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NanoSteel Introduces BLDRmetal™ Powders for Binder Jet 3D Printing

Initial commercial application delivers significantly improved performance over incumbent materials

PROVIDENCE, R.I. (Thursday, September 24, 2015)— NanoSteel®, a leader in nano-structured steel materials design, today announced the introduction of the company’s first powders designed for the binder jet 3D printing process and its initial commercial application in additive manufacturing. These materials, BLDRmetal™ J-10 and BLDRmetal™ J-11, enable the 3D printing of components for highly abrasive environments that can benefit from additive manufacturing’s ability to eliminate tooling, create advanced geometries, and build custom parts on demand.

Industrial components made using J-10 feature 2X the elongation and 3X the wear and impact resistance of an equivalently infiltrated 420 stainless steel. NanoSteel demonstrated this capability working with 3DX Industries, an additive manufacturing service provider, to print a security tool used by a global avionics company for removing and replacing aircraft panels. In this commercial application, the tools made with J-10 lasted 5X longer than the previous solution, significantly decreasing the risk of delays in servicing the aircraft. “The NanoSteel solution enabled us to create a tool that delivered the durability and reliability the customer required in a fast turnaround environment,” said Roger Janssen, President and CEO of 3DX. The avionics service team is planning further adoption of this new technology across their global operation.

The BLDRmetal product line of binder jet powders also includes J-11, which is designed for extreme wear low-impact applications. Components made with J-11 provide 10X the wear resistance of an equivalently infiltrated 420 stainless steel. The exceptional performance of both NanoSteel products is based on the combination of complex metallic phases that provide wear resistance and a steel matrix that delivers ductility and toughness.

“These first BLDRmetal powders offer compelling alternatives to existing materials for the binder jet printing process,” said Harald Lemke, General Manager and Vice President of Engineered Powders at NanoSteel. “The company’s entry into the market enhances the applicability of binder jet printing by enabling the additive manufacturing of high-complexity, lower-cost components with exceptional wear performance.” The binder jet process is well suited for cost effectively producing industrial metal parts due to the faster building speed.
These are the first in the company’s portfolio of BLDRmetal powders for hard metal applications that will include new products for each of the current metal 3D-printing processes. BLDRmetal J-10 and BLDRmetal J-11 are intended for industries such as oil & gas, tool & die, and energy in applications such as drilling and pump components, molds, and dies. For further information, visit https://nanosteelco.com/products/additive-manufacturing/binder-jet-wear-resistant-powders contact NanoSteel at 1-877-293-6266 in the U.S. and Canada, internationally at +1 401-270-3549 or via e-mail at info@nanosteelco.com.

About NanoSteel

NanoSteel is an advanced materials company specializing in the design and commercialization of patented steels with exceptional mechanical properties derived from their nano-scale microstructure. The Company’s primary focus is proprietary alloys for use as sheet steel in automotive lightweighting applications and metal powder for 3D printing of industrial parts. Founded as a spinoff of the U.S. Department of Energy’s Idaho National Laboratory in 2002, NanoSteel has developed multiple generations of ferrous materials innovations including metallic coatings, powders, and sheet steel protected by over 400 patents filed/granted worldwide. NanoSteel is a privately held company funded by lead shareholders EnerTech, Fairhaven Capital, and GM Ventures. For more information, visit www.nanosteelco.com or follow us on Twitter @NanoSteelCo.

About Binder Jet

Binder Jetting is a powder bed process, where a binder is used to selectively ‘print’ the desired part shape by adhesively joining the metal particles. After the jetting process, the green part is sintered in a furnace to burn off the binder and then an infiltrant, typically bronze, is melted and drawn into the part to fill in the remaining spaces within the sintered metal powder skeleton to create a dense component. The resulting parts combine properties from both the metal powder and the infiltrant.