessment aimed at identifying waste.

Future Work Lab

The innovation lab makes it possible to experience the future of production. With its simulated experience world, the lab provides a tangible representation of the full spectrum of the industrial work of the future.

ROS-Industrial

The international open source initiative brings the possibilities offered by a Robot Operating System (ROS) to industrial manufacturing. It increases the availability of high-quality smart software components for robotics.

More than 1,000 participants expected

This year will see the third edition of NEXCON take place. Last year, 16 speakers and 30 exhibitors took part. This year, organizers are anticipating over 1,000 participants. It is set to start at 2am on March 5th, 2020 and last for a full 16 hours. During this time, keynote speeches and short video presentations will be given. Executives from companies such as Schaeffler, Microsoft and Daimler will discuss their experiences of the digital, semi-autonomous and sustained transformation of factories and networked production processes brought about by Industrie 4.0. In the virtual exhibition hall, companies from a variety of

A virtual experience of future manufacturing

sectors in which Industrie 4.0 applications are relevant will be exhibiting. The conference participants will be able to discuss various topics through live chats and panel debates.

Year-long platform for qualification and knowledge exchange

New for this year is the year-long NEXCON platform, which enables regular knowledge exchange through use cases, success stories, keynote speeches, workshops and expert discussions. For example, a keynote speech on the topic of "Explainable Artificial Intelligence" by Prof. Marco Huber, Head of the Image and Signal Processing Department at Fraunhofer IPA and Head of the Center for Cyber Cognitive

Intelligence will be available from May 5th, 2020. Participants from all over the world will be able to log in using their personal registration code and access the speeches via an integrated video player.



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Indian interpack alliance trade fairs well-established in New Delhi



Increase in visitors at pacprocess India, food pex India and the parallel drink technology India trade fair

The second edition of the combined interpack alliance trade fairs pacprocess India, food pex India and the parallel drink technology India trade fair organised by Messe München was well received by visitors. Every year, the trade fair trio alternates between event locations Mumbai and New Delhi and is accompanied by an extensive conference programme.

09th - 11th 2020: pacprocess India, food pex India, drink technology India, Mumbai (India)

9,925 visitors came to the Pragati Maidan exhibition centre in New Delhi from 12 to 14 December – around 2,000 more than attended the debut in India's capital two years ago. 201 exhibitors presented their offerings across a total of 11,400 square metres (gross).

At the second Packaging Design, Innovation and Technology conference (PDIT₂), 35 speakers offered visitors a substantial wealth of knowledge. The topics ranged from packaging design and sustainability to smart packaging. India is also affected by the growing pressure on the industry to ensure packaging is recyclable and reusable. At the same time, the food industry benefits from more sustainability thanks to the increasing use of packaging that extends shelf-lives, reduces food waste and increases food safety. PDIT₂ aspired to provide sound information on each topic and to avoid superficial sales presentations. The conference was organised by IPP Star in cooperation with the Active & Intelligent Packaging Industry Association (AIPIA) and in its second year, PDIT₂ was held in New Delhi for the first time.

"In combination with the conference offer, the consortium of pacprocess India, food pex India and drink technology India, which is organised by our colleagues at Messe München, represents a unique knowledge and business platform for the industry in India. The alternating locations Mumbai and New Delhi ensure ideal market coverage for the subcontinent," says Bernd Jablonowski, Global Portfolio Director Processing & Packaging at Messe Düsseldorf in summary.

pacprocess India and food pex India take place annually in combination with the drink technology India trade fair by Messe München.

Connecting the three trade fairs offers benefits for exhibitors and visitors alike, as the shared location allows them to exploit synergies: Combined under one roof, the trio presents the entire range of packaging and associated processes (pacprocess India), food and confectionery processing and packaging (food pex India) as well as beverage, milk and liquid food technologies (drink technology India). This in turn makes this trio the leading event in the region.

pacprocess India and food pex India are supported by a wide range of associations, some of which are national, among them the Authentication Solution Providers' Association – ASPA, the Plastics Machinery Manufacturers Association of India – PMMAI, The All India Glass Manufacturers' Federation – AIGMF, the Trade Promotion Council of India – TPCI, and the Indian Paper Corrugated & Packaging Machinery Manufacturers' Association – ICPMA. International associations are also involved, among them the VDMA, the Metal Containers Manufacturers Association – MCMA, Flexible Packaging Europe, the Istanbul Chemical & Chemical Product Exporters' Association – IKMIB, the Global Aluminium Foil Roller Initiative as well as amec envasgraf and CCPIT.

This year, the trade fair trio pacprocess India, food pex India and drink technology India will take place at the Bombay Exhibition Centre in Mumbai from 9 to 11 December 2020.

Messe Düsseldorf GmbH
D 40001 Düsseldorf

POWTECH 2020: Setting trends in processing technology and sustainable production



Mechanical processing technology is the basis for almost all the everyday products that we use. In 2020, POWTECH, the leading fair for the processing, handling and analysis of powders and bulk solids, will focus among other things on more sustainable ways of manufacturing and doing business in all segments. In this context, modern process engineering embedded into digital environments is the key to more efficient, more sustainable and fully recyclable products. POWTECH 2020 will take place in Nuremberg from 29 September to 1 October, when more than 800 exhibitors will showcase their technologies to production experts from all around the world.

29th Sept. - 01st Oct. 2020: POWTECH 2020, Nuremberg (D)

Innovations in mechanical processing technology are used in key segments like chemicals and pharmaceuticals, food production, recycling, non-metallic minerals (pit and quarry), and ceramics and glass production. For all these segments, POWTECH is the pacemaker for improvements in production facilities. "Sustainability, more efficient and flexible manufacturing and the expansion of the closed-loop economy: these are the huge challenges currently faced by the production environment. Such issues affect large, globally operating concerns with a comprehensive brand portfolio as well as SMEs. And they all come to POWTECH to make their processes fit for the future," says Beate Fischer, Director POWTECH at NürnbergMesse, describing the pulling power of the event.

Networking for experts

At the exhibition, which celebrated its debut in 1971 and will take place in Nuremberg for the 22nd time this year, exhibitors will present their latest developments for mechanical processes like size reduction, agglomerating, separating, screening, mixing, storage and conveying. The last POWTECH in 2019 welcomed 823 exhibitors to Nuremberg, around 40 percent of them from outside Germany. From machinery and equipment manufacturers to vendors of measurement, control and analysis technology and research establishments, all major players from the scene were out in force. They showcased their innovations to more than 14,000 visitors, 94 percent of whom were responsible for or involved in their company's investment decisions. In an independent poll, 95 percent of exhibitors said that they reached their most important target groups at the fair. As a highly specialised exhibition, POWTECH only attracts highly qualified industry experts, guaranteeing knowledge-sharing and networking at a high professional level. It is quite common for POWTECH visitors to come to the fair with specific issues or investment plans in mind.

Networking Campus: the home of trending issues

In the POWTECH supporting programme experts share their knowledge and inspire collective discussions. POWTECH has created the special Networking Campus platform to cover the trending issues in the process industries. In a relaxed atmosphere, visitors and exhibitors will discuss the issues that are important for the production

of the future, including digitalisation, simulation software, life cycle management, energy efficiency and new workplace environments and recruiting. Universities and research establishments also present their institutions at the Networking Campus, while a jobs board allows companies to target young recruits.

Knowledge sharing: explosion protection, innovations and practical tips

Two forums offer a platform for additional presentations: The Expert Forum covers best practices in production with a focus on additive manufacturing and explosion protection. The new Life Sciences Forum will explore topics relating to pharmaceuticals and food production. Every day there are different table top displays from the pharmaceutical segment that also enable pharmaceutical excipient manufacturers to get involved in POWTECH.

The highlight for explosion protection experts is the IND EX Safety Congress on Industrial Explosion Protection, which takes place parallel to POWTECH and provides information on international guidelines for explosion protection. The agenda includes such topics as "Explosion Isolation" or "New Developments in Software for Risk Assessment". As the ideal complement to the theoretical content of the congress, IND EX e.V. is also organising live explosion demonstrations outdoors, where visitors can experience an impressive display of the risks and protective measures necessary in the event of powder and dust explosions.

The POWTECH supporting programme is developed in cooperation with the APV (International Association for Pharmaceutical Technology) and the VDI-GVC (VDI Association of Process and Chemical Engineering), both of which are the institutional sponsors of POWTECH. The programme also receives support from other associations and the leading trade journals from the sector. Together with the exhibitors, they make POWTECH the world's leading innovation and knowledge platform for powder and bulk solids technologies. Companies, institutions and experts interested in presenting at the trade fair will find all the information they need at: www.powtech.de/become-exhibitor.

interplastica and upakovka 2020 report positive results and a good atmosphere in the exhibition halls



- Packaging sector in Russia is booming
- Strong debut for new interplastica segment "Recycling Solutions"
- Lecture forums meet with great approval

At the last edition of the trade fair duo comprising interplastica, International Trade Fair for Plastics and Rubber and upakovka – Processing & Packaging, there were already signs that the Russian market was moving out of the trough again – at least for the plastics and rubber industries as well as for the packaging industry and related process industries. Both trade fairs held at the Central Exhibition Complex Expocentre in Krasnaya Presnya from 28 – 31 January substantiated this stabilisation. A total of 937 exhibitors from 40 countries attracted to the tune of 24,950 visitors mainly from Russia and the neighbouring states. The atmosphere in the halls was good. Exhibitors predominantly praised the high quality of leads.

26th - 29th January 2021: interplastica 2021, Moscow (R)

Werner Matthias Dornscheidt, President & CEO of Messe Düsseldorf, voiced his satisfaction with the course of interplastica 2020: "Russia continues to be an important market that is admittedly going through tough times but still experiencing plenty of movement. The interest taken in high-quality and innovative machinery, systems and materials continues to be high; companies want to invest and make efforts to also implement planned projects. Things are currently happening especially in terms of packaging, recycling and waste avoidance." He underlines: "Especially today, trade fairs have an important role to play as information platforms, networking meeting points and business engines. With their participation the exhibitors at interplastica have proven that they bet on sustainable customer relations management and have solutions specifically geared to the Russian market in their portfolios."

Silver Lining – Russian Packaging Sector

After very marked growth in the exports of German plastics and rubber machine to Russia in 2017 and 2018, VDMA's Association for Plastics and Rubber Machines report of strong export declines in 2019. This means the Russian market is one of the many countries that bought fewer German machines last year. Commenting on this Managing Director of the Association Thorsten Kühmann said: "Despite these developments, there is still a silver lining on the horizon of the Russian packaging sector. Due to the embargo on Western foods domestic production was ramped up substantially. To conserve these regional foodstuffs, however, packaging has also to be produced increasingly in Russia. Furthermore, recycling and the circular economy are gaining increasing importance in Russia. At K 2019 German companies already showed that they are extremely well positioned in this respect and can score points with their technologies."

Recycling Solutions, special show 3D fab+print, Forum Polymer Plaza

It comes as no surprise therefore that the new "Recycling Solutions" segment with 50 highly specialised firms met with great approval at interplastica 2020. In the Recycling area Austria was particularly well represented among the exhibitors. In the accompanying panel discussions lectures on waste management in Russia and exhibitors' talks on the circular economy were very well received. Commenting on this, Harry Reichert, expert at the Plastics and Rubber Machinery Association within VDMA, said: "The next few years will show whether the numerous declarations of intent will be followed by investment in collection and recycling so that successful business models can also be established across the board in this field."

Innovative technologies for all sectors of plastics processing are presented not only at the stands of the 680 interplastica exhibitors but also in the lectures and discussions at the Polymer Plaza in Hall 1 as well as in the special show 3D fab+print Russia. There Russian and international experts addressed developments in, and possibilities of additive manufacturing in technical talks and demonstrations.

AMAPLAST confirms High Quality of interplastica leads

The Italian professional association AMAPLAST emphasized visitors' high technical competency. More than 60 Italian exhibitors participated in interplastica 2020, 40 of them as part of the joint pavilion organised by the association. Stefania Arioli, Marketing Manager at Amaplast, said: "The quality of our leads was good and the technical enquiries often very detailed. The vast majority of visitors came from Russia as well as Ukraine, Belarus and Kazakhstan. The Russian market is currently not an easy place to work.

Thanks to its longstanding presence at interplastica, however, Italian manufacturers have been constantly on site therefore allowing

interplastica and upakovka 2020

them to successfully develop this market." The lion's share of exports from Italian producers to Russia is accounted for by extruders and extrusion lines; these are assets with high value creation and often customised to customers' specific needs.

The next interplastica in Moscow will be held from 26 to 29 January 2021, again concurrently with upakovka.

Exhibitor Testimonials for interplastica 2020

Stephan Doehler, Division Director Sales Europe, ARBURG GmbH + Co KG:

"interplastica is at present the biggest trade fair on the CIS market and a relevant platform for Arburg. We have been represented here for 20 years already and also had plenty of good conversations with both existing and potential customers in 2020. The visitors at our exhibition stand hailed from all of Russia and the neighbouring countries such as Belarus, Ukraine, Uzbekistan, Kazakhstan and Armenia – including key decision-makers. Many of them took an interest in our packaging solutions for which we presented an exciting IMLK thin-wall application on a hybrid all-round injection moulding machine. There was also avid interest from the sectors medical technology and electronics. In general, we have observed a growing demand for high-quality and especially electrical machines on the thriving Russian market."

Alexander Kulik, Sales Director Greater Russia, Dow Packaging & Specialty Plastics:

"We are happy we also took the opportunity to take part in interplastica this year. The conference programme revolving around sustainability came as a pleasant surprise – there were many interesting agenda items and discussions. I am delighted to see that sustainability aspects now also play a more prominent role in Russia. We welcomed customers from Russia, Belarus, Uzbekistan, Kazakhstan, Ukraine and some potential partners from the CIS to our stand. They were interested in recyclable solutions as well as the advantages of Dow's industrial films over lower-cost materials. The Russian market is of high strategic importance to Dow. It is indispensable to listen to the market and to support our local partners."

Latife Karabulut, International Trade Manager, Ekin Makina Plastik San. Tic. Ltd. Sti. Turkey:

"Ekin Machinery's first participation at interplastica was a success. The leads we generated confirm to us that our injection moulding machines are very suitable for the Russian plastics market. Visitors to our stand primarily came from Russia but also from the neighbouring countries."

Olaf Kassek, General Manager, ENGEL Russia:

"We were very satisfied with the number of visitors at our trade fair stand. We received plenty of interest for our fully electric tie-bar-less injection moulding machine with a 6-axle robot for changing mould inserts. The Russian market is a firm fixture for ENGEL despite a little dip in the automotive industry. We were positively surprised with the

remarkable number of guests from Uzbekistan. This confirmed once again that interplastica is the most relevant plastics trade fair for Russia and its neighbouring states."

Ulrich Reifenhäuser, CSO Reifenhäuser GmbH & Co. KG:

"For Reifenhäuser, the interplastica 2020 has seamlessly continued the tradition of the previous event: It has picked up on global developments, was once again better attended and was characterised by a high level of interest from trade visitors. In addition, the Interplastica 2020 gives rise to justified hopes that the market situation will improve significantly in the coming months and that the topic of sustainability will become a major driver for new solutions and thus for economic growth in the plastics industry."

Volker Berger, Regional Sales Manager, Starlinger & Co. Gesellschaft m.b.H.:

"interplastica has always been very important for Starlinger. We now have a market share of 60% in the textiles sector. In the recycling segment the trade fair is very important for making new contacts and deepening existing ones. For us the sales market in Russia is currently very stable. Starlinger has operated a local representation with our people for quite a while now and this is why we can quickly adapt to new market requirements. The footfall was a little lower this year but the quality of meetings was very high. Business deals were closed at the trade fair, too. We also rate the new recycling segment in Hall 8.1 as very positive."

Reinhard Elting, Sales Director, WINDMÖLLER & HÖLSCHER KG:

"In general, we were satisfied with the trade fair. There were fewer contacts with new customers overall, many existing customers found their way to our stand, which was predominantly visited by visitors from Russia. Also striking was a sizeable number of companies from Central Asia – especially from Uzbekistan and Turkmenistan – as well as from the Ukraine. Topics such as the circular economy or raw material savings and plastics replacement solutions were very much in focus. The Russian market can be rated as important by all means and with good growth potential for Windmüller & Hölscher."

Christian Kiene, Project Manager, WKÖ AUSSENWIRTSCHAFT Austria:

"interplastica 2020 proved a big success for the Austrian participants. In Russia personal contacts traditionally rank high for business relations. By taking part in the 2020 trade fair the companies from Austria have demonstrated to their Russian partners that these can also rely on them in economically challenging times. Based on longstanding, successful cooperations and the excellent reputation of Austrian technology know-how, interplastica 2020 also offered newcomers interested in extending their business to the CIS, excellent opportunities to establish profitable new business contacts."

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interplastica forms part of the Global Gate brand, under which Messe Düsseldorf pools its global activities for the plastics and rubber industry. Comprising a total of ten events, this product portfolio leverages the expertise and experience gained by organising the world's No. 1 'K' fair in Düsseldorf and by developing successful regional events. The ten trade fairs in total are professional communication platforms serving as door openers for promising growth markets such as central and Eastern Europe, the Middle East, North Africa, China, India and South East Asia. Complete information can be found at www.k-globalgate.com

Specifically targeting India's process industries

POWTECH India 2020

Following its successful premiere in 2018, POWTECH India, the leading trade fair on the Indian subcontinent for powder, bulk solids and process technologies, will enter its second round this year. POWTECH India will take place at the Bombay Exhibition Center in Mumbai from 9 to 11 September 2020. Companies can register as of now for the trade fair with accompanying congress and supporting programme. Since 2010, Nürnberg-Messe India has been involved in organising events for the powder and bulk solids industries in India.

09th - 11th September 2020: POWTECH INDIA 2020, Mumbai (India)

Every two years, POWTECH India brings together India's experts from the production and processing technology environment. Decision-makers from the chemical, pharmaceutical and food production sectors, but also from the energy, recycling and non-metallic mineral (pit and quarry) industries, can find out all about the technologies that matter to them at the exhibition and accompanying congress. There are solutions on offer for all mechanical processes like pulverising, separating, mixing and shaping, as well as the technologies that support these processes, from handling and filling to dust and explosion protection and process control software. The wide range on display and the presence of international market leaders make POWTECH India, which was previously

known as Powder and Bulk Solids India, an important industry gathering. Exhibitors benefit from direct and focused access to the Indian market. The organiser NürnbergMesse India is expecting around 60 exhibitors and some 2,000 trade visitors at POWTECH India 2020.

"We launched POWTECH India in 2018 with a new concept and name to accommodate the extended scope of the event and the needs of the Indian market even better. We are now going into the second round with a lot of positive feedback. We are delighted to be once again welcoming exhibitors and experts from all around the world to Mumbai in September," says Rucheeka Chhugani, Director POWTECH India at NürnbergMesse India. "Pharmaceutical production in particular, but

also the chemical, food and energy sectors, are currently experiencing positive economic growth in India. There is a large demand for innovations and equipment for production. POWTECH India stands ready as a leading business platform for the process industries and makes it easy for exhibitors to strengthen their contacts in the subcontinent," adds Miriam Hempel, project manager international POWTECH World at NürnbergMesse.

Accompanying congress publishes Call for Papers

In addition to the exhibitor stands, the accompanying conference programme also attracts high-calibre trade visitors to POWTECH India. The trade fair is complemented by a three-day programme of seminars and lectures covering all aspects of powder and bulk solids processing, analysis and handling. This also includes measurement, control and particle technologies. In the past, researchers and developers from India, Australia, Japan, the USA and Europe have presented their solutions at this event. "We welcome contributions from researchers in universities, industrial companies and other research organisations. Contributions covering all aspects of particle science and applications are welcome," says Dr Vijay K. Agarwal from the Indian Institute of Technology, Delhi, who is also the Chairman of the POWTECH India Conference Board. The Call for Papers is open until 31 March 2020. For more information please go to: www.powtechindia.com/CallForPaper.aspx

Interested companies should register now

POWTECH India 2020 starts on 9 September, roughly a month before the opening of POWTECH in Nuremberg. POWTECH India's strategic partners are the associations APV, VDI-GVC, IND EX and DSIV. Interested exhibitors can register now. The necessary documents and other information are available from: www.powtechindia.com/application-form



upakovka and interplastica 2020: Russian Market Back on Track



Forum programmes at upakovka proved very popular

At the last edition of the trade fair duo comprising interplastica, International Trade Fair for Plastics and Rubber and upakovka – Processing & Packaging, there were already signs that the Russian market was moving out of the trough again – at least for the packaging and related processing industry as well as for the plastics and rubber industry. At this year's editions of the two trade fairs held at the Central Exhibition Complex Expocentre in Krasnaya Presnya from 28 – 31 January there were clear indications of stabilisation. A total of 937 exhibitors from 40 countries attracted approx. 24,950 visitors, mainly from Russia and the neighbouring states. The mood in the halls was good and exhibitors praised the high quality of leads.

26th - 29th January 2021: upakovka 2021, Moscow (R)

As a member of the interpack alliance upakovka, with its ranges in the packaging and related processing industry, addresses the target groups, food, beverage, confectionery, bakery, pharmaceuticals, cosmetics, non-food and industrial goods. The food industry is one of the most important manufacturing industries in Russia and of high strategic relevance. Since the start of the food embargo this industry has experienced stable growth and boasts high added value. Russia continues striving to support the increase in domestic production to counteract the dependence on imports of some products. In late 2019 the Russian President Vladimir Putin therefore adopted a "food doctrine" that stipulates further increases in the self-sufficiency rate for the most important staple foods.

Strong Demand for High-Quality Foods

Demand especially for high-quality foods as well as for convenience and fast-food products continues to be high although the current weak developments in purchasing power are holding back sales. According to the VDMA, the sale of pre-packed foods was up by 1.2% in 2019 against the previous year rising to 31.3 m tons. Market researchers

expect demand to pick up again and rise to just under 6% in total to reach 33 m tons by 2024. Above-average growth rates are expected especially for ready-meals, baby foods, breakfast cereals, savoury snacks, high-quality chocolate products as well as sweet pastry goods and snack bars.

Bottled Water und Functional Beverage Trending

The growing health and wellness trend is impacting demand for soft drinks. Bottled water and functional and enhanced beverages are trending. In 2019 sales of soft drinks stood at just under 14 billion litres and are expected to go up by 14% by 2024. Disproportionately high growth is expected for bottled water but also for energy drinks. upakovka 2020 was therefore already supported by the associations Russian Bottled Water Producer Union (BWPU) and Russian Union of Producers of Soft Drinks and Mineral Water (UPSD) in the run-up to the event.

To meet the consumer demand for high-quality and innovative products, the Russian food and beverage industry continues to invest in expanding its production capacities – and they find the matching suppliers and solutions at upakovka. As before, the most important supplier of modern processing and packaging technology to the Russian industry is Germany. Upakovka 2020 again showed that machinery "Made in Germany" is in high demand: German exhibitors were satisfied with the results of the trade fair and expected predominantly good post-fair business, said VDMA, the German Engineering Federation. Over the first 11 months of 2019 German manufacturers exported food machines and packaging machines worth EUR 324 million to Russia.

Unabated Interest in innovationparc Forums

Since upakovka has been organised under the umbrella of the interpack alliance the special theme "innovationparc" – adapted from the interpack trade fair in Düsseldorf – has formed an integral part of the ranges in Moscow. As early as 2019 the programme of the innovationparc forum had generated such interest that it was already



upakovka and interplastica 2020

extended to include a second stage running concurrently with the first. This year the high number of participants once again pointed to even greater levels of interest. As the event kicked off, the SAVE FOOD theme played a pivotal role. Involving the FAO plus experts from government organisations as well as research institutes the forum under the heading "From Food Loss to Circular Economy" dealt with sustainability and the opportunities for a corresponding food production. The contribution made by the packaging sector and related industries all geared to the circular economy and recycling was discussed in the slot "Circular Economy in the Area of Packaging – Expectations and Reality" with a view to various materials. The Russian government placed this topic on the agenda last year to especially address the general problems of disposing household waste in the country. The recycling rate of currently about 7% is to be increased to 36% in 2024. The level of interest taken in the talks delivered was therefore correspondingly high. Topics, trends and problems related to the beverage sector were covered in the session "Beverage Industry and Bottling Technologies – Global Initiatives, Challenges and Opportunities". In this session supported by the UPSD association experts shed some light on different packaging types and new technologies for producers of soft drinks and other fast-moving consumer goods. Finally, the session "Packaging Market Current State and Development Prospects" covered the global packaging market and local trends.

"innovationparc has increasingly developed into a key attraction and special hot spot at upakovka where the exchange on trending and future themes in the industry is centre stage. Precisely this spirit is what a quality trade fair is all about," rejoices Bernd Jablonowski, Global Portfolio Director Processing & Packaging at Messe Düsseldorf.

The next upakovka in Moscow will be held from 26 to 29 January 2021 – again in parallel with interplastica. For more information go to www.upakovka-tradefair.com or contact Messe Düsseldorf GmbH, Ms Lena Maria Brümmer by telephone on: 49 211/4560-7781 or e-mail at: BruemmerL@messe-duesseldorf.de.

Exhibitor Statements on upakovka 2020

Rovema, Alexander Filippov, Customer Service Manager

At the booth, we actively engage with our customers – both existing and prospective. In total, the fair met our expectations, we have participated regularly for many years now. (...)

AURORA PACK ENGINEERING LLC, Alina Eliseeva, Marketing Manager

What really swayed our decision to participate in upakovka 2020 was the scale of the event. The negotiations were successful. The exhibition was attended by many potential customers. Of course, participation in the exhibition was productive. I would especially like to note the work of the technical team and the competent organisational support throughout the exhibition. Great footfall. (...) Our company is interested in participating at upakovka 2021.

VA Systems Moscow Branch, Denis Logachev, Director

We have a wide range of varied equipment, we always bring it to the fair, and this time is no exception. At upakovka, we focus on labelling and marking equipment. (...) The impression of the fair is positive. (...) We have a good location with lots of footfall, and on the first two days there were many visitors. (...)

KRONES AG, Juliane Dorn, Global Communications Europe,

Eastern World, Africa Corporate Communications

The exhibition was good for us and for our clients, we have the opportunity here to discuss open questions and future projects. We presented our production department responsible for retrofitting the preforms. The exhibition is very well known among our clients and it gives us the chance to speak with many of them within a short timeframe. (...)

AETNA GROUP, Egor Kazachkovsky and Sergey Mashentsev, Sales Managers

Our booth demonstrates a semi-automatic stretch film wrapper. This year AETNA GROUP has finalised the development of full-cycle automatic packaging. (...) Here in Russia we make our participation worthwhile by communicating with customers: trying to understand what they currently need, what is in demand, even with small production companies because who knows what they will turn into tomorrow. For their part, customers can also get to know us, we get acquainted, and this also provides good prospects.

OMET Representative Office in Russia, Alexander Romashov, Sales Director

We are pleased with the results of the fair and anticipate being able to commercialise our contacts. After all, OMET has a very wide range of printing and processing equipment from printing self-adhesive film to cardboard and flexible packaging. (...)

Russkaya Trapeza Moscow Branch Office, Igor Medvedev, Director

At this fair, we are presenting two of the most in demand types of equipment (...). upakovka kicks off the year and allows us to get into the swing of things: meet old customers and advise new ones on equipment. As for the results, upakovka 2020 is interesting in that while it does not boast heavy customer flows like some other, larger trade fairs, the quality is good here. If visitors come and show interest in something, you sense this is a conscious decision.

SIG Combibloc, Anna Avchuknova, Marketing Manager

This is our first time participating at the fair. We were primarily interested in the business programme because it seemed extensive and relevant. (...) SIG Combibloc manufactures equipment for the aseptic filling of liquid foods and aseptic cardboard packs, and we decided to assess upakovka's relevance to the food and beverage industry, since there is currently no platform for exploring packaging innovations specifically relevant to the foodstuffs market. At the fair, we did not just work at the booth but also took part in the business programme where we spoke of ecological innovations. (...)

PACKLAND, Vladislav Khasanov

upakovka is an international event seeing a significant rise in exhibitor and visitor numbers. Various cardboard packaging options were presented at our booth. There were enough visitors, so we plan to participate in 2021.

Keramik Makina, Tolga Sertel, Sales Engineer

Generally, we were satisfied this year, more than last year and yes, we'll be participating again next year! (...)



Chillventa AWARD honours flagship projects for energy efficiency

In 2020, NürnbergMesse will present the Chillventa AWARD for the third time in partnership with Bauverlag, the publisher of the HVAC&R trade journals "KKA Kälte Klima Aktuell" and "tab – Das Fachmedium der TGA-Branche". The award recognises completed projects that in an era of climate change can be considered outstanding examples of energy efficient and environmentally friendly refrigeration, AC or heat pump technology.

13th - 15th October 2020: Chillventa 2020, Nuremberg (D)

In keeping with the motto "Chillventa Connecting Experts", the jury's evaluation has previously focused on the effective teamwork between the project stakeholders and their collaborative design and planning process. Although this aspect will still be included in the jury's evaluation in 2020, the main criterion will now be the energy efficiency of the technology, which also needs to impress in respect of its functionality and technical innovations. The expert panel will also assess the exemplary use of modern digital tools and methods for the design and operation of the system.

Teams of experts – system engineers, planners, designers and operators – are eligible to participate in the four categories commercial refrigeration, industrial refrigeration, air conditioning and heat pumps. The Chillventa AWARD will be presented during Chillventa in Nuremberg from 13-15 October 2020.



Call for projects: chillventa.en/award

Although exhibitors at Chillventa are not eligible to take part directly, they are cordially invited to encourage the system engineers, planners, designers and operators who have realised their best reference projects to enter the competition and are welcome to actively help them put together the application documents.

The Chillventa AWARD offers an excellent opportunity to present products exhibited at the event to a wider professional audience.

Good prospects for Chillventa 2020

As a leading international fair, Chillventa is performing exceptionally well and is set to enjoy renewed growth in 2020. Already, six months before the event, nearly all stands have been booked. In 2020, the Chillventa CONGRESS will once again deliver knowledge-sharing at the highest professional level on the day before the fair. As always, the congress will be a source of comprehensive high-quality information, covering all segments of the refrigeration, AC, ventilation and heat pump sector.

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pacprocess MEA delivers a convincing debut

Egyptian prime minister opens with a tour of the trade fair

The first pacprocess Middle East Africa, which took place at the Egypt International Exhibition Center in Cairo from 9 to 11 December 2019, was impressive from the start. This interpack alliance trade fair was organised by Messe Düsseldorf in cooperation with IFP Group and Konzept. Exhibitors were very satisfied with the quality and number of visitors as well as the organisational quality and location of the event. They also regarded combining pacprocess MEA with the already well-established Food Africa trade fair, which took place in parallel, an excellent idea. The two events drew a total of 21,640 visitors.

Prior to its launch, pacprocess MEA already received support from the highest political levels, as it was sponsored by the Egyptian President H. E. Abdel Fattah al-Sisi. Prime Minister Moustafa Madbouly's opening tour emphasised the high regard the policy makers have for the trade fair; they count on viable trade fair concepts to draw investors to the land by the Nile and are developing markets accordingly. Egypt pursues the self-imposed aim of becoming a business hub for the region. Besides renowned companies, a large number of government institutions and associations are represented on the pacprocess MEA advisory board.

"pacprocess MEA has clearly exceeded our expectations as well as those of the companies involved. The feedback we received regarding generated leads and general interest was exceptionally high for a debut event. The interest in modern process and packaging technology and the corresponding materials is tangible in this country," said Bernd Jablonowski, Global Portfolio Manager at Messe Düsseldorf, clearly pleased with the outcome.

pacprocess MEA 2019 welcomed 125 exhibiting companies, among them 31 international companies from 12 countries. The German delegation was represented by ten companies at the respective group stand. The event addressed the interpack alliance's eight core target groups: food, beverages, pharmaceuticals, cosmetics, confectionery and baked goods, consumer and industrial goods – covering the entire value chain in each category. The trade fair also addressed providers of packaging, packaging materials and the relevant manufacturing technology. Recycling, environmental technology and packaging printing were other topics of interest at the event.

The combination of pacprocess MEA with Food Africa, a trade fair for food products organised by IFP Group and Konzept, proved ideal. In general, all companies agreed that this parallelism allows for a great many synergies in the field of food. Both events were accompanied by



an excellently attended conference programme in the trade fair halls, with speakers who focussed on general topics such as sustainable packaging and the recycling economy, future industry trends as well as SAVE FOOD. Contents specific to the region were also addressed, such as important trade agreements in Africa and new export regulations.

The exhibitor feedback on the trade fair run in general was also extremely positive. The event clearly exceeded the expectations of many companies; as a result, some already expressed a strong interest in the next edition of pacprocess MEA. This annual event will take place at the Egypt International Exhibition Center in Cairo from 17 to 19 December 2020, once again in parallel to the Food Africa trade fair. Exhibitors can contact Messe Düsseldorf to register.

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Vetter aligns its development service laboratory portfolio

- Bundling of competencies optimizes workflow of customer projects
- Further expansion of laboratory space to continue through 2020
- Company continues to invest strongly in its future

Vetter has brought together its development laboratories in one Ravensburg site end of last year. Designed to improve workflow and enhance customer benefits within the daily support in complex development projects, the services at the 1,800 sqm building include process development as well as functional and specification testing of packaging systems, chemical-analytical and biochemical analysis and particle characterization. State-of-the-art non-GMP laboratory space and equipment combined with a leading-edge GMP analytical laboratory now allow for increased capacity and optimized work spaces.

At present, more than fifty employees work in the new labs. By bringing the laboratories under one roof, employees easily share expertise and know-how to improve and simplify information exchange, leverage synergies and reinforce an overall positive work atmosphere. Overall customer will benefit from the alignment. Prior to the bundling of its laboratories, the development studies and the corresponding analytical services for testing during process or packaging material development took place in several labs at different locations in Ravensburg and Langenargen. By sequencing these services, processes

have been synchronized and handling issues reduced, all leading to numerous benefits primarily for customer projects, but also for projects undertaken within the company.

"Our customers are excited and impressed with the new and modern development laboratories and their increased capacity. Now they can follow a complete development process and its individual steps, since it proceeds throughout the labs, all within the same building," said Dr. Claus Feussner, Senior Vice President Development Service. Expansion will continue within the building throughout the year and includes still more lab space and the provision of additional innovative analytical equipment and lyophilizer capacity.

Vetter is also committed to further process optimization and capacity expansion in filling and secondary packaging of injectables at all its sites. This is based on increased global customer demand for the development and commercialization of promising new compounds.

Vetter Pharma International GmbH
D 88212 Ravensburg



Modern laboratory environment in the new 1,800 sqm building. (Source: Vetter Pharma International GmbH)

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