Titan Spine Expands Intellectual Property with Four New Patents for Interbody Fusion Platform

Business Wire

Titan Spine, a medical device surface technology company focused on developing innovative spinal interbody fusion implants, announced today that it has been awarded four new patents in 2013 from the U.S. Patent and Trademark Office. These patents relate to Titan's unique implant surface technology, as well as the design of its Endoskeleton ® interbody device and specialized system instrumentation.

The most recent, U.S. Patent No. 8,480,749, was received July 9 for aspects of the Company's roughened implant surface, which features a unique combination of macro, micro and cellular-level textures shown to help induce the production of biologically active proteins necessary for bone growth.[1] In total, Titan Spine now holds ten patents, with an additional 14 applications under review and expected to be awarded this year. For 2012, Titan Spine was among the top three Companies to secure patents in the interbody fusion space.[2] Chad Patterson, Director of Product Development and Operations for Titan Spine, said, "Our surface treatment technology and interbody device design are truly unique in spinal care, as confirmed by the award of these new patents. We are pleased to be a leader in interbody IP and excited to continue to innovate and expand our portfolio to further pioneer the application of surface technology, implant design and advanced surgical techniques speeding patient recovery in spine care." Titan Spine applies a proprietary treatment to its titanium devices to produce a textured surface that creates the ideal surface energy for enhanced bone production at the fusion site. This surface technology is featured on Titan's full line of Endoskeleton ® interbody devices for the cervical and lumbar spine. Additional aspects of the Endoskeleton ® platform protected by these new patents include the devices' unique shape, designed to rest on the apophyseal ring of the vertebral endplate for strength and stability, and large windows for increased bone graft volumes and improved radiographic visualization and fusion evaluation.

Barbara Boyan, Ph.D., Dean of the School of Engineering at Virginia Commonwealth University, said, "The specific combination of Titan Spine's surface textures produces a distinct biological response at the implant site that is unmatched by PEEK implant surfaces. In-vitro research supports this difference between Titan's devices and other interbody cages beginning at the cellular level, which may extend to an improved environment for fusion." Paul Slosar, MD, orthopedic surgeon at SpineCare Medical Group and the San Francisco Spine Institute in San Francisco, CA, as well as Medical Director for Titan Spine, commented, "The science behind Titan Spine's implants is translating into significant clinical benefits. In my experience, patients are fusing more quickly and exhibiting robust fusion, with meaningful, sustained pain reduction and functional improvement. While traditional interbody cages serve mainly to provide structure to the fusion site, Titan's devices also

enhance the fusion process and represent the future of spine implant development."

For more information about Titan Spine and its unique surface technology, visit www.TitanSpine.com.

[1] Olivares-Navarrete, R., Gittens, R.A., Schneider, J.M., Hyzy, S.L., Haithcock, D.A., Ullrich, P.F., Schwartz, Z., Boyan, B.D., 2012, Osteoblasts exhibit a more differentiated phenotype and increased bone morphogenetic production on titanium alloy substrates than poly-ether-ether-ketone, The Spine Journal, v. 12, p. 265-272.
[2] Spinemarket. Spine-related Patent Analysis 2000-2012.

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