



News Release

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3D Systems and Penn State Launch Partnership to Support U.S. Aerospace and Defense Industry Adoption of Direct Metal Printing

- 3DS' Direct Metal Printing technology and on-site technical staff featured at Center for Innovative Materials Processing
- Center is official Additive Manufacturing R&D Center for DARPA, Navy, and America Makes
- Facility helps defense and aerospace industry qualify and adopt 3DS metal technology

ROCK HILL, South Carolina, October 5, 2015 – [3D Systems](#) (NYSE:DDD)

announced today a partnership with Pennsylvania State University to support operations in the Center for Innovative Materials Processing through Direct Digital Deposition (CIMP-3D). This center serves as the official Additive Manufacturing Demonstration Facility for the U.S. Defense Advanced Research Projects Agency (DARPA) and is a major component of a Department of Defense University Affiliated Research Center and strategic facility for the aerospace and defense sector.

This lab includes direct metal printing experts from Penn State and 3DS conducting research together on 3DS' state-of-the-art [ProX™ Direct Metal Printing \(DMP\)](#) technology. The collaboration has three basic goals: to develop cutting-edge, high-resolution DMP technology; to enable government agencies (including DARPA and the Navy) to sponsor projects that qualify DMP for defense companies' adoption; and to provide training in 3DS' DMP technology within the U.S. defense/aerospace workforce.

“The CIMP-3D is a great national institution and we are honored to be working with Penn State to advance American innovation and national security through direct metal printing technology,” said Neal Orringer, 3D Systems’ Vice President of Alliances and Partnerships. “We are eager to welcome aerospace and defense companies at every tier of the supply chain, as well as key defense labs, to join us as we revolutionize manufacturing.”

“We are extremely excited by the prospect of establishing true collaboration with a leading U.S. 3D printing technology provider,” said Dr. Richard Martukanitz, Director of the Center for Innovative Materials Processing through Direct Digital Deposition. “Fostered by the joint technical resources of 3D Systems and CIMP-3D, our goal is to develop and provide enablers for the adoption of additive manufacturing for critical applications to the DoD and U.S. industry.”

3DS and Penn State researchers are working on-site on several Government-funded projects, including:

- [Air Force research](#) to accelerate wider adoption of DMP, beginning with Honeywell Aerospace’s supply chain, focused on producing and rapidly qualifying 3D printed metal aerospace parts;
- [An Air Force effort](#) to establish an architecture for manufacturers such as Northrop Grumman and Honeywell to integrate DMP into manufacturing networks on their 21st century factory floors and embed quality control monitoring equipment; and
- [Navy projects](#) to develop performance and safety processes for qualifying DMP in key production processes.

Today, the center is playing a multifaceted role in advancing 3D printing technology, with an expansive commercial R&D portfolio as well as a range of undergraduate and graduate education programs.

On October 7 – 8 the center will host the [Technology Exchange on Coordination of U.S. Standards Development for Additive Manufacturing](#) to initiate dialogue for development

and coordination of additive manufacturing standards. In advance of the conference, on October 6, 3DS and Penn State will host a Government Users Group, inviting DoD Direct Metal Printing users to a special forum to discuss additive manufacturing in metals and tour the CIMP-3D facility.

Additionally, CIMP-3D regularly hosts industry practicums and technology exchanges, working in close collaboration with numerous government organizations and standards bodies including the [ASTM F42 Subcommittee](#), [American Welding Society C7](#) and [D20 Committees](#), [Metallic Materials Properties Development and Standardization](#), [Department of Defense JDMTP](#), and [ASME Design, Materials, and Manufacturing Segment](#).

Learn more about 3DS' commitment to manufacturing the future today at www.3dsystems.com.

About CIMP-3D at Penn State

The Pennsylvania State University operates the Center for Innovative Materials Processing through Direct Digital Deposition (CIMP-3D), a University-wide activity that encompasses a broad range of disciplines and capabilities in additive manufacturing (AM) technologies. The Center encompasses 35 faculty across four colleges and three research institutes of the University, as well as a state-of-the-art additive manufacturing laboratory for polymeric, metallic, and ceramic materials.

The goal of CIMP-3D is to develop and nurture a world-class resource for AM for critical applications. In addressing this mission, CIMP-3D seeks to:

- advance enabling technologies required to successfully implement AM technology for critical components and structures,
- provide technical assistance to industry through selection, demonstration, and validation of AM technology as an "honest broker", and
- promote the potential of AM technology through training, education and dissemination of information.

Additional information on the Center for Innovative Materials processing through Direct Digital Deposition (CIMP-3D) may be found at www.cimp3d.org.

About 3D Systems

3D Systems provides the most advanced and comprehensive 3D digital design and fabrication solutions available today, including 3D printers, print materials and cloud-sourced custom parts. Its powerful ecosystem transforms entire industries by empowering professionals and consumers everywhere to bring their ideas to life using its vast material selection, including plastics, metals, ceramics and edibles. 3DS' leading personalized medicine capabilities include end-to-end simulation, training and planning, and printing of surgical instruments and devices for personalized surgery and patient specific medical and dental devices. Its democratized 3D digital design, fabrication and inspection products provide seamless interoperability and incorporate the latest immersive computing technologies. 3DS' products and services disrupt traditional methods, deliver improved results and empower its customers to manufacture the future now.

Leadership through Innovation and Technology

- 3DS invented 3D printing with its Stereolithography (SLA) printer and was the first to commercialize it in 1989.
- 3DS invented Selective Laser Sintering (SLS) printing and was the first to commercialize it in 1992.
- 3DS invented and commercialized its patented, ground-breaking force-feedback haptic devices in 1993.
- 3DS invented the ColorJet Printing (CJP) class of 3D printers and was the first to commercialize 3D powder-based systems in 1994.
- 3DS invented MultiJet Printing (MJP) printers and was the first to commercialize it in 1996.
- 3DS pioneered virtual surgical simulation (VSS™) and virtual surgical planning (VSP®) as part of its portfolio of leading 3D healthcare products and services.
- 3DS pioneered scan-based design with the release of the patented Geomagic Design X (XOR) software in 2006.

Today its comprehensive range of 3D printers is the industry's benchmark for production-grade manufacturing in aerospace, automotive, patient specific medical device and a variety of consumer, electronic and fashion accessories.

More information on the company is available at www.3dsystems.com.