PRESS RELEASE

Top10 MedTech Orthopedics Europe: stimOS GmbH named TOP10 medical technology company in Europe 2021 in orthopedics category

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Radolfzell, December 12, 2021. **"*stimOS technology is evolutionary and has the potential to create a new gold standard in the implant market*." This is the final statement of *Medtech Outlook Europe* in its Special Edition *Top 10 Orthopedic Solution Providors in Europe 2021*.**

Each year, the trade journal MEDTECH OUTLOOK selects 10 companies in Europe that, in the opinion of the editors, are among the Top10 in Europe. This year, stimOS GmbH is the only startup to be named *Top10 Medical Technology Company Orthopedics in Europe*, amongst some industry giants such as Brainlab, ImplanTec, Orthofix Medical and Königsee Implantate.

The decisive factor for receiving this award was stimOS' proprietary development, Mimicking Bone Technology (MBT), with which the startup has succeeded in masking implants in such a way that the human body's own bone cells do not recognize a foreign material, but rather bone-like material. This allows the implants to anchor perfectly in the body and prevent infections.

MBT: Osseointegrative. Anti-inflammatory. Transparent.

In addition to these unique material properties, the editors found the offered transparency (voluntary quality seal S.P.E.L. Safety and Performance Evidence Level) of stimOS, with which the company informs customers and users about the individual steps in implant development, equally revolutionary.

"*This award makes us proud and happy",* reports stimOS Managing Director Dietmar Schaffarczyk. *"This election, as a Top10 solution providor, in Europe encourages and motivates us to continue to make our MBT available to all interested implant manufacturers."*

To market MBT, stimOS will act as a service provider or licensor but can also bring its technology to market, through OEM-PLM partnership. The startup has senior experts in biochemistry, medical technology, and regulatory affairs in-house and is a network partner of the AG PolyMORE.

AG PolyMORE

Representatives from industry and academia have joined forces to make the use of polymers in personalized medical technology available to users - surgeons and orthopedic surgeons from a wide range of disciplines - in a way that is (a) industrially scalable, (b) fundable by patients and insurance companies and (c) certifiable by regulators.

About MBT - Mimicking Bone Technology:

MBT^{osseo} is stimOS's patented surface functionalization technology. stimOS developed a covalently bonded 3D continuous biomimetic surface layer, specifically designed for inert implant materials. This development exhibits excellent combinations of surface free energy and mechanical stability. The combination of implant and surface functionalization (MBT) shows high cyto-tolerance for bone constitution and the ingrowth of bone-cells. MBT is (a) biocompatible, (b) avoids infections, (c) preserves healthy bone, (d) stimulates new bone formation, and results in an (e) overall high BIC (bone-to-implant contact), superior to all known surface materials or coating technologies.

About stimOS

stimOS GmbH, a privately held research-company and 13485:2016 certified legal manufacturer, was founded in 2015. stimOS develops innovative technologies and procedures to refine, functionalize and activate implant materials. As a supplier and service provider, stimOS makes this technology available to implant manufacturers. In addition, the company also offers services in the field of product development and certification and develops with the product line spineFuse^{MBT} implants for spinal fusion surgery.

High-Five MBT

stimOS products for implant surface functionalization under the label MBT are available in three different categories: **MBT^{osseo}**, **MBT^{biocid}**, **MBT^{dental}**, **MBT^{active}** and **MBT^{protect}**. All stimOS surface functionalization technologies show superiority regarding the growth of bone cells. Comparative data made by the Universities of Constance, Zurich and Charité Berlin demonstrate excellent results for all MBT surface treatments compared to currently available implant materials.

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MED TECH OUTLOOK TOP 10 ORTHOPEDIC SOLUTION PROVIDERS IN EUROPE - 2021

Top10 MedTech Europa.

stimOS GmbH: TOP10-Medizintechnik-Unternehmen in Europa 2021 in der Kategorie Orthopädie

EN I **DE**

Radolfzell, 12. Dezember 2021. **"*Die Technologie von stimOS ist revolutionär und hat das Potenzial, einen neuen Goldstandard auf dem Implantatmarkt zu definieren*." Dies ist die Kernbotschaft des Medtech-Europe Marktberichtes EU 2021 in der Sonderausgabe *Top 10 Orthopedic Solution Providors in Europe 2021*.**

Die Fachzeitschrift MEDTECH OUTLOOK wählt jedes Jahr 10 Unternehmen in Europa aus, die nach Meinung der Redakteure dieser wichtigen Branchenmagazins zu den Top10 in Europa gehören. Im Jahr 2021 wurde die stimOS GmbH als einziges Startup neben Branchengrößen wie Brainlab, ImplanTec, Orthofix Medical und Königsee Implantate als Top10 Medizintechnikunternehmen Orthopädie in Europa ausgezeichnet.

Ausschlaggebend für die Nominierung war die stimOS-Eigenentwicklung Mimicking Bone Technology (MBT), mit der es dem jungen Unternehmen gelungen ist, Implantate im Körper des Patienten so zu maskieren, dass die körpereigenen Knochenzellen im Implantat keinen Fremdkörper, sondern knochenähnliches Material erkennen. Dadurch können sich Implantate perfekt im Körper verankern, Infektionen werden verhindert.

MBT: Osseointegrativ. Entzündungshemmend. Transparent.

Neben diesen einzigartigen Materialeigenschaften fanden die Redakteure die Transparenzoffensive (S.P.E.L. Safety and Performance Evidence Level) von stimOS gleichsam revolutionär, mit der das Unternehmen Kunden und Anwender über einzelnen Schritte in der Implantatentwicklung informiert.

"Diese Auszeichnung macht uns stolz und glücklich", berichtet stimOS-Geschäftsführer Dietmar Schaffarczyk. "Die Wahl in die Top10 in Europa bestärkt und motiviert uns weiterhin, unser MBT allen interessierten Implantatherstellern zur Verfügung zu stellen."

Für die Vermarktung dieser Technologie wird stimOS als Dienstleister oder Lizenzgeber auftreten, kann aber auch Entwicklungen in einer OEM-PLM-Partnerschaft auf den Markt bringen. stimOS hat dazu interne Senior-Experten in Biochemie, Medizintechnik und Regulatory Affairs im Haus und ist Netzwerkpartner der AG PolyMORE.

AG PolyMORE

Vertreter aus Industrie und Wissenschaft haben sich 2021 zusammengeschlossen, um den Einsatz von Polymeren in der personalisierten Medizintechnik den Anwendern - Chirurgen und Orthopäden unterschiedlichster Fachrichtungen - in einer Weise zugänglich zu machen, die (a) industriell skalierbar, (b) von Patienten und Versicherungen finanzierbar und (c) von den Regulierungsbehörden zertifizierbar ist.

Über MBT - Mimicking Bone Technology:

MBT^{osseo} ist unsere patentierte Technologie zur Oberflächenfunktionalisierung. stimOS entwickelte eine kovalent gebundene, homogene, biomimetische 3D-Oberflächenschicht, speziell für inerte Implantatmaterialien. Die Kombination aus Implantat und Oberflächenfunktionalisierung (MBT) zeigt eine hohe Zytotoleranz für den Knochenaufbau und das Einwachsen von Knochenzellen. MBT ist (a) biokompatibel, (b) vermeidet Infektionen, (c) erhält den gesunden Knochen, (d) stimuliert die Knochenneubildung und führt zu einem (e) insgesamt hohen BIC (Knochen-Implantat-Kontakt), der allen bekannten Oberflächen-materialien oder Beschichtungstechnologien überlegen ist.

Über stimOS

Die stimOS GmbH, ein privates Forschungsunternehmen und 13485:2016-zertifizierter Medizintechnik-Hersteller, wurde 2015 gegründet. stimOS entwickelt innovative Technologien und Verfahren zur Veredelung, Funktionalisierung und Aktivierung von Implantatmaterialien. Als Zulieferer und Dienstleister stellt stimOS diese Technologie den Implantatherstellern zur Verfügung. Darüber hinaus bietet das Unternehmen auch Dienstleistungen im Bereich der Produktentwicklung und -zertifizierung an und entwickelt mit der Produktlinie spineFuse^{MBT} Implantate für die Wirbelsäulenfusionschirurgie.

High-Five MBT

Die Produkte von stimOS zur Oberflächenfunktionalisierung von Implantaten unter dem Label MBT sind in verschiedenen Kategorien erhältlich: MBT^{osseo}, MBT^{biocid}, MBT^{dental}, MBT^{active} und MBT^{protect}.

Alle stimOS-Oberflächenfunktionalisierungstechnologien zeigen eine Überlegenheit in Bezug auf das Wachstum von Knochenzellen. Vergleichsdaten der Universitäten Zürich und der Charité Berlin zeigen für alle MBT-Oberflächenbehandlungen hervorragende Ergebnisse im Vergleich zu derzeit verfügbaren Implantat-materialien.

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Please read here the complete story from Medtech Outlook Europe 2021

stimOS GmbH

Bio-inspired Approach to a Pain-free Life

Going through surgery is hard enough but having to go under the knife again because of healing abnormalities or undesirable body reactions caused by an implant is traumatic. These repeat procedures are not uncommon, but it is evident that repeatedly opening a wound deteriorates the patient's already compromised immune system. Often the life of orthopedic implants is severely hampered by infections, corrosion, excessive inflammation, toxicity, poor osseointegration, and foreign body effects. In many instances, when an implant doesn't heal properly, it results in severe discomfort, amputation, hospitalization, and, in some circumstances, more fatal consequences. Adding to the woes is the age-old challenge of implant loosening and inflammatory reactions caused by inert implant materials, which is yet to be successfully addressed. For years, material manufacturers, medics, and implant manufacturers have been looking for an implant material that heals and anchors optimally in the patient's body while being free of negative side effects. This is where stimOS comes in, with its innovative smart implant technology providing patients with the best treatment possible while minimizing revisions due to botched procedures.

Germany-based stimOS's ISO validated and certified revolutionary smart implants modification processes address the patient's requirement for improved osseointegration and less inflammatory reactions. With the patented stealth innovation, Mimicking Bone Technology (MBT) offered by stimOS, the company is able to functionalize implant surfaces, conceal the undesired qualities of the original material, and provide osseointegrative, antibacterial, or corrosion-protective capabilities as required. This one-of-a-kind biochemical technology promotes early and healthy bone formation, provides optimal anchoring in osteoporotic bone, is anti-inflammatory, and respects all regulatory requirements. This is demonstrated by the company's voluntary quality seal S.P.E.L. As one of the first companies stimOS informs patients and users about the Safety and Performance Evidence Level of the technology during design and development. This transparency offensive is just as unique and revolutionary as the surface technology itself.


Dietmar Schaffarczyk

The primary goal of stimOS is to transform implant surfaces from an artificial barrier in the patient's body to a bone-identical implant body interface to eliminate inflammatory responses, infections, and re-operations. "MBT masks the implant material in a way that the patient's anatomy no longer recognizes implants as foreign bodies," says Dietmar Schaffarczyk, CEO and managing partner of stimOS.

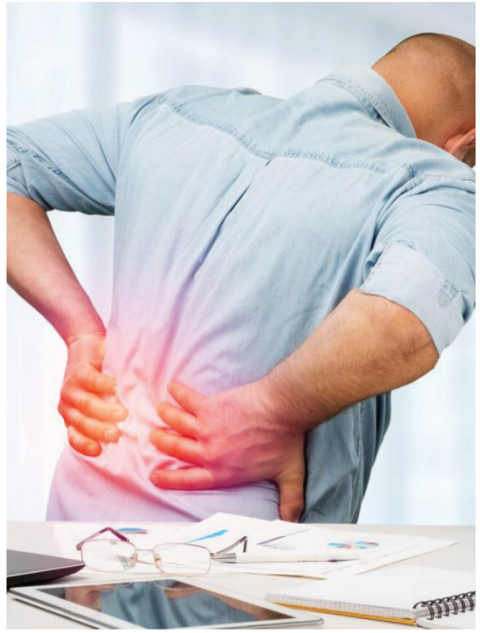
Schaffarczyk points out that other solution providers in the market merely put a covering on the implant surface. However, methods like this are troublesome since the coating process frequently negatively affects the implant material, and there are major issues with abrasion, delamination, and/or metal ion leakage. With MBT, stimOS provides a completely new solution. Rather than depending on coating methods, the company biochemically restructures implant surfaces with a covalently bonded activation layer. By doing so, stimOS provides inert materials with biological properties similar to those found in nature.

Benchmark in Smart Implant Technology

With a commitment to providing the highest quality products, services, and technologies, stimOS not only assists the medical device sector, but also supports surgeons and hospitals, in implementing additive manufacturing processes. This includes everything from manufacturing services to evaluating, building, and operating competence centers. Along with innovative smart implant technology, stimOS also provides 3D printed implants and instruments, as well as point of care solutions to doctors, enabling them to deliver the best possible treatment to patients and ensure a pain-free life after surgery.

> **"MBT masks the implant material in a way that the patient's anatomy no longer recognizes implants as foreign bodies**

To showcase stimOS' expertise, Schaffarczyk draws attention to a project done with an exclusive network —AG PolyMORE network, in which the company was able to produce an additively manufactured polymer implant for the cardio surgery department of a renowned university hospital. The network is home to a consortium of experts that combine knowledge in filament and composite material manufacturing with construction and additive manufacturing know-how, as well as medical 3D printing manufacturers' expertise. Alongside this team of experts, stimOS was able to produce one of the first additively manufactured, 3D printed polymer cardiovascular implants in a unique competence center setting using a patient-matched manufacturing method. This was not traditional 3D printing because the majority of 3D printed implants or additive manufactured implants are



fabricated from titanium by electron beam melting or other 3D printing techniques. Adding into the bargain, this project also exemplified the effective combination of antimicrobial implant surfaces, polymer materials, additive manufacturing of polymer implants, and approval expertise in a patient-benefiting project.

With an outstanding value proposition already in place, Schaffarczyk believes stimOS has a lot more to offer in the upcoming years. The company is currently actively working towards the success of two important milestones; implantation of surface-modified spine and 3D printed polymer implants as well as complete metal-free highly osseointegrative dental implants in a point of care manufacturing setting. Over the next few years, stimOS intends to expand into drug and pharmacy distribution via implant surfaces, as well as address antibacterial properties not inside the pharmacy but by biochemically transforming the surface. Additionally, the company also intends to share its findings and its industrial scalable process with any industry partner interested in this technology, as the stimOS technology is evolutionary and has the potential to create a new gold standard in the implant market.