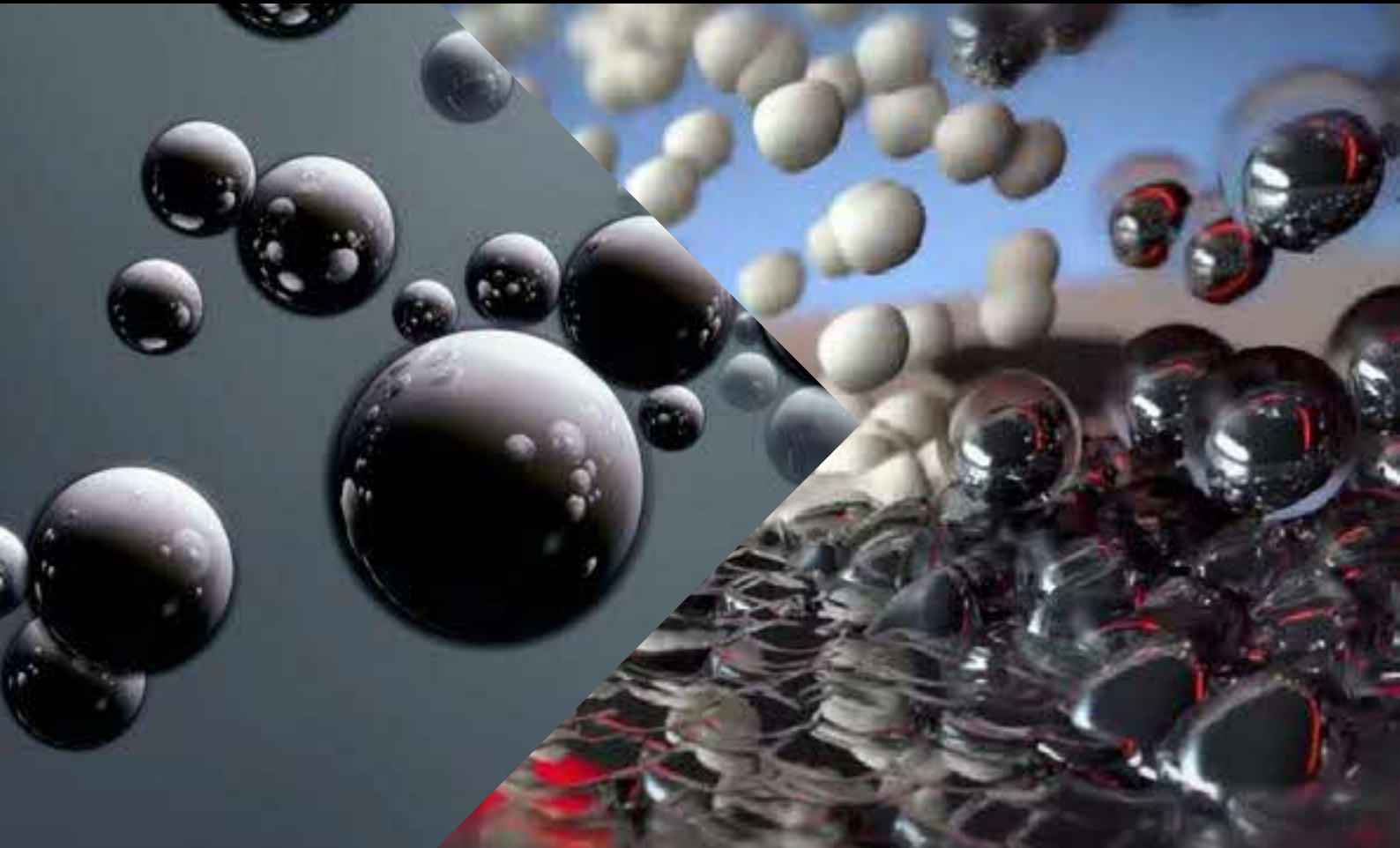


Redefining **X** Ceramic & Metal AM



XJet & NanoParticle Jetting™ Technology

XJET

Technology

Proprietary NanoParticle Jetting™ Technology

XJet's NanoParticle Jetting™ (NPJ) technology is redefining the ceramic and metal additive manufacturing (AM) arenas. The patented powderless material-jetting technology enables the production of ceramic or metal AM parts of the highest quality – featuring unprecedented levels of detailing, finish and accuracy – without compromising throughput or build time. With unrestricted support material planning, fabrication and removal, designers can focus on a part's functionality rather than its manufacturability. NPJ delivers on the AM promise of “zero-cost” geometrical complexity.

Three Layers of NPJ Innovation

NPJ uniquely features stochastic nanoparticles, ultrathin layers and simultaneous jetting of build and support materials. Leveraging these three attributes, NPJ empowers the creation of “complexity-free” high-quality parts with superb properties and virtually unlimited geometries in an operationally efficient manner.

Part Quality

NPJ's stochastic nanoparticles enable unsurpassed part quality:

99.9% density

Isotropic uniformity

Extremely low shrinkage

Geometrical Freedom

NPJ's ultrathin layers of nanoparticles empower virtually unlimited design flexibility:

Complex geometries

Fine details

Nearest net shapes

Smooth surfaces

Operational Efficiency

NPJ's simultaneous jetting of build and support materials in liquid suspensions delivers unrivaled operational efficiency:

Automated support planning

Hands-free support removal

Simple and safe operation

Key Enabler: Liquid Dispersion

The key to NPJ starts with its unique liquid dispersion methodology. A liquid suspension containing solid nanoparticles of a selected build material is jetted onto the build tray to additively manufacture detailed parts. These liquid suspensions serve as the base materials for XJet's AM process, unlike most existing ceramic and metal AM technologies that utilize hazardous and hard-to-handle powders. The use of liquid dispersion makes it possible to simultaneously jet a special soluble support material. XJet's liquid suspensions are delivered and installed in hassle-free sealed cartridges.

Manufacturing Applications



Short-run
production batches



On-demand
production



Functional
prototyping

Key Benefits



Unsurpassed
part quality



Unprecedented
design freedom



Unrivaled
operational efficiency

How It Works

Cartridge Loading



Process: Solid nanoparticles in a liquid suspension are delivered within convenient sealed cartridges.

Advantage: Build and support material cartridges are loaded safely and easily by hand, eliminating the need for hard-to-handle hazardous powders.

Material Jetting



Process: Printheads with thousands of inkjet nozzles simultaneously jet millions of ultrafine drops of both build and support materials onto the system build tray in ultrathin layers.

Advantage: Liquid dispersion of solid nanoparticles in ultrathin layers enables the production of parts with virtually unlimited geometrical complexity and unrivaled quality in a highly efficient manner.

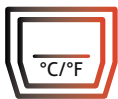
Support Removal



Process: After the part is manufactured, the support structure, made from special soluble material, easily dissolves from the finished part.

Advantage: Support materials are removed hands-free without harming the part, greatly reducing the need for time-consuming and delicate post-processing.

Final Sintering



Process: Produced parts undergo a simple and relatively short overnight sintering process.

Advantage: Easy and clean process enables smooth integration into existing operations, and short and simple post-processing.



Company

The XJet Edge

Renowned team

XJet has assembled a world-class team of skilled industry veterans, many of whom helped develop trailblazing inkjet and AM technologies at market pioneers such as Objet (Stratasys), Indigo, Scodix and HP Scitex.

Groundbreaking technology

XJet's proprietary NPJ technology empowers the manufacturing of detailed high-quality parts with virtually unlimited geometries – all produced in a safe, convenient and productive manner.

Partner-driven approach

With a deep understanding of industry concerns and requirements, XJet partners with its customers to define, examine and execute new solutions to difficult challenges.

Forward-thinking roadmap

Leveraging its robust powderless technology, XJet is introducing a growing number of ceramic and metal build materials to anticipate evolving industry needs.

About XJet

XJet is a provider of groundbreaking ceramic and metal additive manufacturing solutions to customers spanning three continents. Founded in 2005, XJet has developed and introduced its revolutionary NanoParticle Jetting™ (NPJ) technology and groundbreaking XJet Carmel line of AM systems. Building upon a decade of research, NPJ minimizes the cost of complexity while delivering unrivaled physical, geometrical, and operational advantages. XJet's world-class team of skilled industry veterans and dynamic R&D specialists holds over 80 registered and pending patents. Leveraging its proprietary technology and proven expertise, XJet is redefining the ceramic and metal AM industries.

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