Leica Microsystems Launches High Pressure Freezer with Integrated Light Stimulation for "Flash-and-Freeze" Experiments

New Insights Are Just a Millisecond Away

Leica Microsystems launches the Leica EM ICE, a new generation High-Pressure Freezer with fully integrated light stimulation option.

Leica Microsystems launches the Leica EM ICE, a new generation High-Pressure Freezer with fully integrated light stimulation option at the precision of a millisecond. High pressure freezing is currently the only method for preserving aqueous samples in their close-to-native state at nanometer resolution. The Leica EM ICE not only enables users to cryo-immobilize samples without introducing structural alteration, but it gives researchers the possibility to design novel experiments as the Leica EM ICE offers the combination of high pressure freezing and light stimulation. The instrument enables users to synchronize high-pressure freezing and light stimulation with the precision of a millisecond, capturing dynamic phenomena to further analyse them at nanometer resolution. The precise correlation between the light impulse and the time of freezing is essential for revealing the intricate changes in fine structure and fundamental processes in life science and industry research. The instrument offers five different wavelengths for light stimulation and can freeze up to nine samples consecutively with its new sample storage system. Samples are frozen within one second of having been placed in the specimen carrier and brought to liquid nitrogen temperatures (-195.7°C) at which they will be stored until further processed.

Dr. Cveta Tomova, Product Manager at Leica Microsystems says: "The Leica EM ICE is a powerful tool that can bring to light new discoveries and even help understand life-sustaining processes. It is the only instrument capable of synchronizing high pressure freezing and light stimulation with a millisecond precision. The platform brings together light, time, and sample preservation on a new level. This is a combination of quality and technological innovation, designed to assist researchers in achieving scientific breakthroughs. High pressure freezing combined with light stimulation can be applied to any light-sensitive compound such as lotions, photoactivatable composite materials, proteins, and various biological samples. It can push further our understanding of highly dynamic

New Insights Are Just a Millisecond Away

processes, such as neurotransmission at the synapse."

Light stimulation with the Leica EM ICE can be performed with different wave-lengths, i.e. blue, UV, green, red, and amber. This is possible with the inbuilt connection for the LED light modules, which the instrument software automatically recognizes. The software-integrated programming offers a range of parameters to assist scientists in designing "flash-and-freeze" experiments. The integrated light stimulation of the Leica EM ICE facilitates precise correlation between the light stimulus and the moment of freezing. "All this brings standardisation, reliability and at the same time flexibility to facilitate research in various scientific fields," says Tomova.

Time is of essence, particularly for optimal sample preservation. The automated freezing cycle of the Leica EM ICE ensures the sample is frozen within a second after being placed in the specimen carrier. The computerized process starts with simultaneous cartridge assembly and initiation of the freezing process and is completed with the automatic sample release into the liquid nitrogen storage container, thereby preventing devitrification artefacts.

Users can freeze up to nine samples consecutively which helps them focus on the essentials and not the handling details. The Leica EM ICE sample storage Dewar has a programmable storage sequence for three separate positions. This permits freezing combinations of different samples or different conditions of the same sample subsequently.

In electron microscopy sample preparation, Leica Microsystems focuses on workflow solutions. The Leica EM ICE is a key part of multiple workflows. "Our ultimate goal is to help our customers obtain the breakthrough insights they strive for. This is why we provide the technology which can do what instruments before could not," says Tomova. "At the same time, our goal is to bring comfort and consistency to researchers' tasks. One example: To understand the complex changes in the fine structure of a sun-screen lotion exposed to UV light, a sample can be high pressure frozen in the Leica EM ICE with light stimulation under a specific doze of UV exposure. The frozen sample can then be coated in the high vacuum coater Leica EM ACE600 – still under cryo conditions – and then imaged in the cryo scanning electron microscope. The transport system Leica EM VCT100 serves as a shuttle from one step to the next, always preserving cryo and vaccum conditions."

Leica Microsystems GmbH D 35578 Wetzlar

Dear readers, dear subscribers,

now it's October 2015 and we have a lot of interessting news and a lot of interesting events for your appointment calendar.

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

Yours sincerely

Reinhold Schuster

The map shows where the readers of the cleanroom online newsletter are coming from: if you want to get in contact with these readers please contact us.

NEW

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

James Tucker marketing director at Ecolab Contamination Control explains the dangers of exposure to cytotoxic drugs among operators and how his organisation is taking specific steps to reduce this through product development.

Recognizing risks and reducing exposure to cytotoxic drugs

Klercide Sporicidal Active Chlorine Spray. Klerwipe polyester dry wipes and Klerwipe 70/30 IPA wipes.

Occupational exposure to cytotoxics is a serious issue within the pharmaceutical and compounding industry and is likely to occur when control measures are limited. The types of activities which put operators, pharmacists and laboratory staff at most risk are drug preparation and cleaning up residues and spills.

One of the key challenges posed by cytotoxics is that as well as being difficult to remove from surfaces and equipment they can continue to present a risk directly as waste. It is therefore essential that the right procedures and products are implemented to ensure contamination is kept to an absolute minimum.

Under the Health & Safety Executive Control of Substances Hazardous to Health regulations (COSHH), there needs to be comprehensive assessments of the risks arising from handling cytotoxic drugs at every stage of use and disposal.

Control and monitoring of the effects of exposure has been studied in detail with a range of biological endpoints including DNA damage, HPRT mutations and thioether excretion, among others, which highlight the seriousness of this issue.

Analytical methods are also now being employed to measure the level of environmental contamination in the workplace, and numerous studies have been published on environmental wipe sampling for these drugs as the issue becomes more widely known.

Similarly, the data collection and actions to identify and remedy exposure levels of cytotoxic drugs is definitely on the increase.

Two key agencies responsible for conducting research and making recommendations, the National Institute for Occupational Safety and Health (NIOSH) and the Institution for Statutory Accident Insurance and Prevention in the Health and Welfare Services (BGW), have both taken steps to raise awareness on the subject.

NISOH has published an alert; 'Preventing Occupational Exposure to Antineoplastic', whilst BGW has conducted a study in Germany, 'Monitoring-Effect for Wipe Sampling in Pharmacies' (MEWIP), in which cytotoxic drugs were found on 61 per cent of all wipes used in three sampling positions within pharmaceutical cleanrooms; worktop, floor and fridge. Contamination levels of over 70 per cent, 60 per cent and 50 per cent respectively were observed. This has led to the implementation of a reference value of 0.1ng/cm sq. for pharmaceutical cleanrooms in Germany, Switzerland, Austria and Poland dealing with cytotoxic drugs.

The elimination of cytotoxic drugs on surfaces, often caused by spillages, should be a major priority for the industry. One definite way to achieve this is through the controlled use of Ecolab Contamination Control products which have been manufactured in a cleanroom environment, with a proven and tested capability in their safe removal and destruction.

The independent work performed by Institute of Energy and Environmental Technology (IUTA) recommends a combined procedure of spraying a Klerwipe polyester dry wipe with Klercide Sporicidal Active Chlorine spray. Following a contact time of 5 minutes, the surface should then be wiped with Klerwipe 70/30 IPA impregnated wipes. This combination is proven to have optimum efficacy in the removal of a full range of cytotoxic compounds from surfaces, eliminating up to 99.9 per cent of them.*

Other measures as part of a robust operational best practice procedure to minimise exposure include the safe handling, storage and transport of cytotoxic drugs and waste material containing or contaminated by them, along with effective disposal.

These are in addition to using totally enclosed systems where practical, controlling exposure at source by using adequate extraction systems and providing staff with the necessary protective equipment.

Mr Tucker concludes: 'Ecolab Contamination Control has developed a range of products that are scientifically proven to reduce the risks associated with cytotoxics. Uniquely they both remove and denature the cytotoxic residues when used in combination, making disposal safer and ensuring contamination control right along the waste removal journey.

'We fully expect other national pharmaceutical industries to follow the lead of those European countries that have already introduced specific legislation on this important subject, but it still remains to be seen. Regardless of this it should not deter responsible employers from taking the initiative and adopting their own proactive approach.'

* For further information on the test work carried out please contact Ecolab Contamination Control for technical report TR1502R. The trial was conducted using Ecolab's Klercide and Klerwipe products; data is not transferable to similar products.

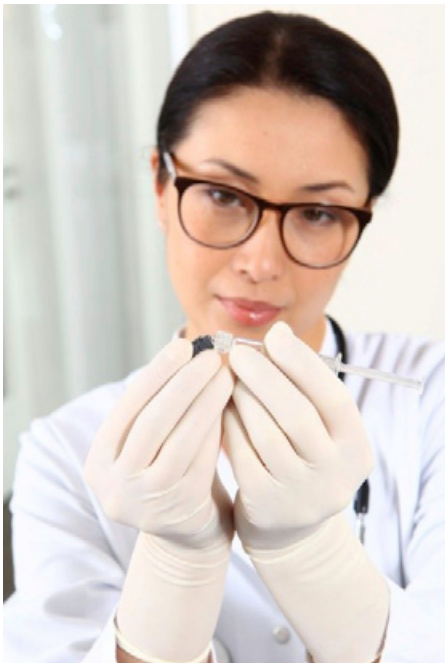
ECOLAB

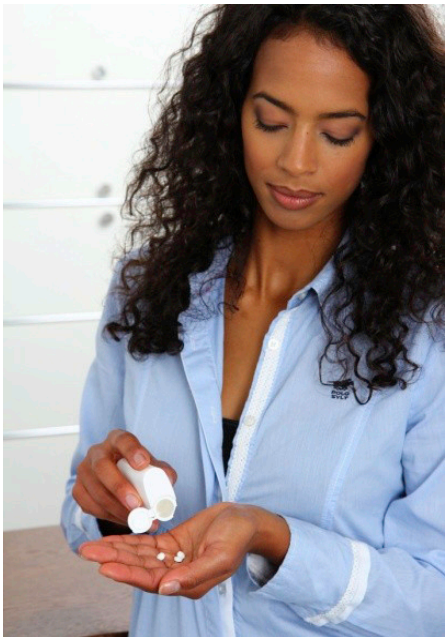
Ecolab Contamination Control
Brunel Way, Baglan Energy Park
SA11 2GA Neath
Vereinigtes Königreich Großbritannien und Nordirland
Telefon: +44 2920 854 390
Telefax: +44 2920 854 391
Mobile: +44 7557 190597
E-Mail: emily.buck@ecolab.com
Internet: http://www.ecolabcc.com/

User-friendly pharmaceutical primary packaging and delivery devices for patients, physicians and nursing personnel

CPhI 2015 – Gerresheimer focuses on usability

13th - 15th Oct. 2015: CPhI worldwide, Madrid (ES)





Usability - The objective is maximum technical reliability

"More and more people are self-medicating," said Jessica Kreher, a graduate designer specializing in usability and Sales Engineer at Gerresheimer Medical Systems. She added that the demographic changes taking place in many countries around the world have contrib-uted to the self-medication trend, as has the rapid increase in access to medical care in developing nations.

Jessica Kreher will be illuminating the advantages of usability in a pres-entation for CPhI visitors entitled "Usability Engineering for Drug Delivery Devices "at 2 p.m. on October 13.

International design control regulations apply to usability engineering programs for medical and pharmaceutical products. The risk management standard, ISO 14971, sets out the application of risk management to medical devices in order to mitigate the technical and operational risks as far as possible. The objective is to maximize user safety, for example, by ensuring that an inhaler administers the entire required dose of an asthma drug.

Usability affects both patients and health professionals such as doctors and nurses. Gerresheimer Medical Systems' product portfolio extends from easy-open tablet bottles and an application aid that helps eye drop users to position the bottle properly to syringes, injection pens, asthma inhalers and an optimized heart catheter delivery device.

Glass syringe study

Good usability is also important in glass syringes. The Gerresheimer Center of Excellence for ready-to-fill glass syringes in Bünde examined 20,000 syringes in different sizes and configurations, and for various applications, between 2011 and 2015. The large-scale study identified the factors that are decisive to optimum syringe function. All kinds of pharmaceutical drugs are administered in pre-filled syringes. They simplify the entire injection process because they already contain the correct quantity of the drug and are ready to use immediately. Prefilled syringes speed up hospital and clinic processes. They also allow people without medical training to perform the injection or the patients to inject themselves. Auto-injectors, which contain a pre-filled syringe, are increasingly being used by patients in their homes. For example, they permit arthritis sufferers to inject their medication without another person's assistance.

DUMA Twist-Off Advanced containers

One of Gerresheimer's longstanding best-selling branded products, the Duma Twist-Off plastic container, is designed for usability and functionality. One of the improvements which have been made is the introduction of a rounded base to eliminate thin areas. This new design achieves an even more uniform wall thickness all over the container, offering improved barrier properties compared to a more organic design. Container volume, average wall thickness and the main dimensions are key specifications for registrations and stability tests, so they have not been changed. The new containers are compatible with high-performance Duma Twist-Off closures and the existing Duma Twist-Off range because they have the same filling line settings.

New DUMA Twist-Off closure – senior-friendly, child-resistant and tamper-evident features in one single closure

These features reflect the constant focus on child safety and serious accident prevention, as well as the growing senior population, greater demand for packaging solutions designed for people with disabilities and the trend of self-medication. The improved Duma Twist-Off Closure 03833D has a new design that meets these conflicting needs. A pictogram on the closure explains the special opening mechanism that prevents children from being able to open it (child-resistant feature), and a castellated design with "turrets" provides a better grip and can be opened very easily with a pen or another suitable implement (senior-friendly feature).

Gerresheimer AG D 40468 Düsseldorf

Company maintains focus on quality to meet customer expectations

Cherwell appoints Harshad Joshi as new Quality Manager

Harshad Joshi, Quality Manager, Cherwell Laboratories

Cherwell Laboratories, specialists in cleanroom microbiology solutions, are pleased to announce the appointment of Harshad Joshi as Quality Manager. Harshad's appointment marks Cherwell's commitment to providing the highest quality products, enabling customers to retain complete confidence in the products Cherwell supply them with.

Andy Whittard, Managing Director of Cherwell, commented, "We are delighted to welcome Harshad to Cherwell Laboratories. Harshad brings a wealth of experience within industrial microbiology to this role and we are really looking forward to working with him. Quality is a vital component in what we do. Harshad's experience strengthens our offer and reaffirms our strategy to provide to supply high quality products backed up by excellent customer service."

Harshad holds over 20 years' experience as an industrial Microbiologist. He has extensive experience within the global pharmaceutical industry, in sterile formulations, solid dosage forms and medical devices. Most recently, Harshad worked as Senior Quality Manager at Biocon Limited, one of Asia's largest bio-pharmaceutical companies and continues to work towards his eligibility for Qualified Person(s) status.

Commenting on his new role, Harshad Joshi said, "I am looking forward to leading the Quality team at Cherwell Laboratories so that we can further assist and partner our customers in problem solving and making a difference in their goals of making safe, efficacious and high quality drugs."

Harshad's industry experience, knowledge and technical expertise will further enhance Cherwell's position as a leading supplier of prepared microbiological media and other cleanroom microbiology solutions for pharmaceutical and related industries. His knowledge and understanding of the quality concepts and cGMP requirements within the global pharmaceutical industries will help Cherwell to succeed in their aim to continue to meet or exceed its customers' expectations.

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

LABVOLUTION showcases tomorrow's smartLAB

Future of the laboratory: the "ballroom concept", featuring movable furniture and invisible devices

06th - 08th Oct. 2015:
BIOTECHNICA, Hannover (D)

The traditional laboratory is undergoing a sweeping transformation, with the trend towards digitization, networking, mobility and new requirements all contributing to the shape of tomorrow's labs. The new LABVOLUTION exhibition provides a look at a possible future scenario from 6 to 8 October in Hannover, parallel to BIOTECHNICA. The smartLAB special event presents an intelligent model laboratory, providing a welcome opportunity for dialogue and debate on the future of the lab on the part of players from the worlds of science, R&D and industry.

"Soon we'll only have an edge of the table to work at," groans a lab technician. "When I need space, first I shove the machines out of the way," jokes a technical assistant. "I'd rather write my reports at home than at the lab," declares another. Many laboratory devices have become smaller, others are still large but have taken on additional functions to replace other machines. Modern automatic pipettes now require reagents in nano- instead of microliter volumes. This reduces the amount of space needed for media canisters. In some labs, media supplies are integrally stored in the ceiling or interior walls. Others have shifted refrigeration units to separate rooms. This trend can be made even more economical: at university facilities you can find freezers in the hallways or under the stairs. And yet, no matter what, there are always new devices and once again too little room to work in the laboratory.

Look a little more closely and you can see that this lack of space is already built into the design. Nowhere is this more obvious than with new and renovated laboratories in public institutions. Work spaces there are built according to existing employee functions, rather than expected fluctuations, changing tasks and work processes. Permanently appointed laboratories are the usual rule: chemists here, biologists there. Over there are the offices for IT and administration. At Roche things have been done differently for some time already. "Activities have become more varied," explains Jürg Erb-Tanner, Roche Basel Facilities Architect, of the changes in planning methods. "Here we no longer separate by discipline, but by project. This means that different disciplines work together in the same building, or even in the same room. Naturally this has limits when it comes to safety precautions, but people must be able to come together and discuss their work – at least have a good visual connection. The building has to be able to react to changes in work processes." One practical solution is designing a laboratory around the "ballroom concept". Depending on the given needs, partition walls can be installed or removed, rooms expanded or reduced, and above all the necessary devices installed and used as needed. Louis Kahn is the pioneering architect in this area. He built the Salk Institute for Biological Studies in La Jolla, California in the 1960s and designed the laboratories using the ballroom principle. This system has been working for more than 50 years in spite of the increase in machines, more staff and changed work activities.

Kitchens as the model

How do you set up the ballroom for an adaptive laboratory? These days you can get lots of practical ideas from modern kitchens. Swedish furniture maker IKEA made a strong impression with a model kitchen for the year 2015 (www.conceptkitchen2025.com) at Expo Milano. Self-cleaning ovens and energy-saving household appliances have been around for a long time. These days some appliances can be controlled remotely, without even having to purchase a new device – all you need is an economical smartphone app. The challenge for the design of the model expo kitchen was to enable multifunctional use in a small space. There was no stove to be seen in Milan. Instead, the stovetop was integrated into the table. For other household appliances, the device was eliminated but the function maintained: a scale is also integrated into the tabletop. The use of technologies and materials that are new to kitchen furniture enables new features. The kitchen knife is connected to a camera, so that a display on the stovetop shows tips on how to fillet properly during cutting. The refrigerator has disappeared from the concept kitchen. Anything that needs to be kept cold or warm is now in the cupboard, divided by food type into plastic containers. An RFID chip on the boxes ensures the correct temperature and storage, precisely matched to the content. The kitchen of the future not only saves space, it is also environmentally friendly. There are sinks that differentiate between wastewater and gray water, for example. The former is drained immediately, while the latter can be reused. The garbage chute sorts the trash.

It is not a very big step from here to the laboratory. However, most laboratory suppliers have traditionally been focused on their own products and technical possibilities. This leads to amazing machines, but in the form of autonomous solutions that end up requiring ever more space in the lab. Those who can develop a comprehensive vision of how users utilize the entire space can escape this technology trap. IKEA has understood that it is not enough to simply offer furniture in the future. For IKEA that means integrating foreign objects and suppliers into their own value creation ecosystem. It is no longer products, but product benefits being sold.

smartLAB: Suggestions for a future laboratory design

Visualizing ideas, a holistic view, looking at the bigger picture and stimulating discussion – these are the goals of smartLAB. Today if chemists and biologists work side by side in the same space, if things are no longer pipetted, shaken and stirred in the lab, if non-laboratory tasks take place in the same space for practical purposes, if people move back and forth between labs in different places for the same project, if a single workspace is used by several people – how can such a room be designed? The traditional answer is modular, but practice has shown that modular is not enough. The smartLAB takes a fresh look at all this and presents ideas for solutions.

The room is divided into activity zones, and people with varying tasks move between them. The devices follow the users. Hexagons provided by laboratory furnisher Köttermann for the visionary smartLAB laboratory form the basic structure. These six-sided modules offer many possibilities for flexible use and form a space-saving honeycomb structure. From idea to completion of a laboratory takes between eight and ten years, for an expected operating life of 20 to 25 years. Jürg Erb-Tanner has seen that smart infrastructure design can pay off later in substantial savings in operating costs, because changing installations involves high

Future of the laboratory: the "ballroom concept", featuring movable furniture and invisible devices

labor costs, can shut down units for weeks or even months, and requires operations to be outsourced. When it paralyzes work, says Erb-Tanner, cheap can get expensive fast, and slow down innovation.

The "smartLAB – intelligent laboratory of the future" work group includes Hannover University with its Institute for Technical Chemistry and Laser Zentrum Hannover, joined by the companies Eppendorf, Fraunhofer Institute for Manufacturing Engineering and Automation, iTiZZiMO, Köttermann, Labfolder, Merck, PreSens Precision Sensing, Sartorius, Stäubli Tec-Systems Robotics and Deutsche Messe.

Deutsche Messe AG
D 30521 Hannover

Premiere of the special exhibit at LABVOLUTION

Twelve partners assemble the SmartLAB - the intelligent laboratory of the future

Smart, networked and automated – these will be the key features of tomorrow's laboratories. A look into the future and an overview of today's existing possibilities can be found at the smartLAB in Hannover from 6 to 8 October. "smartLAB – the intelligent laboratory of the future" is a special exhibit being shown for the first time at the new LABVOLUTION trade fair. Twelve industrial and scientific partners have been working together for nearly a year to create this realistic vision of a future laboratory. Live scenarios present how laboratory life is changing in the era of digitization, and what benefits this brings. A Laboratory 4.0 forum program is being held simultaneously in the 400-square-meter special area.

The smartLAB partners are:

Leibniz University of Hannover Institute for Technical Chemistry

The Leibniz University of Hannover Institute for Technical Chemistry (TCI) is the central coordinator for all activities contributing to the smartLAB showroom. This includes the basic blueprints for the laboratory structure as well as the design of the sample applications and the entire technical implementation for presentation of the showroom concept. Key aspects of the technical execution are the practical design of the lab infrastructure, and the digital networking of all the devices to be used with a laboratory management system as well as select backend systems. TCI coordinates the individual efforts of all partners to build a fully digitally networked and interactive laboratory environment, never before realized in this form to date. TCI is also a key contributor to the development of the smartLAB presentation materials and the smartLAB showroom exhibit at LABVOLUTION.

Eppendorf

Eppendorf is showcasing the integration of its lab machinery and consumables in digitized work processes at the SmartLAB joint stand. The customer benefits of these solutions in terms of electronic documentation, process monitoring and the automation of frequently repeated laboratory tasks are demonstrated using real-life examples. Says Dr. Jan-Gerd Frerichs, Director of Information Integration at Eppendorf: "As a premium supplier to the life sciences sector, Eppendorf keeps the focus on our customers' needs. Participating in the smartLAB at LABVOLUTION provides us with the perfect forum to demonstrate tomorrow's trends in an interdisciplinary setting. It is also an outstanding opportunity to meet with our customers directly."

Fraunhofer IPA

The Laboratory Automation and Biomanufacturing Engineering department of the Fraunhofer Institute for Manufacturing Engineering and Automation IPA is supporting the smartLAB with device and software networking. Fraunhofer IPA bases its approach on the SiLA standard (Standardization in Lab Automation, www.sila-standard.org), which describes standardized communication between control systems and laboratory machines that enables fast and easy exchange between devices as well as a high degree of system flexibility, just as the smartLAB requires. The Fraunhofer IPA software libraries are used for device integration, which makes it possible to rapidly generate SiLA drivers for any machine and connect them to control software or an electronic lab notebook. This means devices are automatically configured and data automatically stored in the right place, even without full automation of the lab process.

iTiZZiMo

iTiZZiMo is presenting an application on smartglasses that supports lab workers in conducting experiments while also documenting the procedures. The sample experiment on exhibit involves the effects that different types of stirrers have on the mixing behavior of chemical components. The application could work with any other process in the laboratory as well. The iTiZZiMo Simplifier offers universal deployability: complete documentation, complete replicability, and world-class safety for your most important employees: the doers. The iTiZZiMo applications reduce time-to-result, without detracting from cost-to-result. The smartglasses guide workers throughout the experiment, which is documented via video recording. In this way the experimental procedures can be recorded and checked without the need for additional human resources. Seamless documentation supports later replicability.

Köttermann

Various manufacturers showcase the future of the laboratory in the smartLAB. No matter what it will look like, one thing is certain: intelligent, flexible lab furniture and surfaces will play an important role. As the world market leader for steel laboratory furniture and with the experience of more than 1,000 successful projects completed each year, Köttermann is participating in the smartLAB with the fitting out of modular, interconnectable lab hexagons. In close cooperation with the LABVOLUTION partner companies and the University of Hannover, flexible furniture modules were developed based on the ballroom concept: furniture in the future will be more functional, more flexible and able to perform more tasks, such as data transfer and other functions. "We have more than 65 years of laboratory experience

Twelve partners assemble the SmartLAB - the intelligent laboratory of the future

and are familiar with all lab applications in detail. We've contributed this expertise extensively to the smartLAB work group. The result is flexible laboratory countertop landscapes that adapt to the given applications for optimal work processes," says Tobias A. Thiele, CEO of the Köttermann Group.

labfolder

Ever more incalculable volumes of data are produced in modern research and production laboratories. The labfolder digital lab notebook helps to collect this data, document it in accordance with guidelines and simplify its evaluation. "Networking players in the lab, whether they are people, machines, materials or information, is labfolder's mission within the smartLAB," explains Simon Bungers, labfolder CEO. labfolder's digital laboratory notebook also makes it possible to implement previously designed structured processes in the lab with the help of a support system, and document them during implementation without additional effort. The individual work steps are carefully checked and automatically logged. Devices used in these work steps can be controlled directly from labfolder.

Laser Zentrum Hannover

Laser Zentrum Hannover (LZH) is an independent, non-profit research institute that stands for innovative research, development and advice. The interdisciplinary collaboration of scientists and mechanical engineers at LZH supports innovative approaches to challenges in a wide range of fields. LZH is demonstrating at LABVOLUTION how laser additive manufacturing can shape the laboratory of the future. "With laser additive manufacturing, extremely precise components, perfectly adapted to their respective uses, can be manufactured from plastic and metal," says Dr. Dietmar Kracht, Executive Director of LZH. LZH is contributing to the lab of the future by showing how 3D printing can be used to make specially adapted laboratory supplies available directly onsite.

Merck Millipore

Another smartLAB partner is Merck Millipore. Merck Millipore is a life sciences subsidiary of Merck Germany. In the framework of the global Merck group's life sciences businesses, Merck Millipore offers a broad portfolio of powerful and innovative products, services and business relationships that support customers in the biotech and pharma industries in their research, development and production activities. Its targeted collaboration with customers makes Merk Millipore a strategic partner in the acquisition of new scientific and technical engineering knowledge, helping to fully exploit the potential of life sciences – even more so, given that Merck is one of the three largest investors in research and development efforts in this area. Merck Millipore employs around 10,000 people in 66 countries, and registered revenue of €2.7 billion in 2014. In the USA and Canada, Merck Millipore operates under the name EMD Millipore.

PreSens

PreSens is participating in the smartLAB via the integration of a non-invasive measuring device for O2, pH and biomass monitoring. Networking through a central controller for multiple devices allows measurements to be combined with other analysis data. One of the features of fiber optic sensor technology is contactless sensor reading through culture vessel walls. "Our contactless measurement technology is an ideal match for the flexible smartLAB concept, because all the measurement electronics can be embedded in the laboratory bench. The specimen is simply placed above it," says Dr. Gernot T. John, Director of Marketing and Innovation. Data on oxygen content, pH and biomass development in the culture vessels can thus be gathered rapidly and without the need to takes samples. In addition to significantly reducing workloads, this will make a decisive contribution to the assessment of bioprocesses. PreSens with its staff of more than 80 is a leading provider of fiber optic sensor technology for oxygen, pH and CO^2 measurement. The company's latest innovation in collaboration with the University of Hannover now also enables online monitoring of biomass in flask shakers. PreSens sensors have been used for research and production in the life sciences sector for more than 15 years.

Sartorius

Pharmaceutical and laboratory supplier Sartorius is also participating in the smartLAB initiative to actively shape the future of the laboratory. "Laboratory digitization presents a central challenge, which due to its dimension and complexity can no longer be solved by lab operators or lab equipment suppliers working alone. That is why we are so pleased to enter into dialogue with users and providers in research and industry at LABVOLUTION, and to discuss concepts for tomorrow's laboratory via the smartLAB presentation. One focus here will be the use of mobile devices for data integration and availability," says Dr. Reinhard Baumfalk, Vice President Instrumentation & Control Technologies at Sartorius. The company will present a selection of its products at this special exhibit, including Cubis, the world's only modular, configurable analysis balance, the ultrapure water system arium pro, the BIOSTAT A fermenter and laboratory consumables.

Stäubli

Among the growth markets on which Stäubli focuses its manufacturing efforts is the development of robots for the medical and pharmaceutical industry. Along with speed and precision, factors such as particle emissions, easily cleanable surfaces and maximum operating time play a decisive role in laboratories. These are the areas in which Stäubli robots excel, with their enclosed design and patented drive technology. Stäubli is bringing a TX60L cleanroom robot to the smartLAB special event, which will be embedded in the honeycomb layout of the lab architecture. There the cleanroom robot demonstrates the handling of an Erlenmeyer flask. In the associated exhibit, Stäubli is also showcasing the TX40 six-axis robot in the stericlean version. The TX stericlean robot series can work over long periods in aseptic production areas, thanks to its special enclosure, the use of stainless steel for critical parts, and a special surface treatment. It represents a breakthrough for robot-assisted automation in aseptic conditions.

Deutsche Messe

With revenue of 280 million euros (2014), Deutsche Messe AG ranks among the world's ten largest trade fair companies and operates the world's largest exhibition center. In 2014, Deutsche Messe planned and staged 134 trade fairs and congresses around the world – events which hosted a total of over 41,000 exhibitors and some 3.6 million visitors. The company's event portfolio includes such world-leading trade fairs as CeBIT (IT and telecommunications), HANNOVER MESSE (industrial technology), BIOTECHNICA (biotechnology), CeMAT (intralogistics), didacta (education), DOMOTEX (floor coverings), INTERSCHUTZ (fire prevention and rescue), and LIGNA (wood processing and forestry). With approx. 1,200 employees and a network of 66 representatives, subsidiaries and branch offices, Deutsche Messe is present in more than 100 countries worldwide.

Deutsche Messe AG
D 30521 Hannover

Fakuma 2015 – More International Than Ever!

Worldwide Offerings for Plastics Technology from 35 Industrialised Nations

13th - 17th Oct. 2015: FAKUMA, Friedrichshafen (D)

With a fully occupied exhibition centre in Friedrichshafen on Lake Constance, the 24th edition of Fakuma is headed for record-breaking figures! And thus the Fakuma international trade fair for plastics processing is firming up its recognised reputation as Europe's number one industry event for injection moulding, extrusion and thermoforming technologies.

With its user-oriented focus on plastics processing, Fakuma has acquired a special status, because similarly positioned trade fairs have a more plastics-polytechnical orientation and thus a different emphasis.

Manufacturers and distributors from 35 industrialised nations will present a sparkling array of new technologies and processes at this year's Fakuma, as well as applications from which the industry sector will already be able to profit in October 2015! Time is money, and short time-to-market promises an advantage and thus more business success, for which reason the manufacturers and distributors will present a host of world's firsts and innovative processes at Fakuma 2015.

Within this context, additive and generative 3D processes have of course taken on an exceptional role, even though precisely this segment and its associated processes, such as STL and laser sintering, have been part of Fakuma's exhibition portfolio for more than 20 years, whereas they were used in the past above all for prototyping and the production of samples. Based on rapidly expanding material diversity and material characteristics which are customised for specific functions, the spread of 3D processes might well be greatly accelerated and more than just round out offerings for manufacturing processes involving plastic processing.

The extent to which the Fakuma international trade fair for plastics processing has established its omnipresence within the industry sector is illustrated by further increases in the number of foreign manufacturers and distributors from more than 35 industrialised nations. As has traditionally been the case, Germany is represented by the largest number of exhibitors (925 companies) followed by Italy (102), Switzerland (97), Austria (63), France (43), China (41), Portugal (27), the Netherlands (25), the Czech Republic (20) and Turkey (17), so the Europe still plays the leading role.

At any rate, manufacturers and distributors from all over the world view Fakuma as the most suitable business platform for presenting their companies to expert visitors in the highly demanding German and European markets. Fakuma 2015 will take place at the Friedrichshafen Exhibition Centre on Lake Constance where Germany, Austria and Switzerland meet from the 13th through the 17th of October, and is expecting roughly 46,000 expert visitors from well over 100 countries.

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

Phillips-Medisize Increases Design and Development Capabilities

Phillips-Medisize Corporation announced the completion of a 5,000 sq. ft. expansion to its Hudson, Wisconsin, Design and Development Center (DDC). This new space will be occupied with expanded biopharmaceutical drug delivery and medical device test engineering capabilities including test method development, test method validation, product characterization, design erification testing, and root cause analysis, among others.

Since 2013 nearly 100 device development professionals were added in the Hudson design and development center. Earlier this year, the company also expanded its pilot manufacturing development class 7 and class 8 clean room space for both drug delivery and med/surgical devices.

This Hudson DDC expansion is the direct result of new wins in the biologic/pharma drug delivery, combination products, and med tech spaces. The wins include products with complex mechatronic assembly and micro manufacturing requirements, both of which support the global trend toward smaller and smarter devices. In this same timeframe, the company's global design and development organization has also grown significantly as its services have gained greater acceptance by the customer base.

Future expansions or acquisitions are also planned for the existing Europe and China locations, driven by global customers seeking local development and manufacturing services, as the company continues to execute its strategic plan.

Matt Jennings, Chairman and CEO of Phillips-Medisize Corporation, said "The expansion of our global design and development biopharmaceutical and medical device testing capabilities is supporting our growing customer requirements. This is possible as a result of the talented subject matter experts we have added to our DDCs around the world and customer demand for our early involvement with design services."

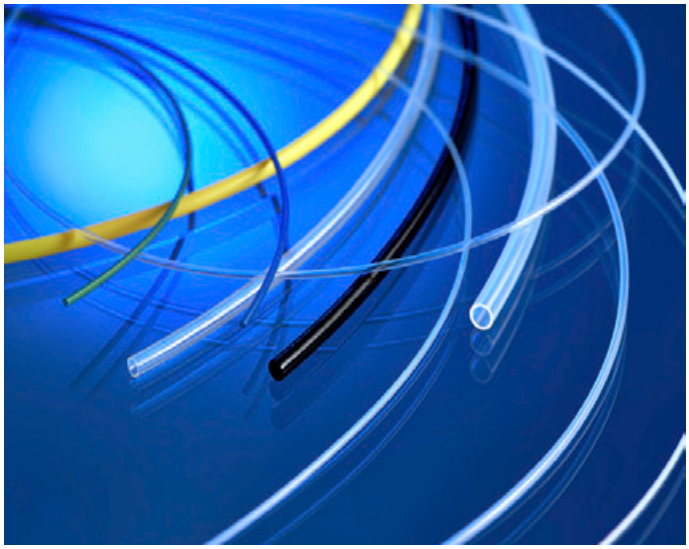
Phillips-Medisize Corporation CH 8309 Nürensdorf

MEDTEC Ireland

RAUMEDIC shows micro molding parts, thermoplastic PTFE Moldflon and its Silicone expertise

For the second time, RAUMEDIC will be presenting the latest developments from the world of polymers at MEDTEC Ireland in Galway, the industry meet-up for the medical technology industry.

RAUMEDIC Micro Molding samples



Tubing from PTFE Moldflon

06th - 07th Oct. 2015: Medtec Ireland, Galway (IE)

At this year's event, the precision injection molding capabilities of RAUMEDIC will play an important role. Micro molded parts, as tiny that you will need a magnifying glass to see them properly, are in the focus of attention. RAUMEDIC processes also high temperature materials such as PEEK, PSU and PPSU in clean room conditions, for many medical technology and pharmaceutical application. This is highly advantageous, as the company is also well known for its expertise in micro extrusion, and the micro molding technology just completes the portfolio of the single source supplier.

What's more, the company will also be showcasing its tubing, extruded from PTFE Moldflon. This is a special type of thermoplastic material provided by ElringKlinger that, in contrast to regular PTFE (polytetrafluoroethylene), can be processed from the melt – a major advantage in terms of economy and processability for PTFE. Further testing has also been performed to realize the benefits of PTFE Moldflon for secondary thermo forming operations such as tipping and flaring. PTFE Moldflon is a biocompatible thermoplastic with very similar physical properties to traditional PTFE such as melting point, continuous service temperature, coefficient of friction, tensile strength and dielectric constant. The main benefit from PTFE Moldflon is that it can be processed from the Melt. This is highly advantageous for long continuous PTFE tubing production runs and for PTFE with co-extruded radiopaque stripes. Perhaps the biggest development is the extrusion of PTFE for lubricous inner catheter liners and for insulating fine wires for electrical stimulation applications.

Visitors will have the opportunity to drop by the thermoplastic and silicone processor and form their own opinion on how these two materials are processed as part of a unique injection molding process. This multifunctional one-shot technology provides the system components for catheter sets in one single working step.

An unbeatable combination of silicone and thermoplastic

Raumedic AG
D 95233 Helmbrechts

The new Systec & Solutions tilt adapter

The new Systec & Solutions tilt adapter for just the right viewing angle

Alongside the ergonomic height adjuster, a tilt adapter is now also available from Systec & Solutions for TROLLEY systems as well as for floor and ceiling-mounted installations. This permits simple adaptation of the HMI system tilt angle to suit different work situations.

The new tilt adapter is made entirely of stainless steel and satisfies the requirements of safety class IP65. Internal cable routing through the adapter means there are no additional holes or edges. The tilt adapter is designed for maximum flexibility and ease of cleaning. With the adapter, the HMI system can be tilted forwards or backwards by 35° from the vertical, thus providing an overall tilt angle of up to 70°.

Another particularly user-friendly feature is the ergonomic height adjuster, which is also made entirely of stainless steel. Adjustment is performed by means of an integrated cylinder similar to those used in standard office chairs. Once the release mechanism has been actuated, the position of the monitor can be set with a minimum of effort.

systec & solutions

Systec & Solutions GmbH
Emmy-Noether-Straße 17
D 76131 Karlsruhe
Telefon: +49 721 6634 400
Telefax: +49 721 6634 444
E-Mail: talk@systec-solutions.com
Internet: http://www.systec-solutions.com

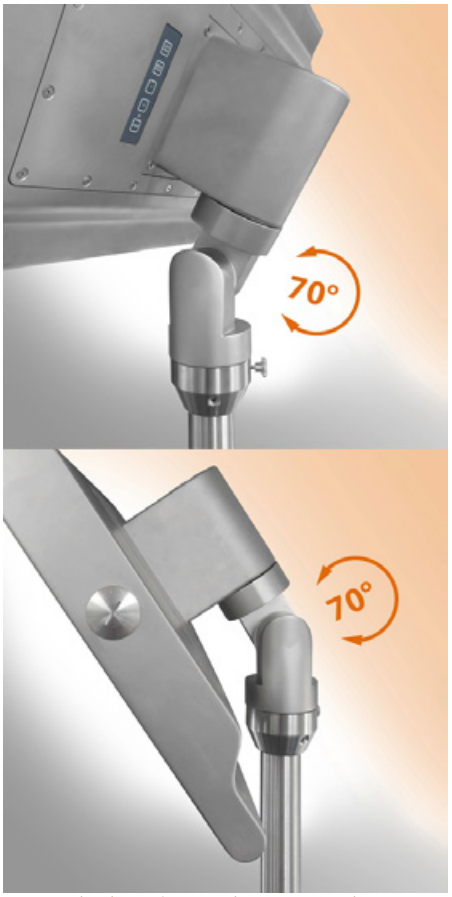


Figure 1: Tilt adapter (Image rights: Systec & Solutions GmbH)

Flexi-Cap by Schreiner MediPharm

Double Patient Protection with a Single Solution

Schreiner MediPharm will showcase its new products at InnoPack, as part of the CPhI Worldwide taking place in Madrid from October 13-15. A special highlight is the latest development of Flexi-Cap, an innovative security solution which irreversibly shows that a primary container has been opened, and thus prevents illegal reuse and filling of empty containers with counterfeit substances. The concept has been expanded to include colored film caps to indicate medication and strength for easy recognition by health care practitioners to aid in avoiding medication errors.

13th - 15th Oct. 2015: CPhI worldwide, Madrid (ES)

Counterfeiters search for empty original containers in waste containers to refill them and illegally sell them as originals. Schreiner MediPharm's Flexi-Cap makes this impossible: The security concept is based on an innovative combination of label and cap. The film cap is first put over the closed container, then the label is applied without covering the peel-open tab on the opening strip. Once the strip is opened, the bottom part of the cap, together with the label, remains attached to the container. Attempting to remove the reset of the cap destroys the label. This eliminates the possibility of illegal, unnoticed reuse.

Due to the novel colored film caps, Flexi-Cap can now also be used to prevent medication errors. Such color marking allows physicians and nurses to instantly verify that they are handling the right product and dosage. Therefore, the cap's transparent film material is printed using a variety of easily-differentiated colors. Thus, pharmaceutical manufacturers can design caps to meet specific requirements. And since the solution leaves ample space for customer-specific designs, they can also include branding components.

Flexi-Cap allows flexible use with different container types, forms and sizes. Unlike shrink-wrap solutions, the label construction can be applied without using heat, making it suitable for temperature-sensitive medicines. The top of Flexi-Cap allows space for bar code printing or NFC chip integration for electronic tracking. In addition, important user information can be communicated and patient compliance documented.

Schreiner MediPharm
D 85764 Oberschleissheim

Swiss Medtech Expo

Swiss Medtech Expo establishes a clear position

The first Swiss Medtech Expo has fulfilled every expectation. The Swiss Medtech Expo presented the latest innovations and the current state of additive manufacturing in a stimulating atmosphere. The trade fair convinced with a good combination of exhibition, knowledge transfer and networking. Lucerne became the centre of Switzerland's medtech industry for a two-day period.

19th - 20th Sept. 2017: SWISS MEDTECH EXPO, Luzern (CH)

The first Swiss Medtech Expo took place in Lucerne. 160 national and international exhibitors from various sub-segments of the medtech industry showcased their broad portfolios of special technologies and provided qualified experts to engage in discussions with an interested audience. More than 1,500 developers and engineers from reputable manufacturers made use of the opportunity to network with leading system providers and innovative enablers. Ample use was made of the opportunity to engage in exchange. Stimulating discussions could be heard at every booth in the well-attended exhibition hall.

Important convention of the right people

«We certainly got off to a good start», says delighted trade fair manager René Ziswiler. «We are very pleased with the number of visitors and also with the positive responses from our exhibitors». In addition to exhibiting their products and services, the exhibitors made use of the opportunity to cultivate their networks and forge contacts with new potential customers. The first event has already clearly demonstrated that the Swiss Medtech Expo has the potential to become the leading platform for the Swiss medtech industry and to contribute towards the segment's development in the long term. «Swiss Medtech Expo is the right location for discussing and exchanging knowledge and ideas for future innovative projects», explains Urs Durrer, member of the board at Health Tech Cluster Switzerland (HTCS).

Framework programme with innovations and current trends

The «Innovation Symposium» was also a source of inspiration for productive work. High-quality speakers provided first-hand reports and offered an opportunity to transfer information at a high level. The symposium was very well-attended, whereby the topic of «Additive manufacturing in medical technology» on the second day of the trade fair received an excellent response. Other aspects of the framework programme such as the Rapid.Area and the event «4 Medtech Experts» also proved very popular. More than 200 visitors participated in the educational and networking event. Nine speakers held lectures on innovations as the drivers behind Switzerland as a medtech location.

Definite date set for the next event

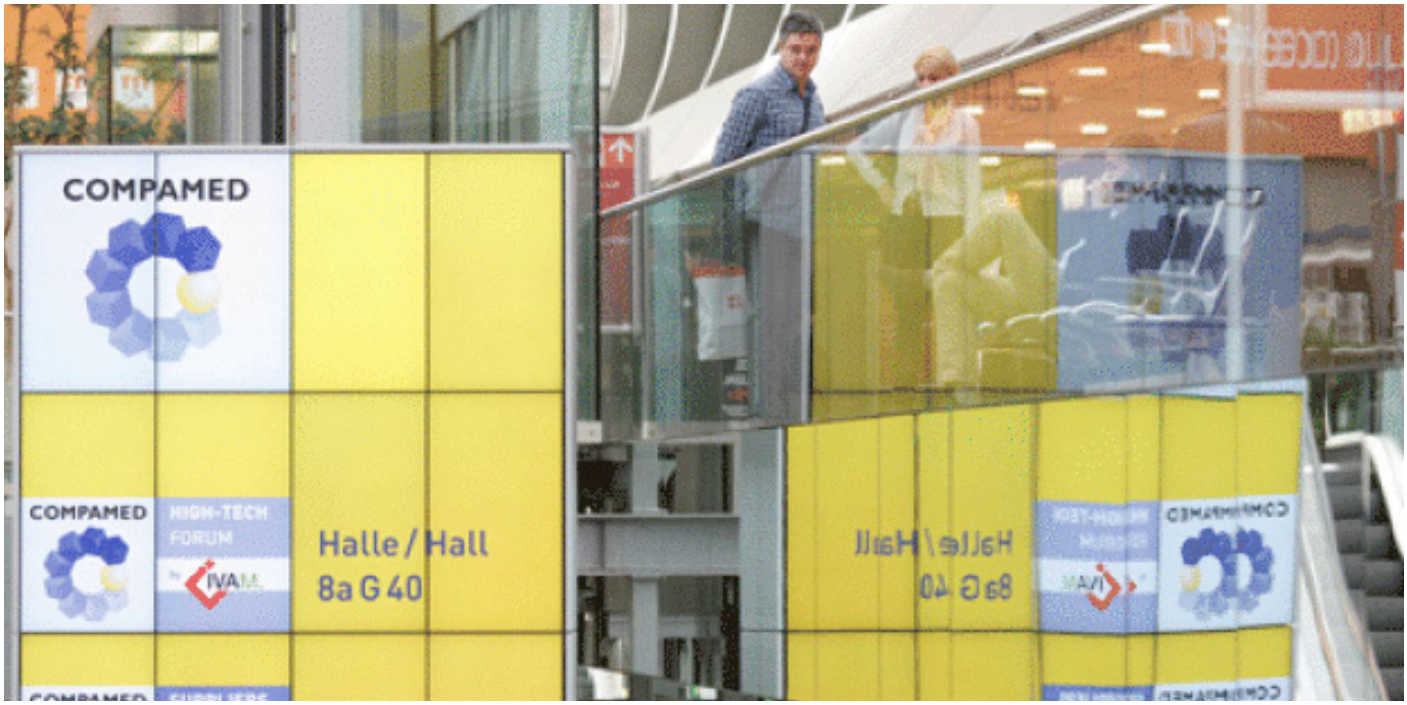
The Swiss Medtech Expo was organised in close cooperation with the Health Tech Cluster and other reputable strategic partners. Everyone involved is very pleased with what has been achieved and all are in favour of second edition of the Swiss Medtech Expo that will take place from 19 to 20 September, 2017.

Messe Luzern AG CH 6005 Luzern

Suppliers are offering solutions for various applications

COMPAMED 2015: The medical technology miniaturising trend marching on

Author: Klaus Jopp, freier Wissenschaftsjournalist (Hamburg)



16th - 19th Nov. 2015: COMPAMED, Düsseldorf (D)

Reality in the future? Nano-robots as a medical transport unit for penetrating into tumours

"The success of the COMPAMED can be explained as the result of closely integrating development processes on the part of the suppliers as well as on the part of their customers," said Joachim Schäfer, managing director of Messe Düsseldorf, explaining in a nutshell why, in addition to visiting the world's largest medical trade fair, MEDICA, also visiting the internationally leading trade fair for the supplier market of medical technology represents an opportunity to view into future and look at current trends with regard to medical technology innovations. Always scoring top annual results in reference to the number of exhibitors and visitors, COMPAMED has long since developed into the leading international marketing communication platform for suppliers of the medical technology industry. For the first time, the COMPAMED will be held at the very same time as the MEDICA from 16 to 19 November 2015. To date, COMPAMED has always ended a day earlier. From this year on, it will also be new that the trade fair will be running on the weekdays from Monday to Thursday.

The added time for discussions with your customers from the medical technology industry, namely a substantial number of around 4,500 MEDICA trade fair exhibitors, should be very much in line with the, once again, more than 700 exhibitors of the COMPAMED (in trade fair halls 8a and 8b). This is because the market for medical technology and medical products is very dynamic. The innovation cycle is considerably shorter than is the case in other industries. In the process, the development competence of the suppliers, in part, is often the point of origin for ground-breaking innovations with regard to efficient and effective medical care.

For example, this also applies to further increases in the level of miniaturisation. An especially extraordinary example, which currently brings science fiction to mind, entails nano-robots in the bloodstream that autonomously carry out operations. Corresponding with these ideas, the Max-Planck Institute (MPI) for Intelligent Systems (Stuttgart) have developed two different micro-swimmers. Thereby, on the one hand, it has to do with a type of clam that moves forward by opening and closing as well as a screw that moves forward by means of rotation. Its diameter is only 100 nanometres; its length 400 nanometres. A rotating magnetic field that is applied externally sets the mini-screw into motion. The manufacturing process for the special swimmers is 3D printing, which is increasingly gaining in significance for a wide variety of applications at the COMPAMED. All materials used, such as polydimethylsiloxane, are biocompatible and body compatible. Researchers imagine that, one day, nano-robots will introduce tumour therapeutic agents directly into the tumour. "Theoretically, at the size of our construction, application within the cell would be conceivable," explained Peer Fischer, head of the working group Micro-, Nano- and Molecular systems at MPI for Intelligent Systems. In any case, the mini devices should contribute to making interventions minimally invasive, improve their effectiveness and shorten the times spans required for such interventions. However, a series of years may go by until this science fiction becomes a reality.

Small but impressive and with the highest level of precision

In the meantime, many "mini" solutions have now already become a reality since the

COMPAMED 2015: The medical technology miniaturising trend marching on

demand for increasingly smaller systems remains constant in the field of medical technology. "The life-science industry is showing an increased demand for the miniaturisation, micro-structuring and an integration of optical and electrical functions in inexpensive components," confirmed Peter Kirkegaard, CEO of IMT Masken und Teilungen AG from Switzerland. IMT addresses this need using manufacturing technologies deriving from the semiconductor industry. Based upon glass, the company manufactures microchannels, clearance holes, electrodes, optical and electrical coatings, waveguides and grating – the smallest structures have tiny dimensions down to only 150 nanometres. Their fields of application include lab-on-a-chip systems, among other things. Micreon GmbH also acts as a contract manufacturer – the company is among the world-renowned specialists for micro processing using ultrashort pulse lasers within the pico and femto range. The laser is playing an increasingly important role in manufacturing medical implants, instruments or measurement devices in the field of medical technology. Since the highest level of precision and quality is required in the case of medical products, especially for the ultrashort pulse laser technique, an increasing number of application possibilities are arising. An example includes vessel wall supports (stents) made of organic materials. Since the bio-resorbable polymers are very sensitive to temperature, the femtosecond laser is the only tool used for manufacturing refined and structured components without any damage.

Record participation at the IVAM joint stand

IMT und Micreon are being represented along with around another 50 exhibitors at the joint stand of the IVAM professional association for micro-technology, which will once again be forming a focus for microsystem technology, nanotechnologies, production technology and process control in hall 8a. "This is a new record; our floorspace comprises almost 700 square metres," explained Mona Okroy-Hellweg, speaker for the IVAM. Also this year, the professional association is organising the COMPAMED HIGH-TECH FORUM (Halle 8a). Along with the VTT Technical Research Centre of Finland, one symposium deals with the topic that is gaining an increasingly important role, also in the field of medical technology: Printed electronics. In addition, the topic of this year's spring forum "Lasers – Optics – Photonics" will be focussed on during a symposium. "Since many sensor manufacturers are represented at our stand, we additionally work on a session on the topic of "Smart Sensor Solutions," said Okroy-Hellweg.

The COMPAMED SUPPLIERS FORUM is taking place in parallel again in hall 8b, which is traditionally being organised by the trade magazine DeviceMed. The focus of numerous presentations by specialist from internationally leading companies entails current development along the entire process chain. "On all four days of the trade fair, exhibitors will be providing information on technical innovations and further topics within the scope of the interplay between manufacturers, suppliers and physicians or users. Beginning with innovative materials as a basis of many new technical innovations to the user-centred design of medical technological applications according to IEC 62366 and miniaturisation system, the entire process chain is represented, all the way to the topics of packaging, market access and approval," reported Peter Reinhardt, editor in chief at DeviceMed. This year, presentations on delivery performance in the fields of medical technology, including presenting tools and parameters for improved performance are new. The "Innovation Guide", initiated by the Federal Ministry for Education and Research, is also a topic. It accompanies innovation processes step by step along the individual stages of innovation, research – development – certification – reimbursement – market. The programme will be rounded off by practical instructions on how to protect innovations as well as on IT security.

High-tech for three-dimensional images of tissue structures

Furthermore, optical techniques for improved diagnostics are currently in trend. In this connection, as a joint effort since April 2015, the Fraunhofer Institute for Electronic Nanosystems ENAS, which has been represented at the COMPAMED several times already, the Saxon company, EDC Electronic Design Chemnitz GmbH, and the Canadian company, Preciseley Microtechnology Corporation, have developed a micro-opto-electro-mechanical system (MOEMS) for optical coherence tomography (OCT). The envisaged solution should make high-resolution in-vivo OCT diagnostics possible. When miniaturising the design, increasing the precision of the OCT method can only be achieved at the same time by implementing integrated piezoelectric sensors and an application specific integrated regulation circuit. By means of this, it is possible to integrate high-precision coherence tomographic images into an endoscope and obtain non-invasive three-dimensional images of tissues structures. OCT is used in a variety of medical fields, such as ophthalmology for example. The condition and possible diseases of the retina can be detected by means of non-invasive OCT examinations. Using OCT, it is possible to obtain three-dimensional images of the composition of the tissue structures. In relation to rival techniques, the advantage entails a high level of penetration depth into the tissue with a high level of resolution. In contrast to sonography, OCT is not based on an acoustical method, but on optical interferometry (distance measurement) instead. The joint project has been made possible by an initiative of Alberta's ministry for higher education (EAE) and the Federal Ministry for Economy and Technology (BMWI).

Coatings that can kill off bacteria

A "never-ending hot topic" at the COMPAMED entails coatings, especially those with antimicrobial action. Biofilms on catheters can lead to infection in patients. Therefore, in the USA, already two thirds of all catheters on the market have antimicrobial coatings and/or antithrombogenic coatings. Even if different legislation prevails in Europe, in the meanwhile, such catheters are also used here. Using the so-called "non-leaching method" the supplier, Cikautxo, located in northern Spain, has developed catheters with a surface treated with a substance that kills off bacteria at the moment the bacteria come into proximity of it. Using this method, no substances are released into the vascular system so that no side effects result. Cikautxo works with an antimicrobial coating made of polymers and their antithrombogenic effect, which is based on heparin.

Once again, the upcoming COMPAMED will give an overview of the entire range of medical technology suppliers. The range of offers for visitors spans from tiny sensors all the way to packaging machines that fill entire rooms, from innovative materials to refined microsystems, from mobile diagnostic devices all the way to electronic manufacturing services (EMS). In the future, 3D printing should also become a focus at the COMPAMED. According to a survey carried out by DeviceMed, 31 percent of the companies questioned already rely on the innovative method; 35 percent are planning to use it in the foreseeable future. Only one third of the approximately 80 companies recorded up until this point do not currently see any possibilities for its application. Also from this point of view, a visit to halls 8a and 8b are certainly worthwhile this year, being the first time for exciting discussions and business to take place for a day longer.

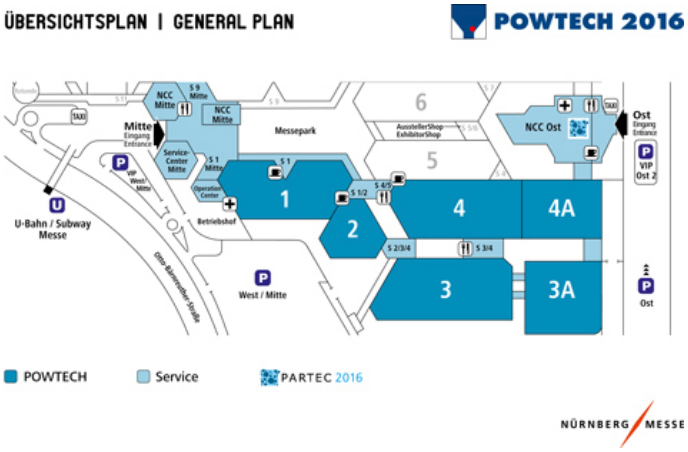
Messe Düsseldorf GmbH
D 40001 Düsseldorf

POWTECH 2016

Innovation forum for mechanical processing technology

- **Promising start to the 2016 trade fair season**
- **Changeover at the helm**
- **Improved exhibition circuit thanks to modified hall layout**
- **Expert forums offer industry-specific information**

From pharmaceuticals, chemicals and foodstuffs to glass, construction materials and paper: every 18 months the POWTECH trade fair offers these key industrial segments a unique overview of the latest developments in mechanical processing technology. From 19 to 21 April 2016, international industry experts will once again have the opportunity to share know-how with their peers and forge new business contacts. PARTEC, the International Congress for Particle Technology held concurrently with the show, attracts scientists and engineers from all over the world to the Nuremberg Exhibition Centre.



19th - 21st April 2016: POWTECH, Nürnberg (D)

Around seven months before it takes place, POWTECH, the leading trade fair for processing, analysis and handling of powder and bulk solids, is already enjoying an extremely positive response. "We have been delighted to receive a large number of early bird registrations, including many longstanding exhibitors and key industry players. More than 80 percent of the floor space used last year has already been booked," reports Beate Fischer, the NürnbergMesse project manager responsible for the event. "The high number of bookings illustrates once again how extremely important POWTECH is as an industry gathering for the international powder and bulk goods sector."

Changeover at the helm

POWTECH starts the 2016 trade fair season under new management, as Willy Viethen, who was responsible for POWTECH over the last three years in his capacity as events manager at NürnbergMesse, is succeeded by Beate Fischer. Before joining NürnbergMesse in October 2013, Beate Fischer had been active in the trade fair industry for 15 years. Her previous employers have included GHM in Munich, an organiser of fairs for skilled tradespersons, and Salzburg Exhibition Centre. "As a member of the POWTECH 2014 event team I already gained good insights into the sector. I particularly appreciate the mutually constructive collaboration with our exhibitors and partners and look forward to working with them to further consolidate POWTECH's position as the leading fair for mechanical processing technology."

Modified hall layout

The new hall layout provides the ideal conditions for an effective trade fair visit. The pharmaceutical sector is incorporated into POWTECH through the integration of the TechnoPharm show, so that exhibitors with pharmaceutical-related offerings will be found in all of the six available halls. This exhibition segment is arranged in a circle along the "South Row" of the Nuremberg venue and therefore offers an ideal circuit for a tour of the fair. Access to the event is via NCC Ost – where PARTEC is taking place in the congress rooms - and the Mitte entrance directly opposite the Underground station. The floor plans can be viewed online at: www.powtech.de/floorplan

Expert forums in the exhibition halls

The three expert forums in halls 2, 3 and 3A offer industry-specific, practical knowhow. POWTECH sponsor APV (International Association for Pharmaceutical Technology) is organising the special display area Pharma.Manufacturing.Excellence. This expert forum in Hall 3A will be flanked by exhibitors showcasing the latest developments in printing and innovative 2D and 3D technologies as part of the focus on "Printing Solutions in Pharma". In Hall 3, the POWTECH Technology Forum will present application-driven solutions for the food, chemical and pharmaceutical sectors and will also offer participating universities, including those specialising in applied sciences, a platform for presentations on science and research.

The Expert Forum in Hall 2 will provide information about current trends in explosion protection and other industry-specific challenges in mechanical processing technology.

NürnbergMesse GmbH
D 90471 Nürnberg

In Mills River, NC, RAUMEDIC is investing over 20 million dollars in a development and production center for polymer products for the medical and pharmaceutical industry. Over the weekend the company celebrated its first American topping out ceremony.

RAUMEDIC celebrates topping out ceremony of the new US-headquarters

The new facility is taking shape.

A different wind was blowing on Sunday where otherwise excavators are constantly at work and construction workers are installing lines at dizzying heights.

Instead of strong men in work clothes, there were men and women shaking hands and talking excitedly, as well as families with children playing with balloon animals such as ponies and dogs.

With its new building in Mills River, RAUMEDIC AG is not only creating over 50 jobs starting January 1, 2016 but also has brought a new tradition from Germany to the US. On Sunday it celebrated a topping out ceremony with its future employees. Under bright sunshine and a white and blue sky, young and old enjoyed a company family barbecue.

The ceremony, which traditionally occurs after the roof truss is completed and expresses gratitude for the work of the crews involved, was RAUMEDIC's first American company party.

CEO Martin Bayer took the opportunity to thank Tom Suitt, Senior Vice President of THS, as the representative of the crews and workers for the professional work done so far and wished everyone a safe conclusion without accidents.

The tradition of the topping out ceremony is related to the harvest festival and American Thanksgiving as a look back on what has been accomplished and an expression of gratitude for it. Thanksgiving also commemorates the safe landing in the new world. And that is exactly what RAUMEDIC needs: a safe landing in America. "We at RAUMEDIC need this solidarity, regardless of who we are or where we come from, to ensure the success of our Mills River project," said Martin Bayer his short speech to the guests.

RAUMEDIC CEO Martin Bayer gave a short speech to employees and contractors.

„Here accrues a building, in which plastic products are developed, manufactured and sold for the medical and pharmaceutical industry. Products for restoring the health and saving lives of human beings!"

The 20 million dollar project mirrors RAUMEDIC's established German technology in the US. Production is already set to begin in January 2016.

Raumedic AG
D 95233 Helmbrechts

Phillips-Medisize Invited to Join Sanofi at Partnerships in Drug Delivery

05th - 6th Oct.: Partnerships in Drug Delivery Conference, Boston (USA)

Phillips-Medisize Corp. representatives Bill Welch, Chief Technology Officer, and Janne Turunen, Program Manager, will be part of the Sanofi presentation at the Partnership Opportunities in Drug Delivery (PODD) in Boston, Massachusetts on October 5, 2015.

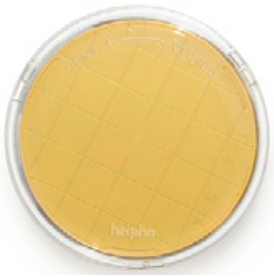
The PODD conference brings together leaders in the pharma/biotech industry for networking and presentations on the latest drug delivery technologies, as well as insights on delivery and formulation needs. The ultimate goal of the conference is to inspire innovation and advancement of drug development and delivery.

„We're pleased to join Paul Jansen from Sanofi, along with Rob Veasey of DCA Design International, at the PODD session entitled 'The SoloStar Injection Device: Foundation for a Versatile Platform.' At Phillips-Medisize, our team of 450 engineers is actively engaged in the design, development and commercialization of a wide range of drug delivery platforms, from injector pens to inhalation devices to wearable infusers, all in partnership with leading global biopharma companies," said Bill Welch.

The PODD conference will use the Intercontinental Boston hotel, as its venue this year and Phillips-Medisize representatives will be available in the exhibit hall at Booth 46.

Phillips-Medisize Corporation
CH 8309 Nürensdorf

New: heipha ICRplus Neutralizer A contact plates for improved detection of microorganisms in isolators and cleanrooms



Merck Millipore's heipha ICRplus Neutralizer A contact plates improve detection of microorganisms on disinfected surfaces in isolators and cleanrooms. Common disinfectants may contain residues from a variety of sources that inhibit the detection of microorganisms during surface monitoring, which can lead to false negative results.

heipha Neutralizer A ICRplus contact plates allow the detection of microorganisms in the presence of many disinfectants, including those which cannot be sufficiently inactivated by common neutralizers, such as polysorbate 80, lecithin, histidine and thiosulfate. The medium in the plates is supplemented with a mixture of ingredients called Neutralizer A to inactivate residues of a broad range of disinfectants including polyhexamethylene biguanides and quaternary ammonium compounds. The basic medium complies with the formulation of casein soya bean digest agar according to the recommendation of the current European, Japanese and United States Pharmacopoeia.

Heipha Neutralizer A ICRplus contact plates are triple-bagged, gamma-irradiated and the only plates available that feature a two-way closure system. The closed position ensures safe transport after sampling and is suitable for aerobic incubation while the vent position provides the required gas exchange for the detection of anaerobic and microaerophilic microorganisms in specific incubation atmospheres. Additionally, the clear appearance of the agar medium makes analysis easier.

The plates can be stored at room temperature and have a long shelf life of six months. Each heipha Neutralizer A ICRplus contact plate contains a data matrix barcode, which allows secure identification of plates and supports the „paperless" lab.

Merck Millipore GmbH
D 65824 Schwalbach

Gerresheimer is one of just a few companies in the world to offer its customers both glass and COP syringes. At the PDA's Universe of Prefilled Syringes & Injection Devices Conference in Vienna on November 3 and 4, Bernd Zeiss of Gerresheimer and Yasuyuki Shiraishi of Taisei Kako will be talking about COP syringes in their presentation entitled „Prefillable COP Syringes – Growing Knowledge on System Performance and Properties" at the Austria Center Vienna conference room, 7.20 a.m. on November 4, 2015. On both days of the conference, Gerresheimer's experts will be talking to interested conference participants and customers at booth 64/65.

Gerresheimer shows ready-to-fill plastic syringes as an alternative to glass at the PDA Universe of Prefilled Syringes

03rd - 04th Nov. 2015: PDA Konferenz „Universe of Prefilled Syringes & Injection Devices", Wien (A)

"Over the past few years cyclical olefin polymers (COP) have proven to be highly suitable as a material for prefillable syringes alongside glass," said Bernd Zeiss, Medical Systems Technical Support Manager at Gerresheimer in Bünde who is an expert in glass and plastic syringe solutions. Cyclical olefin polymers are an interesting alternative to glass as a result of their special properties.

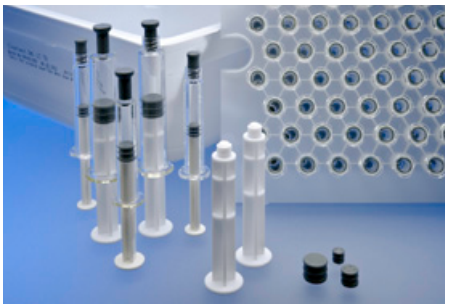
Excellent barrier properties, transparent and break-resistant

COP's excellent barrier properties effectively protect the content of the syringe. It is also transparent, which means that COP syringes are remarkably similar in appearance to glass syringes. This transparency makes it easy to visually check the content for clouding, particulate and other defects. COP syringes are also far more break-resistant than their glass counterparts.

The perfect packaging for biotech drugs

COP syringes can be used as a primary packaging for biotechnologically derived drugs. These are some of the most expensive drugs on the market and highly susceptible to external influences. They are manufactured in high-tech processes and involve complex development and production methods. So it makes sense to package these expensive and sensitive pharmaceuticals in the highest quality primary packaging. Another important product that is filled into COP syringes is hyaluronic acid, a key constituent of human tissue that performs many different functions. It is used in opthalmics, orthopedics and in cosmetic treatments.

The very precise injection molding process permits far exacter tolerances than the freeforming process used for glass syringes. Exact geometries are very important if the syringe is destined for use in an auto-injector or similar. These exact geometries also reduce the syringe's dead volume so that less drug residue is left inside the syringe after use. This is a persuasive argument for manufacturers of expensive drugs.



Custom solutions for specific applications

Custom drug delivery devices with prefilled syringes are a must in the parenteral market because of the vast number of parenteral drugs that exist. That's why Gerresheimer offers a comprehensive portfolio of high quality products in glass and COP, and adapts the syringe system to the customer's individual requirements profile.

The Medical Systems development teams at the Technical Competence Centers in Bünde and Wackersdorf liaise with the customer to identify the ideal solution for the customer application, which might be either glass or plastic, and the fastest and most cost-effective way to the optimum product. This early liaison allows the development team to clarify whether the drug's active ingredient is a small molecule or a complex biotech substance, if it will be used in an auto-injector, what the drug's viscosity is and what its range of application is. It guarantees that the right material choices are made right from the outset and allows the development team to specify the syringe format. The last of the requirements to be clarified are the type of siliconization for the syringe barrel and the plunger head, because these define the syringe's mechanical properties.

Gerresheimer AG D 40468 Düsseldorf

Impressum:
cleanroom online / W.A. Schuster GmbH · Mozartstrasse 45 · D 70180 Stuttgart · Tel. +49 711 9 64 03 50 · Fax +49 711 9 64 03 66
info@reinraum.de · www.cleanroom-online.de · GF Dipl.-Designer Reinhold Schuster · Stgt, HRB 14111 · VAT DE 147811997