

VOXELJET UNVEILS NEW 3D PRINTING TECHNOLOGY: High Speed Sintering process for the production of end-use parts

September 2017 – voxeljet, the leading manufacturer of 3D printing systems for industrial applications, specialized on Powder-Binder-Jetting of plastic and sand, has announced the release of its High Speed Sintering (HSS) process for November 2017. The process was initially developed by Prof. Neil Hopkinson and is licensed to voxeljet from Evonik and Loughborough University. Combined with voxeljet's binder-jetting expertise, the high speed sintering process has been further developed into a highly productive and precise technology.

USABLE FOR ALL KINDS OF PLASTIC APPLICATIONS

In contrast to voxeljet's present solutions, which focus on the foundry industry, the new HSS process enables printing of parts with properties and quality similar to Selective Laser Sintering, Multi Jet Fusion or injection molding. Versatile and fully functional prototypes such as brackets, shoe soles, buckles, and other functional parts for end use can be produced. Additional application examples for HSS parts include interior design parts of cars and designs of product packaging.

"The new high speed sintering process combined with our entry platform, the VX200, offers a unique amount of flexibility regarding adaptable process and machine parameters which can be tailored by the customer depending on the materials they select. voxeljet supplies a PA12 powder to customers, however, is also granting open sourcing of materials and offers a testing and approval service for new materials. ProPrint, our new and modular software, can be offered in a full access development-kit, meaning the user can program the system and add custom macros. It also features a databank for process data mining, which the customer can adapt to his needs. Furthermore, the availability and application of a wide range of 3D printable thermoplastic materials, including elastomers, makes this process suitable for material suppliers, universities and other institutions", says Dr. Ingo Ederer, CEO, voxeljet.

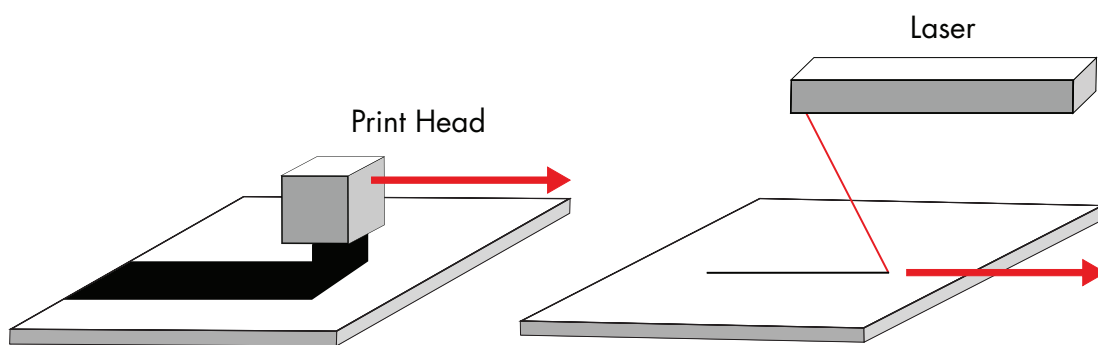


Figure 1 - Printheads with large printing width vs. laser beam used in SLS (Selective Laser Sintering).

Christian Traeger, Director Sales & Marketing, adds that “voxeljet’s industrial and high durability printers enable high-quality print resolutions, layer times that are consistent no matter what is being printed and advanced thermal management thus being able to print a large variety of materials. Due to large printing widths of our printheads, we see a high potential for increased printing rates on larger platforms in the future, making this process more productive compared to other AM processes.

NEW 3D PRINTING PROCESS

The basis for HSS is the same as voxeljet’s core technology, binder jetting. This new process involves depositing a fine layer of polymeric powder, e.g. PA12 or TPU, after which an inkjet print head selectively deposits an infrared absorbing fluid directly onto the powder surface where sintering is desired. No further liquids are used for the printing process, which keeps consumable costs to a minimum. The build area is then illuminated with infrared light, causing the printed fluid to absorb this energy and then melt and sinter (fuse) the underlying powder. This process is repeated layer by layer until the build is complete to form functional plastic parts.

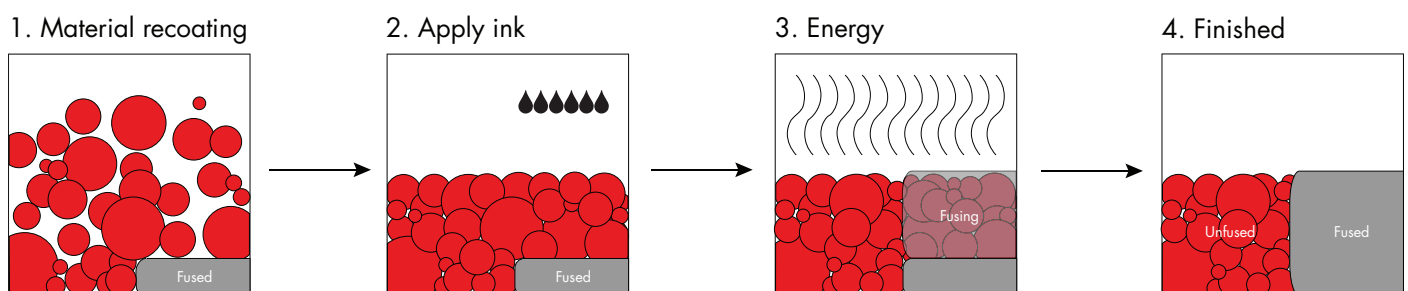


Figure 2 - Description of the High Speed Sintering (HSS) process.

The High-Speed Sintering process will be officially released in November at the formnext fair in Frankfurt, Germany, taking place in November 14th-18th 2017. More information with additional details about the new HSS process and available systems will follow.

HSS SAMPLE PARTS



Image 1 - Multiple small intersecting joints that are printed together to form a fabric like texture.

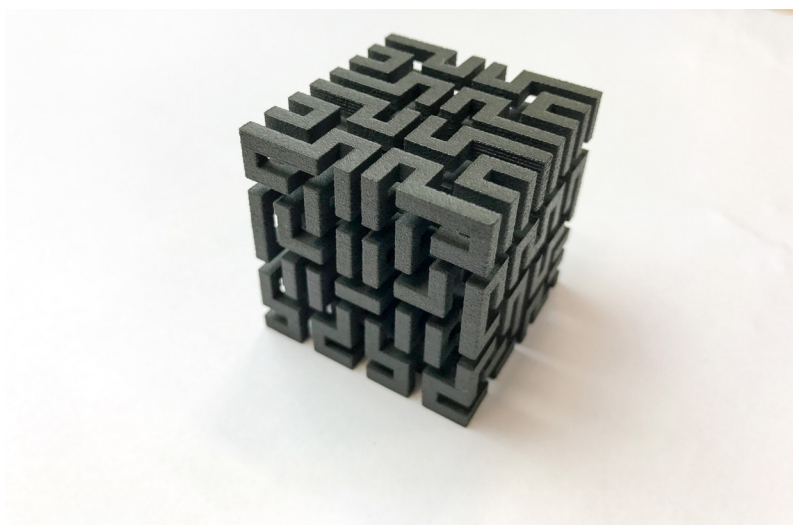


Image 2 - A flexible cube that can be extended.



Image 3 - A flexible cube that can be extended.