

Solvay helps DiFusion Technologies innovate new ZFUZE osteoconductive PEEK composite for spinal implants

Alpharetta, Ga., Nov. 9, 2017 --- Solvay, a leading global supplier of specialty polymers, announced that medical device-maker DiFusion Technologies chose Zeniva® ZA-500 polyetheretherketone (PEEK) as the base polymer for its ZFUZE osteoconductive PEEK composite for spinal implants. The new compound exhibited large areas of new bone formation on all bone implant surfaces in recent testing by DiFusion, who shared its results at the recent NASS 2017 event in Orlando.

PEEK is an attractive alternative to titanium for spinal implants because it shares similar modulus to bone, and its radio transparency allows for easy visualization in X-rays. The polymer is also inert, which means it does not interact with human tissue. While this quality supports biocompatibility, it means that PEEK does not naturally lend itself to bone growth. DiFusion solved this problem by compounding negatively charged zeolites into Solvay's Zeniva® PEEK polymer.

"It was sort of a penicillin moment," said Derrick Johns, CEO of DiFusion Technologies. *"We started out engineering anti-microbial polymers by first loading zeolite particles with silver before compounding them. But we discovered if we took the silver cations out of the zeolite, they imbued PEEK with a negative charge. Osteoblast cells are attracted to the negatively charged surface at a far higher rate than titanium, and yet we were able to preserve the polymer's outstanding visualization, modulus and strength benefits."*

Solvay was an early collaborator in the development of DiFusion's patented ZFUZE composite, combining industry-leading materials expertise with technical and regulatory support for medical devices. Zeniva® ZA-500 PEEK was of particular interest to DiFusion due to the polymer's higher flow, which facilitates both the compounding process and the extrusion of osteoconductive implants.

"In addition to our materials expertise, Solvay's open innovation business model was instrumental to the successful innovation of DiFusion's ZFUZE osteoconductive composite," said Jeff Hrivnak, global business manager for Healthcare at Solvay's Specialty Polymers Business Unit. *"Our uniquely collaborative approach to customer projects differentiates us from other PEEK suppliers in this industry, and it allowed us to pool our respective capabilities and resources with DiFusion to solve this demanding challenge."*

DiFusion's ZFUZE composite technology is in the final stages of its 510K approval process with the U.S. Food and Drug Administration. It is expected to be commercially available in the U.S. early next year.

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DiFusion Technologies, Inc.

Founded in 2008 in Austin, Tex., DiFusion Technologies, Inc. is a medical device company focused on reducing the rising incidence of surgical site infections in orthopedic and spine surgery through the development of a suite of patented antimicrobial orthobiologic polymeric implants. Initially focusing on the multi-billion dollar spinal implant market, the company has developed a technology with applicability across a variety of orthopedic segments using well characterized implants with benefits for the patient, surgeon, hospital and payer. For more information about DiFusion Technologies, visit www.difusiontech.com.

Solvay

Solvay is a multi-specialty chemical company, committed to developing chemistry that addresses key societal challenges. Solvay innovates and partners with customers in diverse global end markets. Its products and solutions are used in planes, cars, smart and medical devices, batteries, in mineral and oil extraction, among many other applications promoting sustainability. Its light weighting materials enhance cleaner mobility, its formulations optimize the use of resources and its performance chemicals improve air and water quality. Solvay is headquartered in Brussels with around 27,000 employees in 58 countries. Net sales were € 10.9 billion in 2016, with 90% from activities where Solvay ranks among the world's top 3 leaders. Solvay SA (SOLB.BE) is listed on Euronext Brussels and Paris (Bloomberg: SOLB.BB - Reuters: SOLB.BR) and in the United States its shares (SOLVY) are traded through a level-1 ADR program.

Solvay Specialty Polymers

Solvay Specialty Polymers manufactures over 1500 products across 35 brands of high-performance polymers – fluoropolymers, fluoroelastomers, fluorinated fluids, semi-aromatic polyamides, sulfone polymers, ultra-high performance aromatic polymers, and high-barrier polymers – for use in Aerospace, Alternative Energy, Automotive, Healthcare, Membranes, Oil and Gas, Packaging, Plumbing, Semiconductors, Wire & Cable, and other industries. Learn more at www.solvayspecialtypolymers.com.

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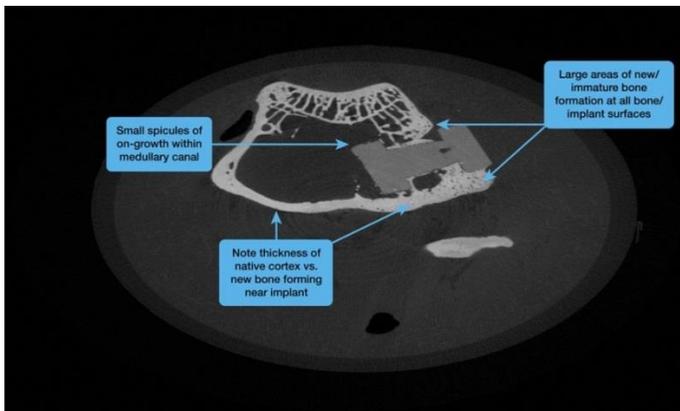
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Solvay's biocompatible Zeniva® ZA-500 PEEK was chosen by DiFusion Technologies for use in its ZFUZE osteoconductive PEEK composite for spinal implants. Photo courtesy of DiFusion Technologies.