

Evonik develops material systems for the series production of plastic parts by means of 3D printing

- Research collaboration with Voxeljet is paving the way for using 3D printing for industrial production of large final parts
- For the first time, Evonik is presenting developments of powder–binder systems for a scalable binder–jetting method
- The Additive Manufacturing innovation growth field is thus being further expanded

Essen, Germany. Creavis, the strategic innovation unit of the specialty chemicals company Evonik, and Voxeljet AG, based in Friedberg, Bavaria, Germany, have entered into a collaboration to develop material systems for the next generation of the binder–jetting method in 3D printing.

Binder–jetting involves a powder being applied in layers and being bonded with a binding agent that is printed on precisely by an inkjet print head in accordance with the particular part. Thanks to the use of large–scale and rapid inkjet technology and printing at room temperature, this method is currently the most productive and most scalable method for 3D printing.

The method has been used with great success for several years in mold–making, for example in the printing of sand casting molds and cores. However, the previously available material systems for producing industrial final parts are mostly not suitable in terms of their mechanical properties.

“Voxeljet is one of the leading manufacturers of large–scale high–speed printers for mold–making,” said Prof. Stefan Buchholz, executive director of Evonik Creavis GmbH. “We have made it our goal to work with Voxeljet to develop new powder–binder systems that will for the first time enable this method to be used to manufacture polymer parts for industrial use.”

Evonik’s many years of experience with polymer powders for various 3D printing technologies and binders fine–tuned to suit

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the method form the basis of the development of these innovative material systems.

“In Evonik we have found an outstanding collaboration partner that will provide us with tailored material systems for our efficient printing technology. With this research collaboration, we aim to fulfill our aspirations of entering into the safe and robust additive manufacturing of stable polymer final parts in series production,” said Dr. Ingo Ederer, CEO of Voxeljet.

The development work for powder–binder systems are part of the Evonik Additive Manufacturing innovation growth field, in which the group is pooling its 3D printing expertise. “Our strategic focus is on the development and manufacture of “ready–to–use” high–performance materials across the major branches of technology,” said Thomas Große–Puppendahl, who runs this innovation growth field at Evonik. “Our close collaboration with our customers and partners is what enables us to forge ahead with innovation.”

From November 19 to 22, 2019, Evonik will be giving insights into the research work on the binder–jetting method for additive manufacturing at the formnext trade show in Frankfurt a.M. in hall 12.1, stand C71.

Company information

Evonik is one of the world leaders in specialty chemicals. The focus on more specialty businesses, customer-oriented innovative prowess and a trustful and performance-oriented corporate culture form the heart of Evonik's corporate strategy. These are the levers for profitable growth and a sustained increase in the value of the company. Evonik benefits specifically from its customer proximity and leading market positions. Evonik is active in over 100 countries around the world. In the financial year 2018, the company, employing more than 32,000 employees, generated sales of €13.3 billion and an operating profit (adjusted EBITDA) of €2.15 billion from continuing operations.

About Creavis

Creavis is the strategic innovation unit of Evonik. It focuses on medium to long-term innovation projects that support Evonik's growth and sustainability strategies and open up new business options. Creavis carries out research into transformative innovations while taking economic, ecological, and social aspects into account in its portfolio management. Creavis also develops competence platforms and provides these for Evonik. Creavis is the creative initiator of innovations for Evonik. www.creavis.com

About voxeljet

voxeljet (NYSE: VJET) is a leading OEM and provider of high-speed, large-format 3D printers and on-demand parts services to industrial and commercial customers. The Company has longstanding relationships with blue chip customers like BMW, Daimler, VW and others. voxeljet was founded 1999 as a spin-off from TUM in Munich with a clear vision in mind: to establish a new manufacturing standard. Meanwhile, voxeljet employs more than 300 people and 3D prints more than 100,000 parts per year in 3D parts production centers in Europe, the US and China. The Company's 3D printers employ a powder binding, additive manufacturing technology to produce parts using various material sets, which consist of particulate materials and proprietary chemical binding agents. voxeljet provides its 3D printers and on-demand parts services to customers serving the automotive, aerospace, engineering, art and architecture, film and entertainment and consumer product end markets. For more information, visit www.voxeljet.com.

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