JuggerBot 3D Awarded $4 Million by AFRL to Develop Large Format Hybrid Additive System

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Youngstown, Ohio (February 17, 2024) -- Industrial 3D Printer OEM JuggerBot 3D announced on February 17, 2024 that it has been awarded $4 million to produce a Large Format Hybrid Material Additive Manufacturing (AM) system.

The project, funded by the Office of the Under Secretary of Defense, Research and Engineering Manufacturing Technology (OSD(R&E)) and awarded by the Air Force Research Laboratory (AFRL) aims to drive technologies that will radically lower the cost of manufacturing, produce lighter-weight vehicles, and that will scale manufacturing to the speed of relevance. The overarching goal of this concentrated effort is to develop a state-of-the-art, hybrid, large-scale AM system that incorporates both two-part resin and pellet-fed material extrusion technologies, capable of processing both advanced thermoset polymers and performance-grade thermoplastic materials.

A member of America Makes, JuggerBot 3D will collaborate with the Institute, which works to accelerate the adoption of AM and advance the nation's global manufacturing competitiveness.

A critical line of effort to achieve the goals of the project is the maturation of composite AM, particularly with high-temperature structural epoxies and other engineered thermoset resin materials in combination with thermoplastic resins. Advances in the ability to print a thermoset composite material will transform the way aircraft structure is designed, fabricated, and sustained for limited-life aircraft.

[The America Makes Building in Youngstown, Ohio. Photo courtesy of JuggerBot 3D]

"The Institute is proud to partner with JuggerBot on this effort. We have observed the benefits and impact of large-scale AM technologies for various aerospace applications within the last two years and are eager to learn how JuggerBot will leverage their advanced hybrid AM technology and accelerate our domestic manufacturing capabilities in an industrially relevant manner."

-Brandon Ribic
Technology Director, America Makes

Additionally, funding has been allocated to leading polytechnic institutes and key players with large-format thermoset extrusion for support in material characterization, predictive modeling, and process parameter validation for both thermoset and thermoplastic materials. Project partners are to be announced at a later date.

Facilitating AM Advancements with Hybrid Materials

Direct Ink Writing (DIW) offers a significant opportunity in AM, as it is used to process advanced thermally cured thermoset materials with properties addressing gaps in the traditional 3D printing process. One key aspect of this project focuses on the development of comprehensive material and process models that will allow a better prediction of material deposition characteristics and resultant critical component properties. JuggerBot 3D will evolve from their commercial platform, the Tradesman Series™, and develop a hybrid additive system that incorporates both their industrial pellet-fed extruder systems that process a wide range of performance thermoplastic materials, and a two-part resin dispensing system that can process thermoset materials at scale.

[Direct Ink Writing (DIW) Process]

"Finding success with this project will generate significant value for the U.S. Air Force and the broader additive manufacturing industry by showcasing the use of thermoset and thermoplastic hybrid extrusion," states JuggerBot 3D President and co-founder Zachary DiVencenzo. "This initiative will expand upon the achievements from previous programs we have taken on in both faculties. We are excited to leverage our expertise once again to meet the industry's critical requirements and look forward to growing our team while collaborating with project partners throughout this program."

Over the next 24 months, the JuggerBot 3D team will advance this technology and participate in several technical session presentations with other key project partners to demonstrate pinpoint equipment capabilities.

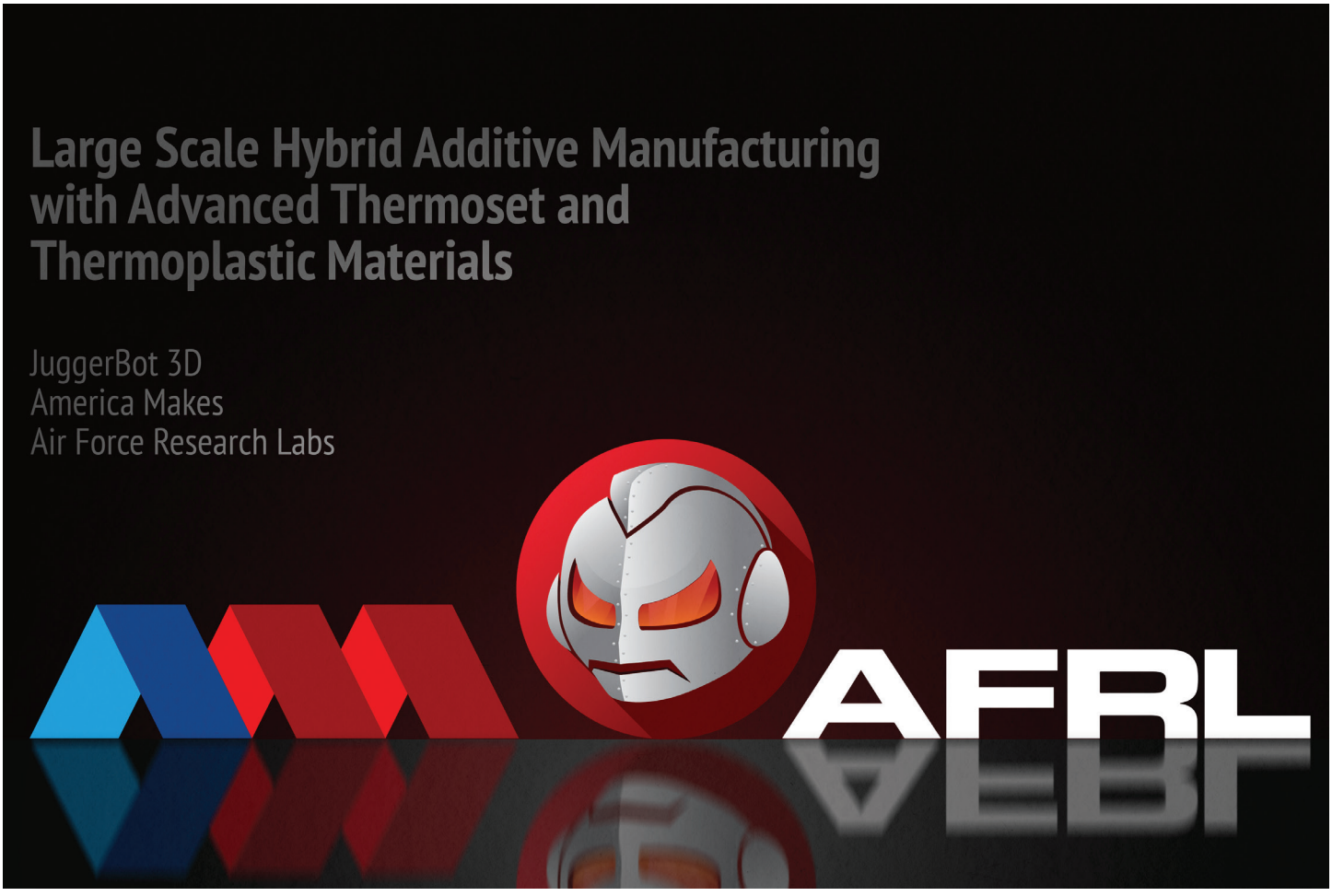
"Designing and developing this novel technology for large format composites will enhance the Aerospace and Defense Industrial Base to reduce time and cost associated with the production of critical parts in a timeframe urgent to meet the needs of their industry. We are proud to bring this work to Youngstown for its direct ties to America Makes and its contribution of additional jobs and economic development to the Northeast Ohio region," notes DiVencenzo.

About JuggerBot 3D

JuggerBot 3D is an additive manufacturing OEM specializing in large format systems capable of processing performance materials. We strive to design and build the finest 3D printing solutions in the world while delivering technology that meets our customers' criteria for performance, reliability, and value. JuggerBot 3D proudly manufactures their systems in Youngstown, Ohio. To learn more about JuggerBot 3D and for project updates, visit www.juggerbot3d.com.

Contact

Benjamin Toomey
Marketing Manager, JuggerBot 3D
benjamin@juggerbot3d.com
(330)-331-2190
juggerbot3d.com



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