LIFE SCIENCE AUSTRIA -> vienna region's newsletter



: editorial

Dear Readers,

this LISA VR News issue focuses predominantly on medical technology. Our healthcare system uses more than 400,000 different products developed by the global medtech industry. Interdisciplinary border-crossing between medical technology, biotechnology and information technology will be highlighted at our next "Life Science Circle" on December 1, 2008 in Vienna. In this context we would like to announce a new booklet on medical technology in Vienna which will present profiles of innovative companies, research institutions and opportunities for advanced training. The topics covered range from in vitro diagnostics, implants and prostheses and optics, to e.g. medical gloves, tools for sleep analysis and health IT and IT-intensive instruments. Please e-mail us at office@lisavr.at to order your free copy.

To meet the growing demand for lab space in Vienna, a number of real estate projects are underway. Campus Vienna Biocenter 3 was recently opened, providing laboratories and offices tailored to the needs of biotech companies. The building amidst the campus was rented out to Intercell and became the company's new headquarters. In September the construction of MARXBOX began. MARXBOX is conceived as a laboratory and office building which will provide space for additional biotechnology companies. After its completion in 2010 it will house up to 450 researchers and developers. In addition, the campus of the University of Natural Resources and Applied Life Sciences at Muthgasse will offer space for start-up companies and research institutes as of autumn 2009.



We are looking forward to meeting you at BIOEurope in Mannheim in November or at **BIOEurope 2009 in Vienna** at the latest, and hope you will enjoy reading this issue of LISA VR News.

Eva Czernohorszky Michaela Fritz

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Siemens establishes ultra-high-field MR lab

In co-operation with the Medical University of Vienna Siemens has provided an ultra-high-field magnetic resonance imaging scanner to promote technological and clinical research and development.

In spring 2008, one of the few worldwide ultra-high-field magnetic resonance (MR) imaging scanners was installed at the Medical University of Vienna by Siemens. This top-spec Siemens Magnetom scanner works at magnetic field intensities of 7 Tesla, which substantially increases image resolution compared to the now standard 3 Tesla machines. The new MR scanner is the latest acquisition of the 1996 founded interdisciplinary Center of Excellence in High-field MR Imaging at the Medical University of Vienna. MR technology is a well-established clinical imaging technique to obtain detailed pictures of patients' inner organs. As a major advantage over computer tomography, MR exclusively uses magnetic fields to obtain 3D body images, avoiding any X-ray exposure which is potentially harmful to patients.

> Excellence in the making

To further explore new MR imaging techni-

ques and their potential regarding clinical application, Siemens and the Medical University of Vienna recently set up a new research centre, the Vienna Advanced Clinical Imaging Center. With this new joint research and development hub significant progress is expected in clinical applications of MR technology for treating diseases such as multiple sclerosis, Parkinson's disease, brain tumours, diabetes and cancer. According to Siemens Austria CEO Brigitte Ederer, key factors for choosing Vienna as the location for this new initiative were availability of highly qualified personnel, local market potential and the possibility of public funding for research and development activities. For the next five years the total budget of the joint research hub is 6.5 Million Euro, to which the Vienna Centre for Innovation and Technology contributes 2 Million Euro.

www.siemens.com

www.meduniwien.ac.at

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Telovital introduces pocket-sized mobile heart monitoring

A small and lightweight box with four touch electrodes worn around the neck enables patients to self-record and analyse their own heart data at any time or place.

A small square plastic box with a button, > Central data access three LEDs and four metal knobs at the back represents the mainstay of the Viennabased medtech company Telovital. But the stylish and rather simple look of clue medical, as the device is called, belies its inner values. It records two minute samples of heart activity in the form of single-channel electrocardiograms when pressed against the patient's chest. Equipped with a largecapacity storage chip it records up to 24 hours of heart signal. A sophisticated piece of on-board software processes the recordings and calculates an average heart beat curve, a heart rate variation graph and a frequency spectrum. "From these data physicians can infer the recent state of heart function as well as the general health status of a patient", says Telovital's managing director Martin Hülsenböck.

But there are more advantages to using clue medical. The data recordings are transmitted to a central server architecture hosted by the company via a mobile phone or the internet. Thus physicians are able to look at recently recorded data remotely with only minimum delay. Alternatively, the recordings can be transferred to a laptop computer and displayed directly. "All this is guaranteed to be confidential as the data is stored under the serial number of the device only", Hülsenböck claims. "If constant electrode positioning is required over longer periods of time, a set of small adhesive electrodes can be used, connected to the central unit by cables. These come with clue medical as standard equipment."

Stress and burnout monitoring

Clue medical is fully certified for medical application. But the company also uses its technology for a parallel product line which is aimed at the lifestyle and fitness market. Looking quite similar, a public version of the device, simply named clue, is aimed at customers who wish to observe their cardiovascular status while at work or during physical exercise. By using clue the company claims to give users an idea of their current stress level and even their susceptibility to burnout.

> Attractive start-up funding programs

Telovital was founded in 2005 and runs its headquarters at Vienna airport. "The infrastructure here is ideal for us", Hülsenböck says, "Visitors can reach us easily from all over the world, and we enjoy the cultural plurality of Vienna." 98 percent of the current production is made for export. But before Telovital had a finished product they went through a three-year development phase. "Without the attractive funding by public R&D programs in Austria we wouldn't have been able to establish business so quickly", says Hülsenböck. Telovital received seed financing from Austria Wirtschaftsservice in 2006.

www.telovital.com



Otto Bock is scaling up its Vienna base

The leading manufacturer of prosthetic devices is to spend close to 19 Million Euro on constructing a new laboratory and office building in Vienna.

Otto Bock is a leading global supplier of innovative products for people with limited mobility. Founded in Berlin in 1919 to provide invalids of the First World War with artificial limbs, the company has become the leading manufacturer of high-tech arm and leg prostheses world-wide. Today, its global headquarters are situated in Duderstadt, Germany. Since Otto Bock's move to Vienna in the 1970s the availability of well-educated personnel as well as collaborations with the Medical University of Vienna and the Vienna General Hospital have continually proven to be a key factor in the company's innovation dynamics. In recent years, public subsidy programs, particularly those run by the Vienna Center for Innovation and Technology, have additionally fostered the company's research and development activities.

Innovation from Vienna

Otto Bock's Austrian branch, with its headquarters in Vienna, is one of the most important R&D centres within the company group. At its Vienna R&D centre Otto Bock has already developed many revolutionary products in the field of medical engineering. "As early as in the 1990s we conceived active hand systems for children", recalls Hans Dielt, Managing Director of Otto Bock in Vienna. "The biggest challenge there was extreme miniaturisation in conjunction with integrated mechatronics." Another example for innovations made in Vienna is the neurally controlled, or thought-powered, arm prosthesis. The intelligent prosthesis can be systematically controlled by the nerves previously moving the healthy arm. This gives the user seven degrees of freedom, meaning seven active joints, and enables a wide range of new activities.

Growing fast: Otto Bock in Austria

Vienna also hosts Otto Bock's headquarters for Western Europe co-ordinating sales activities. Today, the most important markets for Otto Bock are the USA and Germany, as well as other countries in the European Union. Markets in the new EU countries, Turkey and Russia are particularly fast-gro-

C-Leg[®] - the world's first microprocessor-controlled knee ioint



wing, recently showing the highest growth rates. In 2007, Otto Bock reached a turnover of 67 Million Euro. By 2012 Dietl expects that turnover will have increased by 50 percent, breaking the 100 Million Euro barrier. Due to this rapid growth Otto Bock has started to expand its premises. For close to 19 Million Euro the company will erect a new building which will comprise office and lab facilities, a logistics centre, and a multi-storey car park. In addition to the well established R&D in traditional prostheses technologies and sales, Vienna's Otto Bock



subsidiary has been selected to take over responsibility in the field of neurostimulation in which novel methods to electronically stimulate patients' nervous systems are being developed. The orthopaedy market currently has annual growth rates of around six percent. "In the field of neurostimulation we expect even higher growth rates", says Hans Dietl.

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Intercell: Vaccines against Japanese Encephalitis and inflammation of the middle ear

Vienna's biotech success story Intercell expects market approval for its novel vaccine against Japanese Encephalitis in the United States and Australia for the second half of 2008.



Intercell's product pipeline is brimming and new technological approaches are applied to further enrich its product portfolio. Gerd ZettImeissI, CEO of Intercell, comments: "Intercell develops novel vaccines for the prevention and treatment of infec-

Intercell CEO Gerd Zettlmeissl

tious diseases with substantial unmet medical need. Our technology platforms include an antigen discovery system, two proprietary adjuvants and a novel patch-based vaccine delivery system."

> Vaccination without needles

With its vaccine patch, Intercell breaks new ground regarding administering vaccines:

Vaccine patches allow for needle-free handling, with patches having the potential of preventing diseases but also enhancing the efficacy of existing vaccines. Currently, Intercell is working on a vaccine patch against travellers' diarrhea and a vaccine enhancement patch to improve the efficacy of vaccines against pandemic influenza.

Genomic array footprinting meets otitis media

Via a project co-operation with the Laboratory of Pediatric Infectious Diseases at Radbound University of Nijmegen, the Netherlands, Intercell intends to identify candidate molecules for vaccines against inflammation of the middle ear. A key part of this identification process will be applying the novel method of genomic array footprinting to



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detect factors which the illness-inducing bacteria need to survive in vivo. The project is financially supported by the Vienna Center for Innovation and Technology. "Talented people, high quality of life and attractive public funding make Vienna a fertile ground for the biotech industry", says CEO Gerd ZettImeissI.

www.intercell.com



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