Press Release

Geleen, 6 November 2018

DSM adds 3D-printing grades to Digimat to accelerate adoption of polymer additive manufacturing

Royal DSM, a global science-based company in Nutrition, Health and Sustainable Living, today announced the addition of four additive manufacturing (AM) grades into Digimat-AM, an e-Xstream solution awarded by JEC Innovation 2017, JEC innovation Asia 2018 and finalist of ACE Award for Composite Excellence at CAMX 2018.

The combination of DSM's high-performance AM grades with e-Xstream's accurate printing process simulation solution will allow manufacturers and end-users to identify manufacturing issues before printing their material using DSM 3D printing thermoplastic grades. Digimat-AM enables them to work on high quality materials without wasting time and cost since they avoid hundreds of trials and errors and have the opportunity to print it first time right.

"DSM is a long-term partner and now we are very excited to join forces to further accelerate the adoption of polymer additive manufacturing. Combining DSM materials' portfolio with Digimat modeling technology will allow to demonstrate the advantages of 3D printing in many applications at affordable costs", says Guillaume Boisot, Business Development Manager at e-Xstream engineering.

Nirali Surati, Product manager Additive Manufacturing Solids at DSM commented: "Additive manufacturing is quickly evolving from prototyping into mainstream manufacturing. One of the most important enablers is the capability to predict the behavior and performance of 3D printed parts in applications. Thanks to the collaboration with e-Xstream Engineering our customers now have the toolbox to design and predict reliable parts with the performance required for their application." DSM is one of the few AM material companies to offer this to their customers.

In the next Digimat 2019.0 release, the digital twins of these materials will be available as Digimat material models to perform FFF process simulation and part performance prediction in the Digimat Additive Manufacturing Solution. The addition of these grades to the Digimat material database will help engineers to optimize materials, printers and parts in a fraction of the time and cost of the traditional build and test method. The improved accuracy provided by Digimat simulation makes it possible for DSM AM materials end-users to reduce weight, cost and time-to-market while reducing material testing and prototyping requirements.

DSM added four 3D printing grades into Digimat-AM database:
- Novamid® ID 1030, a high-quality polyamide 6/polyamide 66, whose unique properties enable parts with a good balance between stiffness, modulus and impact properties. Novamid® ID1030 is easy to print and parts exhibit excellent interlayer strength and high surface quality.
- Novamid® ID 1030 -CF10, a 10% Carbon fiber reinforced PA6/66 filament designed for printing functional prototyping and industrial parts. Its excellent mechanical properties and smooth surface appearance make it ideal for a very broad range of applications that require robust mechanical performance at elevated temperatures (HDT up to 180°C) or light weight applications in various markets

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- Novamid® ID 1070, a premium PA6 with very good mechanical performance due to unique co-polymer technology. This technology offers high stiffness due to high crystallinity and very high interlayer strength for demanding robust parts in PA6.
- Arnite® ID 3040, a high-performance engineering plastics that combines high strength and impact resistance with excellent processing characterics. With a melting point a 255°C, Arnite® ID 3040 is well suited for a broad range of automotive, electrical & electronic consumer goods applications.

"We are very excited to work with DSM on the characterization and simulation of their high performance FFF grades to answer a key challenge of today's AM industry: the need of AM-focus numerical simulation models and tools. Working with a pioneer actor of the AM industry will also help continuously improving our Digimat Additive Manufacturing simulations. This recent joint effort on AM ultimately strengthens the long beneficial collaboration between e-Xstream and DSM." – says Olivier Lietaer, Business Development Engineer for Additive Manufacturing at e-Xstream engineering.

DSM and e-Xstream will showcase their additive manufacturing materials and software at Formnext, from 13-16 November in Frankfurt Messe. Company experts will present on *Modelling Process and Performance of Fused Filament Fabrication at the* TCT Introduction stage @ formnext on Friday, 16th November 2018 at 13:30-13:45 in the 'Inspection, Testing and Measuring' stream.

You can find DSM Additive Manufacturing Solutions in Hall 3.0, stand E01; the Additive Manufacturing solutions of e-Xstream engineering can be found under the MSC Software umbrella in Hall 3.0, Stand E79 exhibiting with Simufact, both part of Hexagon, along with a selection of Hexagon mobile measurement technologies.

DSM – Bright Science. Brighter Living.™
Royal DSM is a purpose-led global science-based company in Nutrition, Health and Sustainable Living. DSM is driving economic prosperity, environmental progress and social advances to create sustainable value for all stakeholders. DSM delivers innovative business solutions for human nutrition, animal nutrition, personal care and aroma, medical devices, green products and applications, and new mobility and connectivity. DSM and its associated companies deliver annual net sales of about €10 billion with approximately 23,000 employees. The company is listed on Euronext Amsterdam. More information can be found at www.dsm.com.

About e-Xstream Engineering
Founded in 2003, e-Xstream engineering is a software and engineering services company 100% focused on the multi-scale modeling of composite materials and structures. The company helps customers, material suppliers, and material users across many industries reduce the cost and time needed to engineer innovative materials and products using Digimat, the nonlinear multi-scale material and structure-modeling platform. Since September 2012, e-Xstream engineering is a wholly owned subsidiary of MSC Software.

About MSC Software
MSC Software is one of the ten original software companies and a global leader in helping product manufacturers to advance their engineering methods with simulation software and services. As a trusted partner, MSC Software helps companies improve quality, save time, and reduce costs associated with design and test of manufactured products. Academic institutions, researchers, and students employ MSC's technology to expand individual knowledge as well as expand the horizon of simulation. MSC Software employs 1,300 professionals in 20 countries. For additional information about MSC Software's products and services, please visit: www.mscsoftware.com

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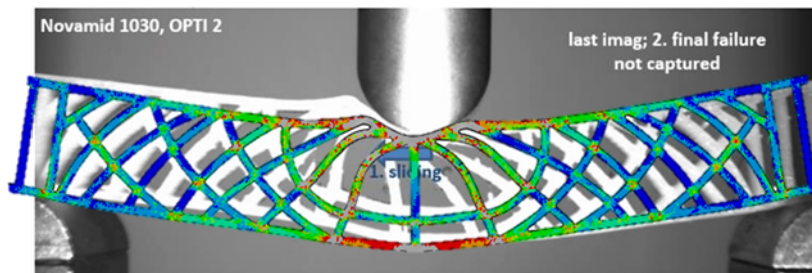
(Photo file: Novamid ID1030 bending beam.png)
Image: Simulation of Novamid® ID1030 on Digimat-AM

(Photo file: Nirali Surati.jpg)
Image: Nirali Surati, Product manager Additive Manufacturing Solids at DSM