



For more information, contact:

Robyn Kennedy

The NanoSteel Company

272 West Exchange Street, Suite 300

Providence, Rhode Island 02903

cell (617) 694-7373

rkennedy@nanosteelco.com

FOR IMMEDIATE RELEASE

NanoSteel Demonstrates Breakthrough in Additive-Manufactured Wear Materials

High-hardness ferrous metal matrix products now achievable through a one-step 3D-printing process

PROVIDENCE, R.I. (Wednesday, September 24th, 2014) - The NanoSteel® Company, a leader in nanostructured steel materials design, today announced the successful expansion of the company's engineered powders business into additive manufacturing. By leveraging its uniform metal matrix microstructures in the laser-sintering process, the company was able to build a crack-free, fully dense bulk sample. NanoSteel's initial focus in additive manufacturing supports the market need for on-demand, on-site wear parts while addressing the current challenges in 3D printing of high-hardness parts.

NanoSteel's breakthrough overcomes one of the major hurdles to achieving a high-hardness metallic part through additive manufacturing—the tendency to develop cracks during part builds. The company worked with a global process development partner to optimize processing of a proprietary NanoSteel alloy with a high volume fraction of borocarbide phases. This successfully produced a fully dense (99.9%) crack-free part with hardness values over 1000 HV, wear resistance comparable to conventionally manufactured M2 tool steels, and a uniform microstructure. Importantly, these properties were achieved without the need for post-processing such as hot isostatic pressing (HIP) or further heat treatment, reducing production cost and lead times.

“Currently, the material options to produce highly wear-resistant parts through additive manufacturing are limited” said Harald Lemke, NanoSteel's General Manager of Engineered Powders. “By extending the reach of steel into markets currently served by WC-Co, ceramics, and other non-ferrous metal matrix metal composites, NanoSteel has the potential to generate cost-efficient wear parts to serve the tooling, mining, energy, and transportation industries in applications such as pumps, bearings, and cutting tools.”

The company is currently extending this breakthrough into more complex geometries and broadening its property sets to fully validate the market potential for 3D-printed steel components. For more information on NanoSteel engineered powders for additive manufacturing, visit <http://nanosteelco.com/products/engineered-powders/additive-manufacturing-powders>.



For more information, contact:

Robyn Kennedy

The NanoSteel Company

272 West Exchange Street, Suite 300

Providence, Rhode Island 02903

cell (617) 694-7373

rkennedy@nanosteelco.com

FOR IMMEDIATE RELEASE

About NanoSteel

NanoSteel is the world leader in proprietary nanostructured steel material designs. Over its twelve-year history, NanoSteel has created progressive generations of iron-based alloys from surface coatings to foils to powder metals and sheet steel. For the oil & gas, mining and power industries, NanoSteel has successfully introduced commercial applications of metallic coatings to prolong service lifetime in the most extreme industrial environments. In engineered powders, the company is developing applications in shotpeening, additive manufacturing, and HIP. For the automotive industry, NanoSteel has achieved a significant breakthrough in the development of nanostructured sheet steel with exceptional strength and ductility. NanoSteel is a privately held company funded by lead shareholders EnerTech and Fairhaven Capital. For more information, visit www.nanosteelco.com or follow us on Twitter @NanoSteelCo.