



Hans J. Michael GmbH



Pharma-Comb Labels with Detachable Parts: New Version for Efficient Marking of Disposable Syringes

Schreiner MediPharm Develops Innovative Label with a Self-Lifting Starter Tab for Small Vials

For a leading producer of anesthetics in China, Schreiner MediPharm developed a new version of the Pharma-Comb SL (Self-Lifting) label with a starter tab. The special label design is particularly easy to use on small vials allowing efficient and reliable marking of the medication while increasing patient safety at the same time.



Pharma-Comb labels are specialty labels with one or several detachable parts printed with the most important data. The small vial size posed a special challenge for the new version of the Pharma-Comb SL label. Despite minimal space, the label must contain all important product information, provide room for variable post-printing, and integrate a detachable part to mark the disposable syringe after drawing up the anesthetic.

This newly developed solution is based on a three-layered film label. The outer layer offers ample space for important product information and post-printing with the batch number and expiration date. When opening the outer layer, which tightly wraps around the small vial, the detachable part underneath is exposed. Due to its special design, the starter tab of the detachable label part is self-lifting. As a result, the physician or nurse can easily peel it off even with gloves on and mark the syringe after drawing up the medication from the vial. The detachable label contains informa-

tion about the product name and active ingredients. Additionally, it has two fields for entering the date and time of administration, and the dose and the initials of the physician or nurse. Due to a special varnish coating of the detachable label it can be inscribed by hand with a variety of pens or pencils.

Ann L. Merchant, President of Schreiner MediPharm, summarizes the label's benefits: "In daily hospital care settings, medication errors can have severe consequences for the patient. Therefore, clear and reliable marking of the administered medicine, especially in refilling processes, is extremely important. Labels with detachable parts can make an important contribution here, in order to reliably mark the disposable syringe after drawing up the required dose. Due to the self-lifting starter tab, this can be done in a very simple and convenient way."

Schreiner MediPharm
D 85764 Oberschleissheim

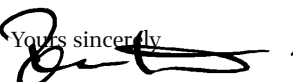
Schreiner MediPharm Develops Innovative Label with a Self-Lifting Starter Tab for Small Vials	1
Ecolab launches new cleaning agent for sustained release coatings	3
Phillips-Medisize to acquire Injlectronics	4
Low-maintenance, cost-efficient IT systems	4
High-calibre + international: The programme for the 2016 Cleanzone Congress is now set	5
Sterile environments in life sciences through innovative materials	7
10th COMPAMED Spring Convention	8
Highlight smartLAB: the laboratory of the future is back for a second time	10
SINDEX 2016: un programme riche au rendez-vous du secteur suisse de la technologie	11
Chillventa 2016: even bigger with strong international focus	12
Cleanroom gloves with PU coating	13
Dual-monitor solutions for a wide range of cleanroom applications	14



Dear readers, dear subscribers,

now it's the beginning of August 2016 and we have a lot of interesting 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



Ecolab launches new cleaning agent for sustained release coatings

Ecolab, a global leader in water, hygiene and energy technologies and services, has launched a new cleaning agent for removing stubborn residues of sustained release coatings in the pharmaceutical and nutritional supplement industry.

COSA® PUR 81 is a slightly acidic cleaning agent based on surfactants making it ideally suited for the removal of alkaline and acid resistant coatings in the production of tablets.

The innovative product is manufactured in a pharmaceutical GMP production facility in accordance with Pharma Good Manufacturing Practice and complies fully with the requirements of PIC/S and the FDA. It provides process optimization for Cleaning in Place (CIP), Cleaning Out of Place (COP) and manual cleaning processes and has been tested and approved by companies including Glatt, BOHLE and BOSCH.

Best performance is achieved with reduced temperature (50-80°C), concentration (2-10%) and contact time (30-60 minutes) which saves energy and means a quicker return to production. For specific sustained release coatings a combination with COSA® CIP 92 may be recommended.

In addition to the product Ecolab provides comprehensive documentation to support cleaning validation requirements. This includes an environmental safety assessment, full toxicological profile, BSE/TSE data sheet and statements covering safety, GMO, AOX and organic solvent.

Kristen Gray, Global Marketing Director – Life Sciences at Ecolab

says: 'Cosa® Pur 81 has been designed to give an excellent cleaning performance to meet stringent validation requirements. Customers who use it will be able to demonstrate that they are taking proactive steps to control carryover of products during the production process.'

Cosa® Pur 81 comes in a range of options including a 19kg canister, 200kg drum and a 975 kg container. A certificate of analysis is also available for all batches.

Ecolab has been serving industrial pharmaceutical and cosmetic customers for more than 25 years and has expertise in hygiene and cleaning validation in the field of pharmaceutical production, particularly related to product contact surfaces.



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/>



Strengthens Franchise in Consumable Diagnostics Contract Manufacturing

Phillips-Medisize to acquire Injectronics

Extends Footprint into Northeastern United States and Enhances Services to Biopharma, Consumable Diagnostics and Medical Device Customers.

Phillips-Medisize Corporation (the "Company") today announced that it has agreed to acquire Injectronics, Inc ("Injectronics"). Injectronics provides contract engineering and manufacturing services to consumable diagnostics and medical device customers. Terms of the transaction were not disclosed.

Through this acquisition, Phillips-Medisize will add two manufacturing locations in the Northeastern United States, a global center of biopharmaceutical and medical device innovation. The current management team will join Phillips-Medisize and continue to oversee Injectronics' Clinton, MA and Westborough, MA locations, which will continue

to serve existing customers.

"Injectronics has a very strong track record of delivering excellent quality service to their diagnostics and medical device customers, and adding their expertise will further solidify our position as an industry leader," said Matt Jennings, Chairman, CEO and President of Phillips-Medisize Corporation. "This transaction is consistent with our strategic focus to further broaden our reach into the Northeastern U.S., and will enable us to better serve our biopharmaceutical and medical device customers. Our two companies have similar cultures, and we admire Injectronics' commitment to investing in their people, processes, and purpose-built facilities. I am excited about working with the talented people of Injectronics and I look forward to establishing our design and de-

velopment capabilities in the Greater Boston area."

Paul Nazzaro, Injectronics President & CEO noted, "I could not think of a better partner than Phillips-Medisize for the people and customers of Injectronics. This transaction creates new opportunities for growth and provides our loyal customer base access to Phillips-Medisize's global network of design, development and production capabilities and functions across all platforms."

The waiting period under the Hart-Scott-Rodino Antitrust Improvements Act has expired, and the transaction is expected to close in early July.

Phillips-Medisize Corporation
CH 8309 Nürensorf

There is an increasing trend towards centralization in IT landscapes. This involves creating a client-server architecture permitting the implementation of a remote control solution for the server. Thin client technology from IGEL provides an ideal means of achieving this conveniently, simply and efficiently.

Low-maintenance, cost-efficient IT systems



With the aid of the universal desktop converter, IGEL THIN CLIENT software can be installed on all PC-based HMI systems from Systec & Solutions, enabling the HMI to be used as a fully functional IGEL THIN CLIENT. This also makes it easy to incorporate GMP IT hardware into an IGEL infrastructure. Convenient central administration of every HMI system with the universal management suite is then possible.

The advantages of an IGEL THIN CLIENT in GMP environments:

- Incorporation of HMI systems in the GMP environment into an existing IGEL infrastructure through Ethernet or WLAN
- Wireless operation of the IGEL THIN CLIENT with TROLLEY platform by way of WLAN
- Bluetooth is supported – direct Bluetooth wireless connection of bar code scanners to the IGEL THIN CLIENT
- Serial interface for scales
- Touchscreen operation
- Connection of USB devices
- All standard remote protocols such as RDP, Citrix, Vmware or VNC are sup-



- ported
- Central profile-based remote administration of all IGEL THIN CLIENTs by universal management suite
- Options for customized IGEL software adaptation
- Less expensive than conventional KVM solutions or PCs
- Little maintenance required

The IGEL THIN CLIENT version is available for all Systec & Solutions HMI systems. As Authorized IGEL partner Systec & Solutions could advice you on other aspects of IGEL technology.



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



Cleanzone Congress offers valuable information on the entire life cycle of a cleanroom

High-calibre + international: The programme for the 2016 Cleanzone Congress is now set



International cleanroom experts will be discussing current trends in cleanroom technology at the Cleanzone Congress 2016. The congress, which is taking place alongside the international Cleanzone trade fair on 8 and 9 November in Frankfurt am Main, features a high-calibre roster of speakers. The four congress modules, “Back to basics”, “Planning, layout, construction”, “Qualification” and “Production process and validation: optimization during operation”, cover all aspects of production under controlled conditions and combine theory and practice. Ruth Lorenz, Vice President Technology & Production at Messe Frankfurt, explains: “The demands on cleanroom production are continuously changing, including as a result of new standards and guidelines. The congress taking place parallel to the trade fair offers an outstanding opportunity to find out about all the latest developments in the field of cleanrooms.”

The congress programme was developed by ReinraumAkademie and an international congress panel in collaboration with Messe Frankfurt. Frank Duvernell, Managing Director of ReinraumAkademie, sums up the concept of this year’s Cleanzone Congress: “We placed particular emphasis on covering all aspects of cleanroom production, from construction through to operation, to ensure that participants can find out everything about all the latest trends in the

field of cleanrooms. I am particularly pleased that we have once again been able to attract an array of international experts and luminaries from the industry.”

In the “Back to basics” module, participants will be offered insight into the various aspects of production under controlled conditions, from standardisation and the selection of suitable materials to cleanroom processes and cleaning. Speakers include Frans Saurwalt, Kropman Contamination Control, who will be talking about the requirements for walls, floors and ceilings. As Frans Saurwalt is involved in the international standardisation of cleanrooms ISO/TC209 as a member of Working Group 4 “Design and Construction”, he will be able offer congress participants a first-hand account of standards and process optimisation in cleanrooms, the latter being of decisive importance in remaining competitive. Michael Skerat from Skeratschoppe and Lukas Schober from Kalucon believe that the logistics value chain for cleanrooms offers tremendous scope for potential savings. In their presentation to the Cleanzone Congress, they address the degree to which processes from the automotive industry can be transferred to cleanroom production.

What is the optimum method for planning a cleanroom to ensure that it can satisfy all of the requirements? These themes are dealt

Hochkarätig und international: Programm des Cleanzone Kongresses 2016 steht

cleanzone Vision. Innovation. Expertise.

with in the module “Planning, layout, construction”. One issue that is extremely relevant at present concerns the assignment of liability for intelligent and autonomous technical systems. Professor Dr. Hans-Hermann Dirksen from Liebenstein Law is an expert in this field. He has provided us with an advance look at his presentation for the Cleanzone Congress: “More and more Industry 4.0 technology will be making autonomous decisions without human intervention, and this poses the question as to how responsibility will be assigned. What is the scope of product liability, who is the manufacturer, and what will be the resulting liability chains? Who will be liable for faults and downtimes? Intelligent liability in cleanrooms will have to be able to distinguish between faulty data sources and data generation on the one hand, and incorrect data transmission on the other. My presentation will demonstrate that liability risks in closed user systems must primarily be dealt with via contractually agreed terms of participation for the operation of such systems, in order to place limits on the scope of liability.”

Another top theme in the “Planning, layout, construction” module will be the new version of E DIN 1946-4:2016-06 for air handling and ventilation systems in buildings and rooms in the healthcare sector. The fact that the distinctions between cleanrooms in hospitals and cleanrooms as production and research facilities are disappearing is one of the most significant changes to arise from the revised standard. Detailed information on this will be provided by Ralph Langholz from Mann + Hummel Vokes Air at the Cleanzone Congress.

In order to be able to enter into operation, systems must be validated, or “qualified”, following their completion. The “Qualification” module deals with this topic. Rino Woyczyk, Drees & Sommer and Vice President of VIP3000, a group promoting the interests of those involved in pharmaceutical construction, will be talking about actively dealing with crises during planning and after completion. An important part of the validation/qualification process is documentation, and this will be the topic of the presentation given by Claudia Pachl from Valtec: “My presentation deals with the question as to which documents are of particular relevance during the validation/qualification process, and the role that good project planning has in this regard. I will explain why documentation should not just be seen as an annoyance, but rather as something quite helpful and beneficial, as the right documentation makes it possible to render the validation/qualification process more efficient.”

The “Production process and validation: optimization during operation” module will be taking a look at the challenges cleanrooms will face in future, and the changing standards that will arise as a result. Dr. Berthold DÜthorn from Robert Bosch offers a look at the ongoing revision of the standard ISO TC 209 “Cleanrooms and associated controlled environments”. Dr. DÜthorn serves as an expert and chairperson on a number of working groups for ISO TC 209, and offers a glimpse of what congress participants can expect from his presentation: “The individual standards from the 14644 and 14698 family of standards are listed, and the ways in which their content is related

are detailed. Furthermore, there will be an overview of ongoing standardisation projects, including the formulation of new standards and revision of existing standards. Listeners will also be given insight into the strategy for ISO TC 209 derived from the business plan, the working plan for the next few years and changes that are already planned for the near future.”

Whether it be 100 micrometres or 100 nanometres, the particles that must be monitored for production under controlled conditions vary in size by a factor of 1,000 or more, and this ratio continues to grow as structures get smaller and smaller. Dr. Udo Gommel from Fraunhofer IPA describes the demands this places on measurement strategies. Finally, Josef Ortner from Ortner Reinraumtechnik will conclude the Cleanzone Congress with a look ahead in which he discusses the future requirements for working in cleanrooms.

AMC – a challenge for cleanroom technology

Airborne molecular contamination (AMC) presents major challenges for the micro-technology sector. What can be done to reduce production downtimes resulting from airborne contaminants such as acids, bases and silicones? What measurement and filter technology is currently available on the market? To answer this question, on 8 November Markus Thamm from Cleanroom.de will be offering a workshop targeted at users from the semiconductor industry, aerospace technology and the high-end plastics sector. Anyone interested in the workshop can simply book a congress module.

Those who are interested can get tickets to Cleanzone and the Cleanzone Congress. Trade fair tickets are available free of charge if you register by 21 October.

**08th - 09th November 2016: Cleanzone 2016,
Frankfurt am Main (D)**

cleanzone

cleanzone
Ludwig-Erhard-Anlage 1
D 60327 Frankfurt am Main
Telefon: +49 69 7575 6290
Telefax: +49 69 7575 96290
E-Mail: anja.diete@messefrankfurt.com
Internet: <http://www.messefrankfurt.co>

Sterile environments in life sciences through innovative materials

Two new processes that were nominated for the Cleanroom Award at the last Cleanzone trade fair are opening up new possibilities in efforts to eliminate micro-organisms in hospitals and the food and pharmaceuticals industries. For the first time, it is now possible to sterilise surfaces using natural, environmentally neutral processes without damaging people or other creatures. The concept is based on taking advantage of the effects of photosensitisers that, when exposed to light, absorb its energy and transfer it to oxygen molecules. This leads to the formation of highly aggressive, cytotoxic oxygen species – a powerful weapon against (pathogenic) micro-organisms. This new process is called “Photodynamic Disinfection certified technology”, or PDC technology for short.

A joint research team comprised of Ortner Reinraumtechnik, Graz University of Technology and Muggensturm-based Dastex, in conjunction with textile dye specialists M. Dohmen discovered a blue dye that was wash-resistant and colour-fast. It achieves its ideal effectiveness when activated at 640 nanometres, i.e. the red wavelengths of daylight. In addition, the active ingredient is not volatile, unlike ozone, for example. A thorough assessment was conducted in a testing laboratory at the Hohenstein Institute in Bönningheim, which specialises in the development, testing and certification of textile products, with the following result: the new disinfection system utilising PDC technology does not damage the skin. While minor skin irritation may occur if an employee wears clothing that has been treated with this blue dye, these “complications” lie within the realm of those generally known for cotton or polyester attire. As a result, it is recommended that persons who are particularly sensitive wear something underneath this clothing.

A key advantage of PDC technology lies in the fact that its disinfectant properties are activated through normal activities: the blue suit can be worn as work attire by medical personnel, and the light wavelengths necessary for activating the dye are present in normal daylight. It is no wonder that the product, which was submitted by Ortner Reinraumtechnik for consideration for the Cleanroom Award in 2015, was one of the five nominees when the award was presented at the Cleanzone cleanroom trade fair last year.



Ortner Reinraumtechnik

There is no reason to expect the development of resistance to this product. Thought is already being given to the creation of an entire ‘blue hospital’: why not also use blue PDC paints and coatings for floors, walls and other surfaces? This technology is extremely attractive for the large field offered by the food industry, as it also kills such things as mould spores and yeasts during the production of baked goods, meats and beverages. In the field of pharmaceuticals, PDC technology can also offer added security, whereby it should be clear that it does not render applicable regulations obsolete.

Microbiologically stable and suitable for creative colour design

Another innovation presented at Cleanzone, one which was also among the nominees for the coveted Cleanroom Award 2015, is now becoming an integral component of furnishing concepts in the life sciences. This involves surfaces made from a plastic (Senoplast Klepsch & Co., Piesendorf, Austria) that is extremely stable microbiologically.

The innovation lies in an extremely scratch- and chemical-resistant plastic film that is extremely hard, and therefore abrasion-resistant. As a result, there are no niches in which microbes can remain during hygiene measures. This innovative new

plastic surface can therefore be effectively cleaned and disinfected and – when necessary – sterilised. The film is certified for use in cleanroom classes 1 to 9 in accordance with DIN EN ISO 14644 and is in compliance with the specifications of GMP, classes A to D.

Almost immediately, other uses were found for this film: modular systems in aseptic facilities, biological applications and more – including doors, cupboards, wall systems, beds, laboratory furniture, laboratory cupboards and walls. Efforts are currently under way to develop an entire hospital on this basis (Dittel Engineering, Kochel/Ried). Wherever possible, this hospital is to benefit from the innovative surface technology and gain additional security against potential pathogenic micro-organisms.

The film is also available in an almost unlimited range of colours. There is tremendous scope for dyeing this new plastic surface, meaning that all rooms can be designed in accordance with the latest psychological findings. After all, the impact of colours on the well-being of patients and employees is particularly important in hospitals.

The cleanroom trade fair Cleanzone will be offering an outstanding overview of all of the possibilities on offer for reducing and measuring microbiological contamination on Tuesday and Wednesday, 8 and 9 November 2016, in Frankfurt am Main. Interested companies can submit their innovations for consideration for the Cleanroom Award until 31 August.

**08th - 09th November 2016:
Cleanzone 2016,
Frankfurt am Main (D)**

cleanzone

cleanzone
Ludwig-Erhard-Anlage 1
D 60327 Frankfurt am Main
Telefon: +49 69 7575 6290
Telefax: +49 69 7575 96290
E-Mail: anja.diете@messefrankfurt.com
Internet: <http://www.messefrankfurt.co>



Expert forum focuses on the megatrend of personalised and individualised medicine

10th COMPAMED Spring Convention



„New insights into the molecular processes of life enhance our understanding of health and disease. Individualised medicine seeks to put those insights to use for all: for tailored prevention, diagnosis and treatment,“ goes the Federal Ministry of Health and Research’s description of individualised medicine, an approach commonly also known as personalised or personal medicine. Innovative micro- and nanotechnology solutions are helping to enable the development of diagnostic and treatment processes tailored to address the individual patient’s disease progress, personal needs and distinctive features. Personalised medicine points the way forward and was the dominant theme of this year’s COMPAMED Spring Convention, which was co-hosted by Messe Düsseldorf and IVAM Microtechnology Network on 24 May in Frankfurt am Main. The event, which celebrated its tenth anniversary this year, provides a platform for experts to discuss ideas in the run-up to COMPAMED, the leading international trade fair for medical technology industry suppliers.

„The Spring Convention always gives a preview of the trends at the forefront of technical and business discussion at November’s COMPAMED trade fair and accompanying forums. The emphasis is on general trends in medical technology and their relevance for medical technology suppliers, who are key cooperation partners in product development,“ said Horst Giesen, Global Portfolio Director Healthcare, Messe Düsseldorf, explaining the conceptually coordinated interactive approach.

Medical technology evolution offers opportunities for suppliers

Medical devices are becoming ever smaller, lower-cost and better connected. Accordingly, medical technology companies require suppliers to deliver ever finer, more lightweight yet more powerful components, modules and chips, or dedicated energy and data storage systems. „Medical technology comes to the person, not the person to the technology“ could be the credo of the move towards personalised medicine. „At the same time, more and more people are developing chronic diseases,“ noted COMPAMED Spring Convention speaker Dr Florian Frensch, Philips Head of Strategy & New Business Development for the Germany-Austria-Switzerland („DACH“) region. There are more than 18 million obese people in Germany alone, 20 to 30 million people with high blood pressure, and an estimated eight million will have diabetes by 2030. In return, so to speak, personalisation and digitisation are changing our lives and transforming healthcare

delivery: as many as 54 percent of people in Germany think individual treatment methods are very important, and one in 5 of the country’s population has a healthcare or medical app on their smartphone. The health apps market is projected to grow ten-fold in the period from 2013 to 2017.

For medical technology manufacturers like Philips, megatrends such as commoditisation, miniaturisation and connected devices are of special interest. Ultrasound is an example of commoditisation: whereas a machine cost about USD 15 000 in 1995 and was larger than an office cabinet, the latest model, „Lumify“, is priced at USD 200 (approx. EUR 177) per month. For that price, customers get a mobile, app-based ultrasound solution which offers safe cloud technology and high image quality to a large community of healthcare providers. The ultrasound transducer is connected up to an ordinary commercial tablet PC or smartphone. Miniaturisation is similarly evident: a handy point-of-care device that is easily brought to the patient replaces an entire hospital lab. Digitisation connects it all: „HealthSuite,“ a powerful cloud-based platform provided by Philips, enables connected, continuous healthcare. The technology collects, compiles and analyses medical and other health data from a wide range of sources. The solution addresses the complexity of cutting-edge healthcare IT and has the capability to combine conventional health data from digital patient files, diagnostic and imaging systems, and clinical monitoring with personal data from smartphones, smartwatches and fitness trackers. Piecemeal collection of diagnostic and treatment data in a largely episodic health care system thus gives way to a continuous health monitoring approach offering proactive and preventive benefits.

Rapid analysis of infectious diseases in just 30 minutes

The Austrian Institute of Technology (AIT) in Vienna develops technologies for point-of-care lab diagnostic systems, including highly sensitive biosensors for molecular diagnostic tests on body fluids such as serum, urine and saliva. Diagoras, a project that has received EUR5.5 million EU funding, sees the Viennese organisation working with eight European partners to develop a mobile device that enables doctors and dentists to diagnose and evaluate infectious diseases in just 30 minutes. Patient samples are entered in a system resembling a CD. The reagents needed for detection are already included. The results are displayed by optical methods (fluorescence and luminescence).

10th COMPAMED Spring Convention

science). The reader is the size of a cassette recorder. „Our main task is to develop nucleic acid-based assays. The DNA and RNA strands are specific to a variety of bacteria and viruses,“ Dr Giorgio C. Mutinati, AIT project manager said at the COMPAMED Spring Convention. Diagoras has two main goals: to develop a point-of-care diagnostic device based on a microbiology platform intended mainly for use in the diagnosis of oral and respiratory infections.

Efficient methods for complex diagnostic questions

Despite advances in treatment, cancer is still a leading cause of death in Germany. Detection of tumour cells that have dispersed in the body is attracting interest both as a diagnostic tool and as a predictor of prognosis. Research indicates that disseminating cancer cells could play an important role in cancer screening. „Blood will continue to be the main source of in-vitro diagnosis,“ says Dr Lukas Richter, Siemens Healthcare. The main hindrance to implementing the latest insights in clinical practice is the complexity and cost of currently available detection systems. No high-quality, easy-to-use system suitable for routine practice currently exists that is capable of continuous, real-time detection of isolated tumour cells. The „MR-Cyte“ project funded by the BMBF (German Ministry of Education and Research) and taking place with the participation of Siemens was launched to address this issue. The aim is to measure concentrations of rare cells in patient blood by magnetic detection with a hard drive read. This platform technology based on magnetically labelled cells and matching sensors is called magnetic flow cytometry („MRCyte“). The new method is much faster and easier to use than the existing technology of optical flow cytometry, especially in the pre-diagnosis stage. „The functions of a living cell would be the ideal biomarker for many clinical decisions. We want to measure non-stable biomarkers in future and reduce pre-diagnosis to a minimum,“ Richter said. „MRCyte“ may help achieve that.

Ever smaller and better point-of-care devices that deliver rapid image data and efficient diagnosis of infectious diseases and cancer: all these things are aspects of personalised medical technology. They call for innovative micro- and nanotechnology solutions on the part of medical technology industry suppliers, such as will be presented and highlighted at COMPAMED 2016 in Düsseldorf (14 - 17 November).

Tiny sapphire implant shells

Implants play an important role in medicine, including individualised medicine. The Centre Suisse d'Electronique et de Microtechnique SA (CSEM) has developed new non-metal miniaturised shells for implants. These special „packaging systems“ open up new opportunities for implantation technology because they can be used in hitherto inaccessible parts of the body. „The challenge begins with the inhospitable surroundings implants are exposed to, including an environment that is highly corrosive because of the oxidation processes, pH, temperature, ion composition and protein concentrations in our bodies,“ Rony Jose James, CSEM, said at the COMPAMED Spring Convention. What's more, implants also have to be biocompatible and biofunctional, which includes being non-toxic and having a long service life. Various materials used in microelectronics were considered, but the chosen solution consists of a tiny sapphire shell that measures just 0.6 by 0.6 by 1.0 millimetres but offers enough space for miniature sensors. „The spectrum of applications is wide-ranging, including implantable microphones in the middle ear, aneurysm detection, neurostimulation implants, and monitoring vital life functions in the heart,“ James said.

For Micromotion, too, small is all. The company specialises in new solutions based on micropropulsion technology, which is increasingly required in medicine and elsewhere. „Personalisation calls for smarter devices. This means increased automation of the devices coupled with increasingly complex functionalities, which in turn requires more complex control, sensor and actuator technology,“ Dr Reinhard Degen, general manager of Micromotion, reported at the Spring Convention. This prompted the company to develop robust, exceptionally durable and reliable electromechanical actuators, which present valuable performance benefits in addition to small size. These include biocompatible materials, high precision, zero backlash, high gear ratio, small number of components and low maintenance.

Biological tissue from 3D printers

3D printers are already being used for mass production in many industrial processes, notable examples being lightweight engineering and aviation. 3D printing also holds great promise in medicine. From dental restoration to knee implants to entire organs, the possibilities seem endless. Although a 3D printed heart, liver or kidney may be beyond reach for some time to come, 3D printing in medicine has long begun. „It opens up the possibility of converting digital data directly into objects. Fabrication into individualised forms is very much to be desired in medicine, and plenty of 3D data is already available as a result of high-tech imaging methods,“ said Dr Kirsten Borchers, Fraunhofer Institute for Interfacial Engineering and Biotechnology (IGB), outlining the excellent starting position. IGB has gone on to develop bioinks for bioprinting, which are produced from gelatine and used to construct chemically crosslinked hydrogels. Gelatine is derived from collagen and closely resembles the natural extracellular matrix. By varying the degree of crosslinking, IGB researchers can produce a matrix of a strength that is compatible with natural tissues such as fat or cartilage. „We modify biomolecules from the extracellular matrix of tissue in a way that enables us to control its gelling behaviour, viscosity and crosslinkability, thus rendering it suitable for use in the bioprinting process,“ Borchers said, describing the complexity involved.

The 10th COMPAMED Spring Convention again delivered a glimpse of the trends and developments shaping medical technology and medical technology industry suppliers – the ideal warm-up for COMPAMED 2016 (14 - 17 November). The leading platform for medical technology suppliers is once more expected to attract 800 exhibitors from more than 40 nations, filling Düsseldorf Fairground halls 8a and 8b to capacity. More than 18 800 visitors thronged to last year's COMPAMED, the highest attendance ever. 130,000 trade visitors from about 120 nations attended MEDICA and COMPAMED 2015 altogether.

In a globally unique dual combination, the world's largest medical trade fair, MEDICA (approximately 5000 exhibitors) and COMPAMED reflect the entire process chain and present a full range of the medical devices, systems and instruments now available. Both shows together take up the whole Düsseldorf Fairgrounds complex (19 halls).

14th - 17th Nov. 2016: COMPAMED, Duesseldorf (D)

Messe Düsseldorf GmbH
D 40001 Düsseldorf



LABVOLUTION/BIOTECHNICA 2017 (16–18 May, Tue.–Thu.)

Highlight smartLAB: the laboratory of the future is back for a second time

smartLAB must be continued – that much was immediately clear to the business and scientific communities after the success of LABVOLUTION in October 2015. Now the visionary project is on course for the next event in 2017. Two government ministries in Lower Saxony – the Ministry for Science and Education and the Ministry for Economic Affairs, Labor and Transport – have allocated funding for the “future laboratory” that ensures the continuing evolution of smartLAB for the upcoming LABVOLUTION/BIOTECHNICA, which runs from 16 to 18 May 2017. And even when the show is over, the intelligent laboratory of the future will not be going away: as the three-day show comes to an end, smartLAB will be transferring to General Factory 4.0 – likewise on the Hannover Exhibition Grounds – and will then be available all year round in the Robotation Academy for viewing and study purposes. The whole project serves to position Lower Saxony as a leading center of excellence for the laboratory of the future.

The funding made available by the two Lower Saxony government ministries was the deciding factor for the next stage in the development and expansion of smartLAB. The project had been initiated in 2015 by a group of scientists and business enterprises from right across Germany, including two local companies in Lower Saxony: Sartorius in Göttingen and Köttermann in Uetze. Under the direction of the Institute for Industrial Chemistry at Hannover’s Leibniz University, smartLAB proved to be one of the main attractions at LABVOLUTION/BIOTECHNICA, with a format combining visionary elements and live demonstration of actual applications. And even after the show, smartLAB continued to arouse great interest. A nationwide smartLAB innovations network for the laboratory of the future has since been formed to promote the development and standardization of innovative lab technologies, with funding provided by the Federal Ministry for Science and Technology (BMW) under the Central Innovations Program for SMEs.

In essence, the smartLAB special presentation is all about identifying visions and solutions that will help laboratories to adapt to changing needs in the age of digitalization and Industry 4.0. The main focus is on four specific areas of interest: the use of automation and robotics; modular design with built-in flexibility; integrated functional interfaces; and digital networking at the horizontal and vertical level. At the next LABVOLUTION/BIOTECHNICA, the laboratory of the future will unveil the next stage in its development. This will involve

greater emphasis on aspects such as visualization, interaction and communication.

The reason why Lower Saxony is supporting the smartLAB project is partly due to the fact that it will not end when the show is finished. From the end of May 2017 smartLAB will become an integral part of the General Factory for the Industry 4.0 center of excellence. This is located in the Robotation Academy at the Hannover Exhibition Center, and is available all year round for participating firms to hold presentations and training courses. The General Factory is principally concerned with the digitalization of the work environment and production processes and operations. What smartLAB brings to the mix is the first example of digitalization in the process engineering sector. New possibilities and synergies are generated by innovations and ideas that come from the various different sectors, all of which helps to drive and enrich the whole debate surrounding Industry 4.0.

16.05. - 18.05.2017: Biotechnica + Labvolution, Hannover (D)

Deutsche Messe AG
D 30521 Hannover



Dans quelques semaines, la 3e édition du SINDEX ouvrira ses portes au sein du parc d'exposition de BERNEXPO. Cette année, le thème clé du principal salon suisse de la technologie est l'«Industrie 4.0 en Suisse». Les conférences d'experts de la branche et les retransmissions en direct depuis des halles de production suisses rendront le SINDEX 2016 particulièrement concret et proche de la pratique. Pas moins de 400 exposants se sont déjà inscrits.

SINDE X 2016: un programme riche au rendez-vous du secteur suisse de la technologie



06th - 08th Sept. 2016: SINDE X, Bern (CH)

La question de l'industrie 4.0 agite toute la branche. Le lien entre l'industrie et Internet offre de multiples opportunités aux grands groupes, mais aussi aux PME. Souvent plus réactives du fait de leur organisation, les petites entreprises sont en mesure de s'adapter rapidement aux nouvelles tendances. C'est précisément là qu'intervient le SINDE X 2016, créant une plate-forme de réseautage et d'échange au sein du secteur helvétique de la technologie, en vue du développement de la place économique suisse.

Diffusions en direct et intervenants prestigieux

Une attraction particulière drainera le public cette année: grâce aux retransmissions en direct depuis des salles d'entreprise, il pourra assister à la production automatisée comme s'il y était. Chez le fabricant de composants en plastique Weidplas à Rütli (ZH) et à la centrale de distribution de Migros à Gossau (SG), les visiteuses et visiteurs du salon découvriront comment se déroule aujourd'hui l'automatisation en Suisse et les questions que se posent les entreprises pour relever les défis du futur. Ils pourront participer activement et poser des questions aux experts. Pour le reste aussi, le programme-cadre est attrayant et réunit une multitude de spécialistes chevronnés. Dans le cadre d'exposés passionnants, ceux-ci transmettront leur connaissance des aspects technologiques et économiques de l'industrie 4.0 en insistant sur la Suisse. Opportunités, risques et innovations: les visiteurs apprendront directement des leaders d'opinion de la branche.

«Impulse: MEM» et pièces d'exposition attrayantes

En parallèle du SINDE X, la manifestation «Impulse: MEM» se tiendra le 8 septembre 2016 dans le cadre de la série annuelle

d'événements «Impulse» de Switzerland Global Enterprise. Cette journée montrera de quelle manière les PME suisses peuvent exploiter les opportunités offertes par l'industrie 4.0 et se positionner de manière prometteuse. Le SINDE X proposera en outre les trois zones spéciales SwissSolutionMarket, Electronic City et SwissSensorMarket. Cette année encore, les exposants font très fort: l'automate d'équipement des borniers de W. Althaus AG à Aarwangen ne manquera par exemple pas d'attirer les regards. Il garnit des borniers pour la construction de commandes et permet l'automatisation des processus dès la première pièce produite. La haute école de Constance sera en outre présente avec son usine modèle. La «Smart Factory» montrera comment l'automatisation de postes de montage peut optimiser les processus de production et permettra aux visiteurs de s'immerger dans le domaine.

Déroulement positif des inscriptions et solide partenaire logistique

Le nombre d'exposants inscrits évolue favorablement. «À la fin du mois de juin, 400 exposants s'étaient inscrits. Cela nous montre que l'industrie 4.0 en Suisse constitue un choix thématique judicieux qui a retenu l'intérêt de la branche», souligne Douglas Krebs, responsable du SINDE X. SEMPEX AG intervient pour la première fois en tant que partenaire logistique. À partir de cette édition, l'entreprise générale veillera à un déroulement sans heurt et optimisera la présence au salon des exposants grâce à sa longue expérience dans la logistique et les prestations de services.

BERNEXPO AG
CH 3000 Bern 22

From 11 to 13 October 2016, on what will be its fifth appearance, Chillventa will once again turn Exhibition Centre Nuremberg into the No. 1 international gathering for the refrigeration, air conditioning, ventilation and heat pump sectors. The one-day Chillventa Congress will kick off the event on 10 October and invites interested trade visitors to find out about the latest trends and developments in the industry. The mood in the industry is upbeat and in 2016 the organiser is expecting all key trade fair performance indicators to be up again.

Chillventa 2016: even bigger with strong international focus

- New hall arrangement guarantees growth
- Chillventa CONGRESS: professional expertise at its finest
- Chillventa AWARD makes its debut

“A good three months before the start of the fair the outlook for Chillventa 2016 is already very good. As things stand today, we will exceed the excellent results from 2014 for exhibitor numbers and exhibition space. We are expecting around 1,000 exhibitors and will again be welcoming more than 30,000 trade visitors from all over the world. In October, the Chillventa motto ‘Connecting Experts’ will once again take centre-stage, and will be reflected in a large number of events during the fair with activities like the Chillventa opening, Chillventa evening or the Indian reception, to name just three examples. The large international contingent among exhibitors (more than 65%) and trade visitors (more than 56%) impressively underscores the key significance of Chillventa as the leading fair for the international refrigeration, AC, ventilation and heat pump communities,” explains Richard Krowoza from the NürnbergMesse Management Team.

More display area for sustainable growth

To keep pace with the steady growth of Chillventa efficiently and sustainably, the organisers have decided to modify the hall constellation for 2016, providing Chillventa with a much larger exhibition area at the Nuremberg venue. “By extending the display area we are not only accommodating the wishes of our exhibiting companies for more space at Chillventa to showcase their products, we can now also position new exhibitors thematically with their product groups. In halls 4, 4A, 5, 6, 7, 7A, 8 and 9, Chillventa will be able to expand systematically in the coming years,” says Daniela Heinkel, Chillventa Exhibition Director at NürnbergMesse. For information on the current hall allocations please go to: www.chillventa.de/floorplan

Thematic focus areas at Chillventa and the Chillventa CONGRESS

With its extensive range of exhibits, Chillventa presents a cross-section of the industry with components, systems and applications for refrigeration, AC, ventilation and heat pumps. This year, the focus of both trade fair and congress will be on issues like current climate targets, eco-design, refrigerants, efficiency through controls, innovation in heat transfer, limits of refrigeration technology and air conditioning of data centres. As well as innovations at exhibitor stands, there will once again be the usual exciting range of special presentations on topics like energy-efficient computing centres, heat pumps for industrial and commercial applications and energy audits for AC and ventilation systems.

Specialist forums offer first hand expertise

In the three forums, renowned presenters will hold more than

120 talks on cutting-edge topics. The latest product developments and innovative solutions for energy efficiency and energy saving will be showcased in hall 9 (applications, training and codes of practice), hall 7A (refrigeration technology) and all 4A (AC, ventilation and heat pumps).

The heat pump – a recurring focus area at Chillventa 2016

Since the launch of Chillventa, the heat pump has always been a permanent feature of the event. “Despite rising energy prices the heat pump has established itself as a practical and attractive alternative to fossil heat generators. Chillventa is acknowledging this development with its special presentations on heat pumps in commercial and industrial use. It is primarily in these areas of application that the heat pump is now showing the way forward,” says Dr.-Ing. Rainer M. Jakobs, Coordinator of the Chillventa supporting programme.

At Chillventa, trade visitors can become acquainted with the energy environment of the future. Whenever and wherever heating and cooling are needed simultaneously, a hybrid heat pump system for heating or cooling is highly efficient and sustainable from day one. The special show in hall 4A focuses on these hybrid systems, providing visitors with an in-depth overview of the wide range of applications for the heat pump in a 3D visualisation of a virtual city.

Special presentation on data centres goes into its second round

The premiere of the special presentation on data centres was a huge success in 2014, so there is all the more reason to repeat the exercise for industry insiders at this year’s fair and make it bigger and better. Energy-efficient data centres call for sustainable air conditioning solutions. Above all, the constantly growing data volumes, increased energy requirement and massive resulting energy costs present the operators of data centres with enormous challenges.

The special presentations at Chillventa, in which renowned companies present their products and services, highlight innovative solutions. Apart from the design of new data centres, the issue of efficient and cost-saving rebuilds of existing data centres also has a role to play. The topic of data centres, which will also be explored at the Chillventa CONGRESS on the day before the fair, is then complemented by relevant product presentations at the special shows.

Training circuit for energy audits of AC and ventilation systems

Following the successful launch of the training circuit for energy audits in 2014, trade visitors can once again learn about the skilled activities involved in conducting the audits. The circuit provides a

Chillventa 2016: even bigger with strong international focus

real-life system on which temperatures, volumetric flows, ambient air qualities and power consumption can be measured and the mechanical and energy status evaluated. The practical aspects of energy audits for AC and ventilation systems to §12 EnEV are not very well known. As a result of the amendment of the EnEV, this auditing activity will become a general obligation in conjunction with DIN SPEC 15240, which also applies.

Premiere: Chillventa AWARD acknowledges expert team performance

The Chillventa AWARD will be presented for the first time at Chillventa 2016. It recognises expert teams (planners, system engineers, clients/operators) that through exemplary collaboration over and beyond technical standards have realised a highly impressive project in respect of functionality, energy consumption and technical innovations. In its evaluation the jury – in keeping with the Chillventa motto Connecting Experts – will consider in particular the interaction between project stakeholders from conceptual formulation through planning and system engineering to operation of the system. In any project submitted for an award, the quality achieved through partnership-driven design must be transparent and documented. Any form of refrigeration, AC or heat pump system (new or rebuild) realised in Europe is eligible for a Chillventa AWARD. Entrants may submit a project for which they have been wholly responsible and which has been completed by the closing date. Project completion must not be more than two years before the cut-off date. All necessary documentation in relating to the AWARD is available from: www.chillventa.de/award

Award makes its debut at Chillventa 2016

The Chillventa AWARD is presented in the four categories commercial refrigeration, industrial refrigeration, air conditioning and

heat pumps. The awards for each category will be presented at Chillventa on 11 October 2016.

International refrigeration and AC network expands in the USA and Russia

With the leading Chillventa trade fair and European Heat Pump Summit in Nuremberg, ACREX India and the European Pavilion powered by Chillventa at the China Refrigeration show, NürnbergMesse has in recent years established an impressive worldwide refrigeration, AC, ventilation and heat pump network.

And the portfolio continues to grow. "We are very pleased to have been commissioned by the Federal Ministry of Economic Affairs and Energy (BMWi) to organise the German Pavilion at the AHR Show in Las Vegas January 2017. In addition, refrigeration technology will also play an important role at the Beviale Moscow in February 2017. Experts worldwide can look forward to the international refrigeration, AC, ventilation and heat pump network that we are going to continue to expand successively wherever it makes sense to do so. Because here too, our motto holds: Chillventa Connecting Experts," reveals Alexander Stein, Executive Director Chillventa, NürnbergMesse.

11.10. - 13.10.2016: Chillventa, Nürnberg (D)

NürnbergMesse GmbH
D 90471 Nürnberg

Different colours

Cleanroom gloves with PU coating



These robust and very comfortable cleanroom gloves protect dust-sensitive products against contamination through perspiration and particles. They are extremely elastic and fit excellently. The non-fuzzing nylon gloves have a urethane coating in the palm area which provides for a good abrasion resistance - however the breathability factor is fully preserved. The reusability is another advantage - the gloves are washable up to 30°C with neutral detergent.

The gloves are available in green, red and blue. For this reason they are especially suited for being used wherever different production zones or lines have to be separated.



Hans J. Michael GmbH
Gewerbegebiet Hart 11
D 71554 Weissach i.T.
Telefon: 07191/9105-0
Telefax: 07191/9105-19
E-Mail: hjm.bk@t-online.de
Internet: <http://www.hjm-reinraum.de>

Flexible workstations capable of displaying a wealth of information at a glance are becoming ever more important in the production environment. Dual-monitor workstation solutions help to increase productivity, as they allow several applications to be opened at the same time without having to switch backwards and forwards. With two monitors it is possible to open and work with the MES and the process control system in parallel for example.

Dual-monitor solutions for a wide range of cleanroom applications



Various options are available for installing a dual-monitor solution in a cleanroom. With the Desktop version the monitors are attached directly to the work top with a flange and tubular sections. We can also supply the stainless steel work top to go with it. Another alternative is to have the dual monitor mounted on a stand bolted to the floor or attached directly to the wall by means of a support arm. But a dual monitor does not mean having to forgo mobility. Anyone wishing to use the monitors at different workstations can opt for the TROLLEY version. In this case the monitors are mounted on a sturdy base with rollers.

All versions are designed to ensure smooth transitions between the individual components. The requirements of protection class IP65 are satisfied. Dual-monitor solutions can be implemented with our PILOT and WAVE HMI systems. The swiveling, tilting monitors can be arranged either vertically on top of one another or horizontally side by side. Customized modifications are possible.



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>

Image rights: Systec & Solutions GmbH

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

Original texts and images

The contributions mentioned by name are the responsibility of the particular author. Reprinting, also of extracts, are permitted only with the approval of the editor and with reference to the source. The publisher does not accept any responsibility for unsolicited manuscripts and illustrations. The publisher is granted the exclusive, spatial, temporal and contentual limited right to freely use the article in unchanged or edited form for all purposes as often as desired or to transfer it to third parties for use. This right of use relates to print and electric media (Internet, databases, data carriers of all kinds).