EOS and IMDS Join Forces to Create Breakthrough Medical Products

EOS

Partnership is the most comprehensive pairing of additive manufacturing with full-service contract medical device product development

EOS, the technology and market leader for design-driven, integrated e-Manufacturing solutions for industrial applications, is joining forces with Innovative Medical Device Solutions (IMDS), the strategic source for full-service medical device development and manufacturing. Together they offer customers, including industry-leading orthopedic and spine surgeons and implant companies, extensive product development resources for creating novel metal additive manufacturing (AM) designs.

This partnership will allow IMDS to manufacture products with patient-benefiting features that are made possible with the use of AM technology.

“Until now, using AM for medical devices was considered a high-technology novelty done on a few implants, but mainly used to make quick metal prototypes,” says Dan Justin, Chief Technology Officer for IMDS. “However, recent advances—such as increased materials choices, enhanced manufacturing precision, and faster build speeds—have made medical product developers worldwide more willing to co-invest in developing implants made by laser-sintering systems. This partnership marks the most comprehensive resource alignment between contract medical device development and metal additive manufacturing expertise available to our industry.”

EOS offers decades of experience designing and manufacturing laser-sintering systems that can create high-quality prototypes and end-use parts. IMDS specializes in partnering with medical device customers to develop and produce new implant and instrument systems. The company has recently added the latest-generation EOSINT M 280 direct metal laser-sintering (DMLSTM) systems to its already industry-leading product development and manufacturing capabilities across the U.S.

In response to requests by major medical product developers, EOS and IMDS have begun investigating partnerships with leading companies to bring out products that could only have been imagined previously.

“Our laser-sintering technology has opened up a door for developers who have formerly focused on subtractive processes,” says Andrew Snow, Regional Sales Director, EOS of North America, Inc. “Instead of being constrained by traditional technology, engineers and medical professionals are now free to explore a world of new designs—perhaps with varied porosity built in, or features nested inside.”

For example, most titanium implants are currently manufactured by subtractive

machining, followed by adding a porous coating. Now, some implants under development are being built one 20-micron layer at a time on high-precision DMLS machines. Each finished product is a functionally gradient single piece that transitions from a precisely shaped porous structure to a less porous, more solid load-bearing structure—a design with significant performance benefits that is not practical to undertake with traditional processes. Other designs in development include patient-specific surgical guides for placement of pins, saws, and drills.

In the long term, the partnership will also provide orthopedic companies with a more cost-effective design-to-manufacturing pathway for customized implants—for instance, ultra-thin, bone-conserving hip, knee, and shoulder joint bearing implants—digitally designed from patient CT scans. DMLS can build medical products from regulatory approved implant materials such as stainless steel, cobalt-chrome, or titanium alloys.

The two companies will exhibit at the North American Spine Society (NASS) 2012 Annual Meeting (Dallas, Texas, Oct. 24-27), where IMDS will showcase the EOSINT M 280 and laser-sintered display pieces in IMDS booth # 2821. Also on display are parts created with software from WITHIN, an EOS partner and IMDS collaborator, which provides significant design-driven manufacturing capabilities to the overall e-Manufacturing solution. WITHIN Medical software optimizes the design of innovative lattice structures. www.withinlab.com [1]

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[1] http://www.withinlab.com