ExOne and Oak Ridge National Laboratory Collaborate to Advance 3D Binder Jet Additive Manufacturing

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NORTH HUNTINGDON, Pa.--(BUSINESS WIRE)--May 6, 2019-- The ExOne Company (Nasdaq: XONE) (“ExOne”), a global provider of three-dimensional (“3D”) printing machines, 3D printed and other products, materials and services to industrial customers, announced a collaboration with Oak Ridge National Laboratory (ORNL), the largest U.S. Department of Energy (DOE) open science laboratory, to make further advancements in 3D binder jetting additive manufacturing.

The current collaboration project is initially targeted on the development of cutting-edge technology for new binder systems, focusing on optimizing chemistry and process parameters for ExOne’s sand and metal systems. This includes leveraging ORNL’s instrumentation and advanced data analysis methodologies. The collaboration will leverage DOE’s Manufacturing Demonstration Facility (MDF) at ORNL and its unique efficiencies in instrumentation capabilities. Additionally, the effort will optimize binder development for H13 Tool Steel. ORNL’s initiative targeting the production of 500 tools and dies by 2022 for the molding, stamping and forging industries, is expected to establish binder jetting as the leading low-cost method for the fabrication of advanced tooling.

“We look forward to continuing binder jetting research with ExOne,” said Amy Elliott, ORNL lead researcher on binder jetting. “Over the past several years, we’ve worked with ExOne on four binder jetting systems and we’ve made exceptional progress in enhancing this additive manufacturing technique. Industry collaborations such as this help the U.S. remain competitive in manufacturing.”

“By collaborating with a world-class lab like Oak Ridge National Laboratory, we accelerate ExOne’s binder jetting technology capabilities. We believe these collaborative efforts will effectively and efficiently result in the establishment of new materials, binders and process developments, retaining our significant edge over competitors and other technologies in the industrial manufacturing space,” said Rick Lucas, ExOne’s Chief Technology Officer.

Over the past four years, ORNL and ExOne have developed a mutual relationship benefiting from knowledge sharing and collaboration, built on the progress of ExOne’s binder jetting technology and the expertise and resources at ORNL. This foundation gives the parties confidence in the achievability of the goals of the current collaboration project.

Economic advantages of binder jetting

Binder jetting maintains higher productivity and lower operating costs than other additive manufacturing technologies. ExOne has been the industry leader in non-polymer 3D printing using binder jetting technology. ExOne’s binder jetting development focus includes best-in-class collaborations with various industries, universities, and labs. ExOne’s machines are arguably the most industrialized machines in the market today, as its S-Max ® machines lead the market in additive manufacturing technology successfully supporting the foundry industry for a number of years. Most recently, ExOne has announced a new high-resolution production machine capable of printing metal, ceramic, and other advanced material parts directly. This production machine, the X1 25PRO™, will utilize proven technology demonstrated on ExOne’s Innofeed™ and will be shipping to customers later this year. The X1 25PRO™ can print standard industry powders utilized in MIM (metal injection molding) and other PM (powdered metal) processes. ExOne will be deploying what it believes will be the most advanced jetting, dispensing, and recoating technologies on the market today. It is ExOne’s goal to provide customers with machines that can print the broadest number of material classes at the highest quality and speed.

Visit ExOne’s website to learn more: https://www.exone.com.

About ExOne®

ExOne is a global provider of 3D printing machines and 3D printed and other products, materials and services to industrial customers. ExOne's business primarily consists of manufacturing and selling 3D printing machines and printing products to specification for its customers using its installed base of 3D printing machines. ExOne’s machines serve direct and indirect applications. Direct printing produces a component; indirect printing makes a tool to produce a component. ExOne offers pre-production collaboration and print products for customers through its network of ExOne Adoption Centers (“EACs”). ExOne also supplies the associated materials, including consumables and replacement parts, and other services, including training and technical support that is necessary for purchasers of its 3D printing machines to print products. The Company believes that its ability to print in a variety of industrial materials, as well as its industry-leading volumetric output (as measured by build box size and printing speed) uniquely position ExOne to serve the needs of industrial customers.

About Oak Ridge National Laboratory

The Manufacturing Demonstration Facility at ORNL is supported by the DOE Office of Energy Efficiency and Renewable Energy's Advanced Manufacturing Office (AMO). AMO supports early-stage applied research and development of new materials, information and processes that improve American manufacturing's energy efficiency, as well as platform technologies for manufacturing clean energy products.

ORNL is managed by UT-Battelle for the Department of Energy's Office of Science, the single largest supporter of basic research in the physical sciences in the United States. DOE's Office of Science is working to address some of the most pressing challenges of our time. For more information, please visit https://science.energy.gov.