



# Joint News Release

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## **BASF and Essentium team up to propel 3D printing of functional parts**

### **Partnership seeks to surpass current boundaries of fused filament fabrication technology**

FLORHAM PARK, NJ, and COLLEGE STATION, TX, May 4, 2017 – Plastic 3D printing continues to struggle with moving beyond the prototype phase due to a lack of durability and strength of the printed parts. BASF and Essentium are teaming up to enable the creation of more robust parts for use in mass production leveraging fused filament fabrication (FFF) technology, one of the standard techniques of additive manufacturing. BASF brings to the partnership the most comprehensive portfolio of innovative materials in the chemical industry while Essentium provides its FlashFuse™ electric welding technology, which enhances layer to layer adhesion of 3D printed parts.

Both companies are combining their core strengths to provide a range of polymer solutions that overcome the traditional interlayer weakness of 3D printed parts. Essentium's FlashFuse technology, engineered to the highest levels of safety and compliance, performs in-situ welding which can be applied to multiple open system FFF printer platforms. This electric welding technology helps boost isotropy, an indicator for the homogeneity of a structure, and ramps up vertical strength and mechanical toughness of the printed parts.

The companies are focusing on FFF printing technology because of its ability to use a wide range of thermoplastics, fabricate large, complex parts rapidly and efficiently, and easily combine multi-modality materials in the same print. In addition, FFF is uniquely suited to provide printed parts that are both structural and composed of filaments loaded with functional fillers.

“BASF is committed to advancing 3D printing to the next level across all major additive manufacturing technologies,” said Kara Noack, Head of BASF’s 3D-Printing business in North America. “I am confident that our collaboration with Essentium will enable the creation of 3D printed functional parts and make the technology accessible to a broader range of industrial customers.”

“Essentium Materials’ distinctive FlashFuse technology addresses one of the prevalent challenges for achieving isotropic 3D printed parts,” said Dr. Blake Teipel, Essentium’s President and CTO. “Our partnership with BASF will provide robust and strong 3D printing solutions for extremely demanding applications.”

To learn more, please click on the following link to watch the video: <https://youtu.be/Q7aN1DtM000>

### **About BASF**

BASF Corporation, headquartered in Florham Park, New Jersey, is the North American affiliate of BASF SE, Ludwigshafen, Germany. BASF has more than 17,500 employees in North America, and had sales of \$16.2 billion in 2016. For more information about BASF’s North American operations, visit [www.basf.us](http://www.basf.us).

At BASF, we create chemistry for a sustainable future. We combine economic success with environmental protection and social responsibility. The approximately 114,000 employees in the BASF Group work on contributing to the success of our customers in nearly all sectors and almost every country in the world. Our portfolio is organized into five segments: Chemicals, Performance Products, Functional Materials & Solutions, Agricultural Solutions and Oil & Gas. BASF generated sales of about €58 billion in 2016. BASF shares are traded on the stock exchanges in Frankfurt (BAS), London (BFA) and Zurich (BAS). Further information at [www.basf.com](http://www.basf.com).

### **About Essentium Materials**

Since its inception in 2013, Essentium Materials has conducted cutting edge research for some of the world’s top industrial companies, and has been a recipient of multiple Small Business Innovation Research (SBIR) awards from the National Science Foundation. Currently, Essentium is commercializing FlashFuse™ filament, the world’s first energy-responsive filament for Fused Filament Fabrication (FFF) 3D printing, and developing revolutionary in-situ electric polymer welding capabilities for some of the world’s best 3D printers. This technology provides dramatic improvements in space, weight and power requirements for industries such as automotive, aerospace, defense, wearables, biomedical and other human-interacting components. Read more at [www.EssentiumMaterials.com](http://www.EssentiumMaterials.com).

TriFusion Devices, an Essentium Company, is utilizing FlashFuse™ technology to revolutionize the orthotic and prosthetic industry by offering 100% customized, 3D printed structural and in-clinic prosthetic and orthotic devices. Read more at [www.trifusiondevices.com](http://www.trifusiondevices.com).