

Rapid Shape evaluates medical device applications in bioresorbable 3D-printing resins

Rapid Shape and 4D Biomaterials team up to evaluate medical device applications with new bioresorbable 3D-printing resins using next generation vat polymerization technology

Frankfurt/Main, 11-18-2021 - Rapid Shape is evaluating a partnership between its vat polymerization 3D-printing technology and a new class of bioresorbable materials trademarked 4Degra® from 4D Biomaterials.

A UK-based University of Birmingham spin out company, 4D Biomaterials developed 4Degra with the aim of improving patient care and recovery after major medical procedures. They have used 3D-printers from Rapid Shape to produce the first prototype medical devices with the new resin-based inks, yielding highly encouraging results that are paving the way for the two companies to work together to further develop medical devices using the revolutionary new materials.

4Degra resin inks are based on revolutionary polycarbonate urethane chemistry and can be printed using DLP to create finely detailed implantable medical devices that support the body's natural healing processes before degrading into harmless by-products that are absorbed and removed through normal metabolic processes. The chemistry can also be tuned so that the 3D-printed product exhibits a wide range of mechanical properties, from soft, pliable, adipose tissue-like behaviour to firm and rigid bone-like properties.

As market leader in the hearing aid industry and top player in the dental 3D-printer space, Rapid Shape has extensive experience with medical material, device and workflow validation and intends to increase the use of its systems with 4Degra. Rapid Shape is using next generation force feedback technology to print parts at high speed, using the lowest layer-by-layer separation forces and with in-situ process control.

“Working with 4D Biomaterials provides us with the opportunity to expand our offering further into the medical device market,” says Andreas Schultheiss, CEO of Rapid Shape. „4Degra represents a breakthrough in biocompatible materials and working with the 4D Biomaterials team allows us to be part of something truly innovative when it comes to patient care.“

Philip Smith, CEO of 4D Biomaterials said, “Rapid Shape’s machines are a great match with our 4Degra resin inks and we look forward to working together with them and medical device vendors to bring about a new era of innovation in 3D-printed resorbable medical devices.“

Both companies will exhibit at **FORMNEXT** in Frankfurt, Germany, Nov. 16-19. Rapid Shape in hall 12.1, Booth C79 and 4D Biomaterials’ stand can be found in Hall 11 Stand B59.

About Rapid Shape

Rapid Shape is a German company that specializes in the development and manufacture of high-end systems for additive printing. Rapid Shape has positioned itself as one of this industry’s leaders through proprietary technology that has set new standards in speed, reliability and precision. Rapid Shape provides solutions for industrial, dental, hearing aid and jewellery markets. Precision, quality, and cooperation with sales, material and technology partners distinguishes this company from its competitors. For further information about Rapid Shapes 3D-printers please visit www.rapidshape.de

About 4D Biomaterials

A spin-out from the Universities of Birmingham and Warwick, based on 15 years of academic research, 4D Biomaterials has developed 4Degra - a new class of bioresorbable 3D-printing resin inks for implantable medical device applications. The biocompatible shape memory photopolymers can be 3D-printed into flexible or rigid devices that promote tissue repair, then controllably degrade into benign, resorbable by-products. For more information, please visit www.4dbiomaterials.co.uk

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