

Press Release

Leading Technology from Germany: High-Speed 3D Printers

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Berlin (GTAI) - The additive manufacturing of high-volume synthetic construction materials is very time-consuming. Researchers at the Fraunhofer Institute for Machine Tools and Forming Technology IWU have developed a system and a procedure called SEAM (Screw Extrusion Additive Manufacturing) that is eight times as fast as conventional 3D printing.

This 3D printer works with competitively priced raw material. Its hot nozzle of one millimeter in diameter can handle as many as seven kilograms of synthetic material per hour. That compares with only 50 grams per hour for comparable 3D printing procedures like FDM (Fused Deposition Modeling) or FLM (Fused Filament Modeling). What's also special about SEAM is that it is capable of turning inexpensive, pourable synthetic granulate into durable, fiber-reinforced construction materials several meters in size. As a result, material costs can be reduced 200-fold.

In tests, the system has worked on a wide variety of synthetic materials, from thermoplastic elastomers to high-performance synthetic materials with 40 percent carbon fibers. These materials are in particular demand in industry and cannot be processed using conventional 3D printers. "This new innovation by Fraunhofer will bolster the role of additive manufacturing in mass production, and the result for companies will be major opportunities to profit from German technology and know-how," says Germany Trade & Invest expert Max Milbredt. "The market for 3D printing has seen double-digit growth for years. The most important early users are the aviation, aerospace, industrial and automotive sectors. These sectors are very strong in Germany, which is why German industrial 3D printing also leads the world." SEAM will be unveiled to the public for the first time at the Hannover Messe trade fair from April 1 to April 5, 2019.

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