

Strong momentum for COMPAMED – more than 16,000 visitors

Medical technology suppliers impress the crowds with innovative materials, systems and services

COMPAMED in Düsseldorf is experiencing great momentum. Parallel to MEDICA, the world's largest medical trade fair, more than 16,000 of the altogether 138,000 visitors were interested in the topics and products presented at the leading international trade fair for the supplier's market in medical technology manufacturing (running time: 18th to 20th November).

The more-than-500 exhibitors in halls 8a and 8b at COMPAMED consistently lay the foundations for minor and major improvements to medical technology by means of innovative materials, systems and services and new ideas from the world of micro and nano technology, which promise even greater precision and quality. "Companies in the suppliers' sector really are one of the driving forces behind innovation and efficiency. A quick tour of COMPAMED was enough to convince anyone of this," affirms Wilhelm Niedergöcker, Managing Director of Messe Düsseldorf GmbH.

Manufacturers of precision parts such as threaded dental implants have to demonstrate compliance with increasingly strict specifications regarding smaller measurements and tighter tolerances, and still produce economically. Against this backdrop, non-destructive testing is becoming more and more important. The company ZygoLOT GmbH (Darmstadt) is therefore selling a white-light interferometer, which can replace significantly more cumbersome and expensive scanning electron microscopes. The light reflected by the surface of the object interferes with the light of the reference surface. Along with a special FDA data analysis (Frequency Domain Analysis), this technique also offers a high number of measuring points with a high resolution of 0.1 nanometres. "The measuring surface may be either smooth or rough. No troublesome calibration is required," explains Johann B. Ableiter, Sales Manager at ZygoLOT, which obtains the devices from its American parent organization, Zygo Corporation in

Middlefield (Connecticut, USA). Information regarding the surface quality of implants is essential for correct engraftment.

Structures with precision in the nano range are also the chief concern of the Dutch company DSM Biomedical (Geleen), which specializes in coatings for medical systems such as catheters or stents. They have recently launched a technology by the name of VitroStealth, which prevents “biofouling”; that is, the undesired accumulation of proteins, nucleic acids, cells and bacteria. The new system can be dissolved in a water-alcohol mixture for application, and when exposed to UV light, it adheres exceptionally well to various substances, with a coating thickness of only 200 nanometres. Its repellent effect results from a polymer on the surface, which has a brush-like structure, on which the cells, for example, cannot take hold. The coating is easy and economical to apply using standard techniques such as immersion, spraying, rolling or spin coating and is also suitable for mass production. In addition to UV light, the coating can also be cured thermally.

Organometallic additives against infection

Sources of infection can create problems not only for implants, but for many surfaces in hospitals or sanitary facilities. The European Science Foundation claims that 1.75 million infections are acquired in hospitals every year, ten percent of which are fatal. Against this backdrop, a Berliner company, SteriOne GmbH & Co. KG, has developed so-called “sterions”, which work not only against bacteria, but also against viruses and fungi. “Our sterions can be combined with silicones, thermoplastics, paints and powder coatings as a permanently active additive, which means that we can treat floors, walls, handles and switches,” Matthias-Reinhard Koehn, member of the management at SteriOne, clarifies the broad spectrum of applications. Products are already available for the plastics and paint sectors, which have been developed in cooperation with partners from the respective industries. “The interest is as great as the demand; our first trade fair was a complete success,” says Koehn.

The new materials sector is still very prominent at COMPAMED. The Fraunhofer Institute for Manufacturing Technology and Applied Materials

Research (IFAM, Bremen) is for the first time offering a complete range of biomaterials. “We use commercially available powder of metals, ceramics or polymers and have great expertise in the area of powder injection moulding and micro injection moulding,” explains Philipp Imgrund, Head of Biomaterial Technology at IFAM. Micro components with edge lengths of less than 250 micrometres are possible, and various microstructures can be implemented on surfaces. Implants are an important area of application for biomaterials, for example, implants made of hydroxylapatite, which dissolve themselves and can thus serve as temporary bone screws. An expensive second operation to recover these so-called pins is thereby rendered unnecessary.

The company Sauer & Sohn KG (Dieburg) presented parts for rapid prototyping and rapid tooling. The process starts with carefully sieved metallic powders made of titanium, cobalt chrome steels and stainless steels. These new alloys are a world first. They are designed for pilot applications in LaserCusing and have been approved by the FDA. The prototypes are built up layer-by-layer directly from 3D CAD data. “Each of the layers, which are fused by laser, has thickness of only 0.2 mm,” stresses Armand Bayer, Head of Sales and Marketing at Sauer & Sohn. In this way, it is possible to realize even complex and delicate geometries, such as knee implants, bone fixation devices or surgical instruments. Alternatively, polyjet technology can be used to produce three-dimensional prototypes, which may comprise up to eight material mixtures and are printed in layers. “Almost 1,000 pressure nozzles are employed by the process, and the material is cured with UV light,” reports Bayer.

Fibreglass panels as substitute for x-ray films

Schott AG (Mainz), who's Lighting and Imaging division was represented in Düsseldorf, addresses a completely different issue. “We want to expand our activities in the medical technology sector,” emphasizes Jürgen Freitag, Schott's Sales Manager for Medical Components in Europe and Asia. Plates made of fused fibre optics, manufactured in the company's American plant at Southbridge (Massachusetts), are set to replace the conventional x-ray films used by dentists and to facilitate on-the-spot digital processing

of the images. Larger format plates are also available for this x-ray technique, for example, for mammography. In this regard, the exhibition included the world's largest fibre optics plate, measuring 430 times 430 mm – much larger than a DIN A3 page. Optical fibres also form the basis for innovative lighting equipment, which, among other things, can transport the light directly into the drilling area of a dental turbine. “We are the global market leader in the manufacture of lighting components for dental turbines, and we offer solutions in about 50 different designs,” says Freitag. Other application areas include light conductors for operating microscopes and fibre rods for hardening dental filling materials.

Packaging solutions is another area that is still growing in importance at COMPAMED. Automated Packaging Systems, a company from Streetsboro (Ohio), brought with them to Düsseldorf a special unit, which operates very flexibly with different materials and measurements. “Many manufacturers of syringes, for example, experience the problem that the only packaging options available on the market are large conveyors for huge numbers of items or devices for packing small batches by hand. We have therefore deliberately concentrated on machines in the mid-range, which manage up to 80 bags per minute,” reports Regional Sales Manager Axel Wulff. These modular machines blow the bags open with compressed air and close them with a welded seal. Pressing machines and various material conveyor systems can be added if required. With 35,000 units sold, this American family business is among the market leaders in this packaging sector.

Medical technology is one of the world's most innovative industries, and has extremely short product lifecycles. With an export share of over 65 percent, Germany has an outstanding position here. According to a study entitled “MedTech 2020” and published by the Association for Electrical, Electronic and Information Technologies (VDE), the medical technology industry is undergoing massive changes. Asian countries, for instance, are starting to catch up from behind, which could primarily impact the USA, which is currently the global market leader. The Professional Association for Microtechnology (IVAM) sees an important strategic market for export-

oriented countries in the area of assistance systems: “Aside from the classic financing routes, an aging society will also be investing private funds on customized technologies which enable a secure, self-determined life within one’s own four walls. We can and must start serving this market now; we already have the technical prerequisites,” stresses Dr. Uwe Kleinkes, Director of the IVAM. It is quite possible that we will already see the first exhibits at the next COMPAMED (17 to 19 November 2010).

Online information: <http://www.compamed.de>