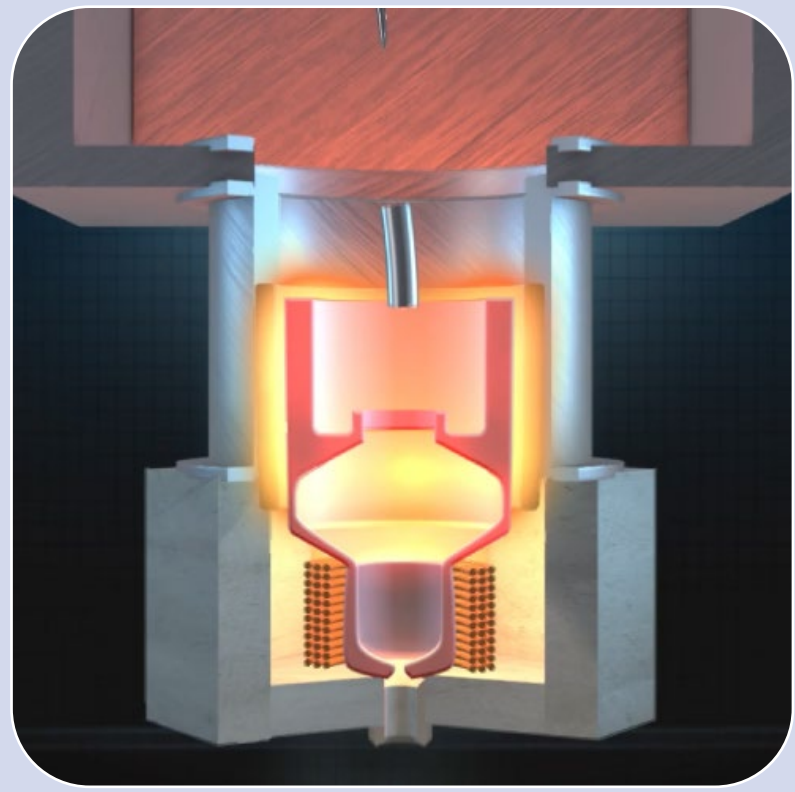
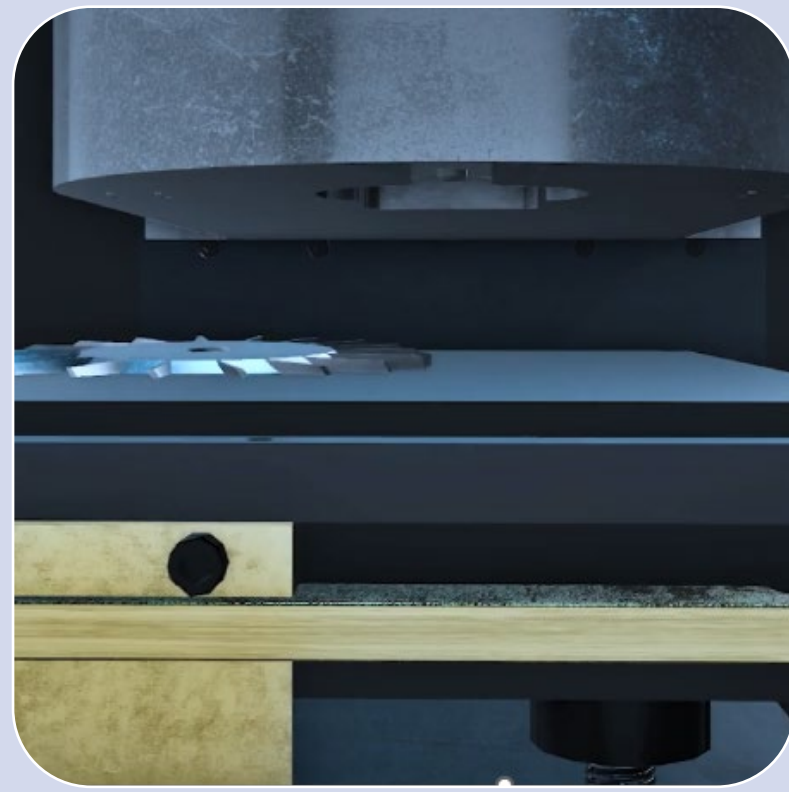


Liquid Droplet Printing

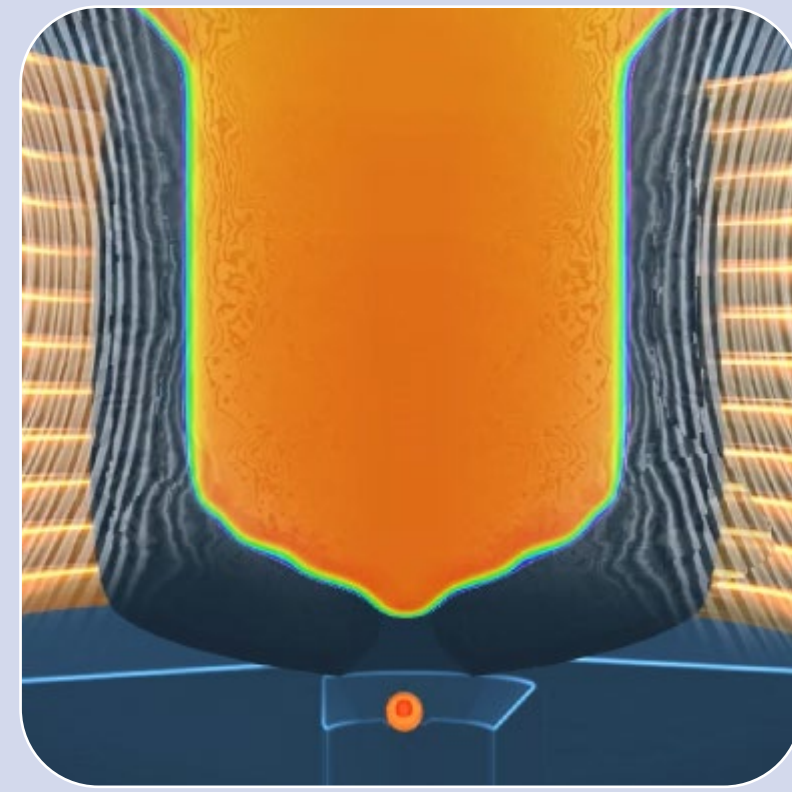
Additec ElemX Liquid Metal Jetting Printer funded via Marshall Center Investment



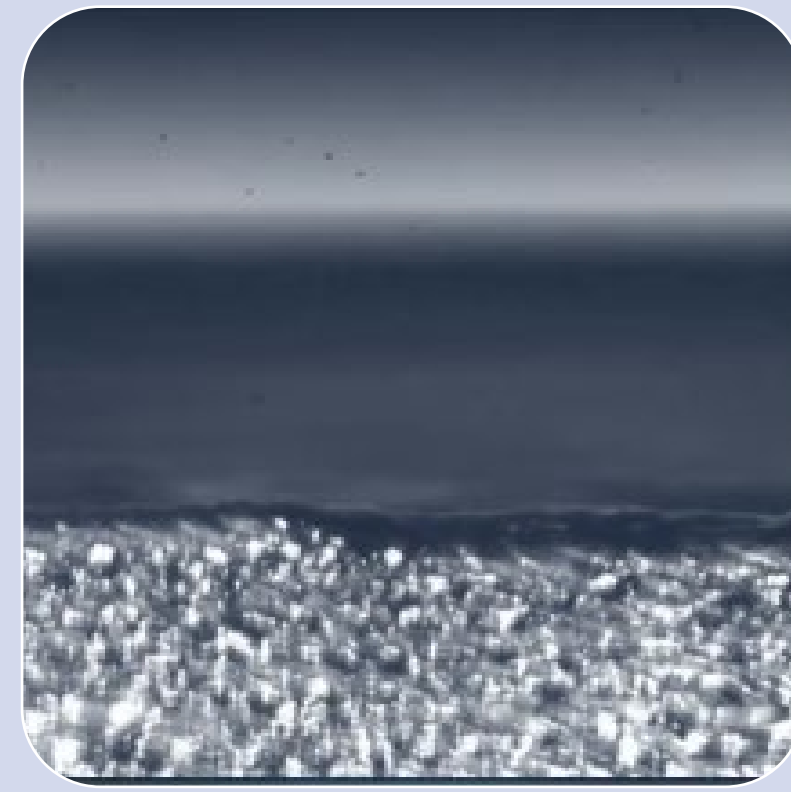
Wire feedstock fed into ceramic crucible and melted



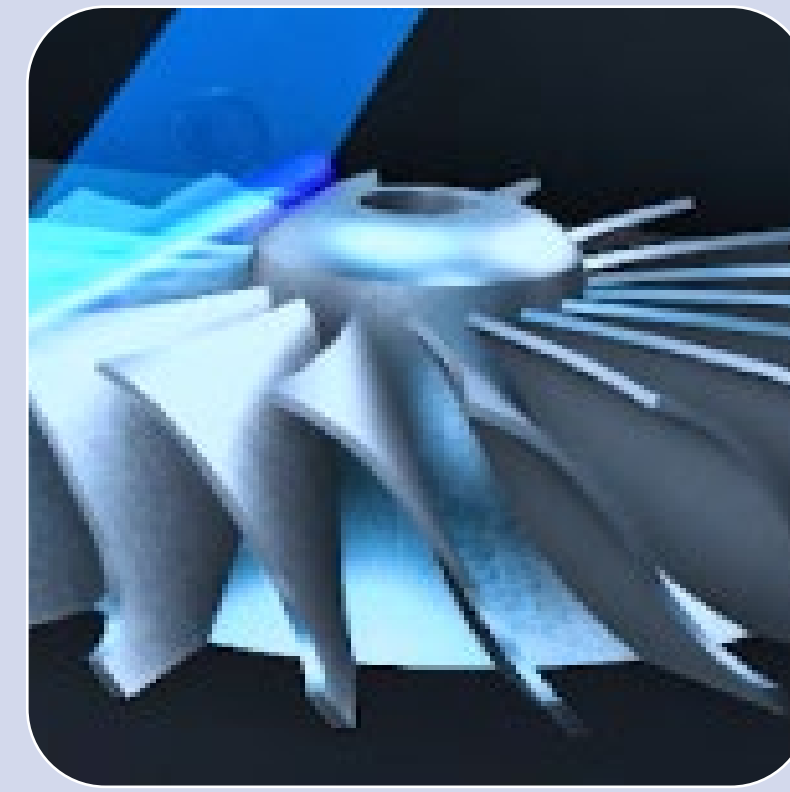
Build plate rapidly moved along toolpath for the layer



Metal droplets ejected by pulsed Lorentz force using external coil



Liquid metal coalesces one drop at a time on heated build plate



Layer is scanned once completed and process progresses to next layer



Simple water quench to remove from build plate

Machine Specifics

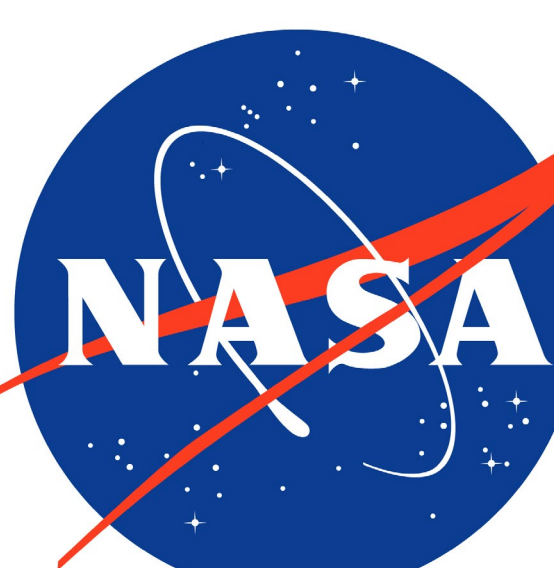
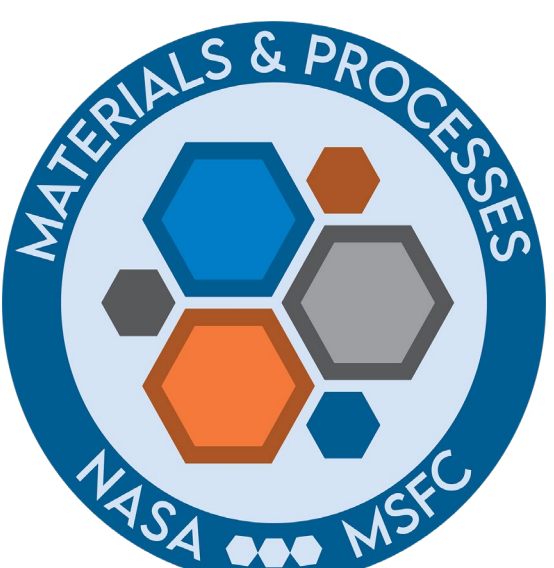
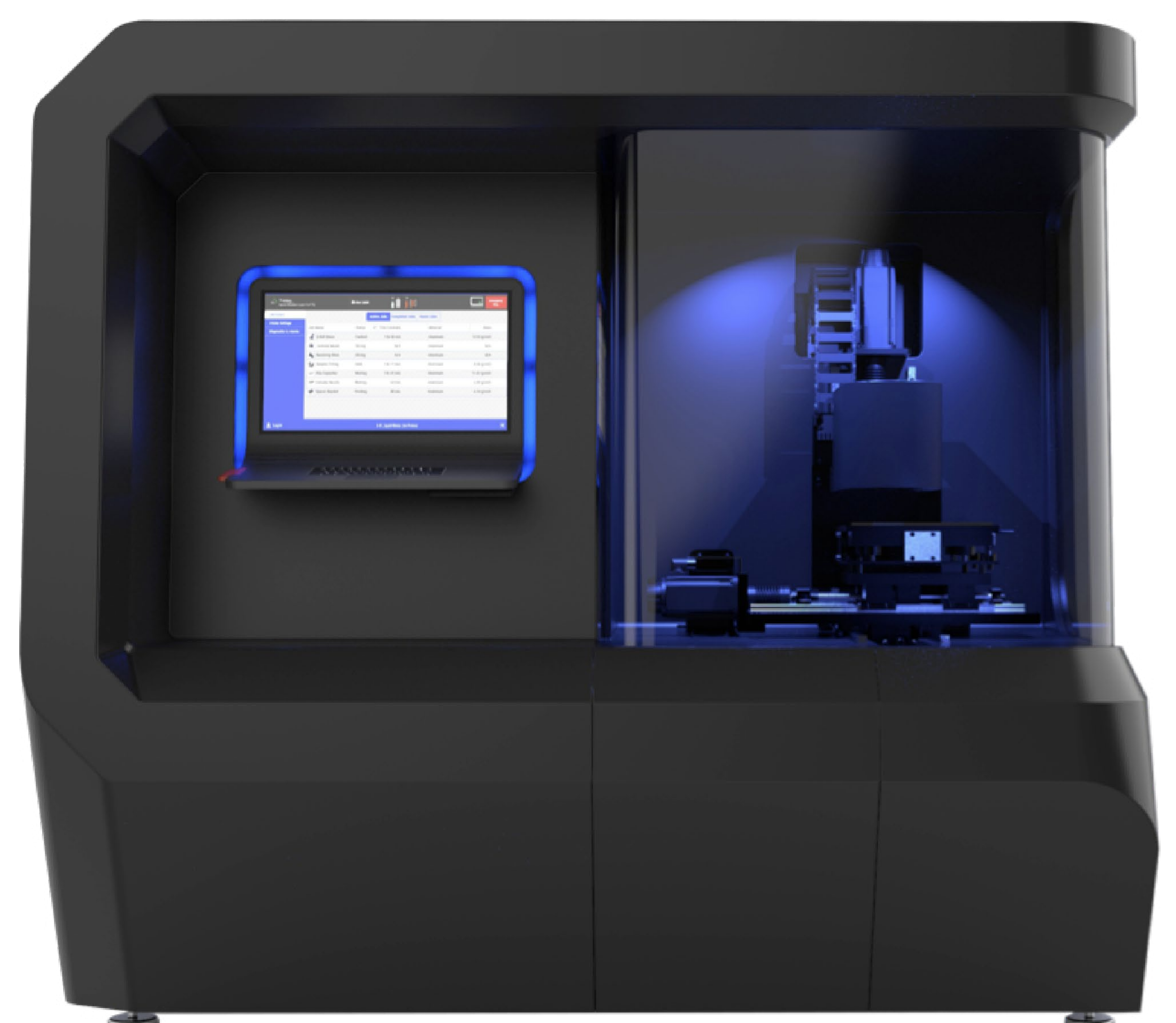
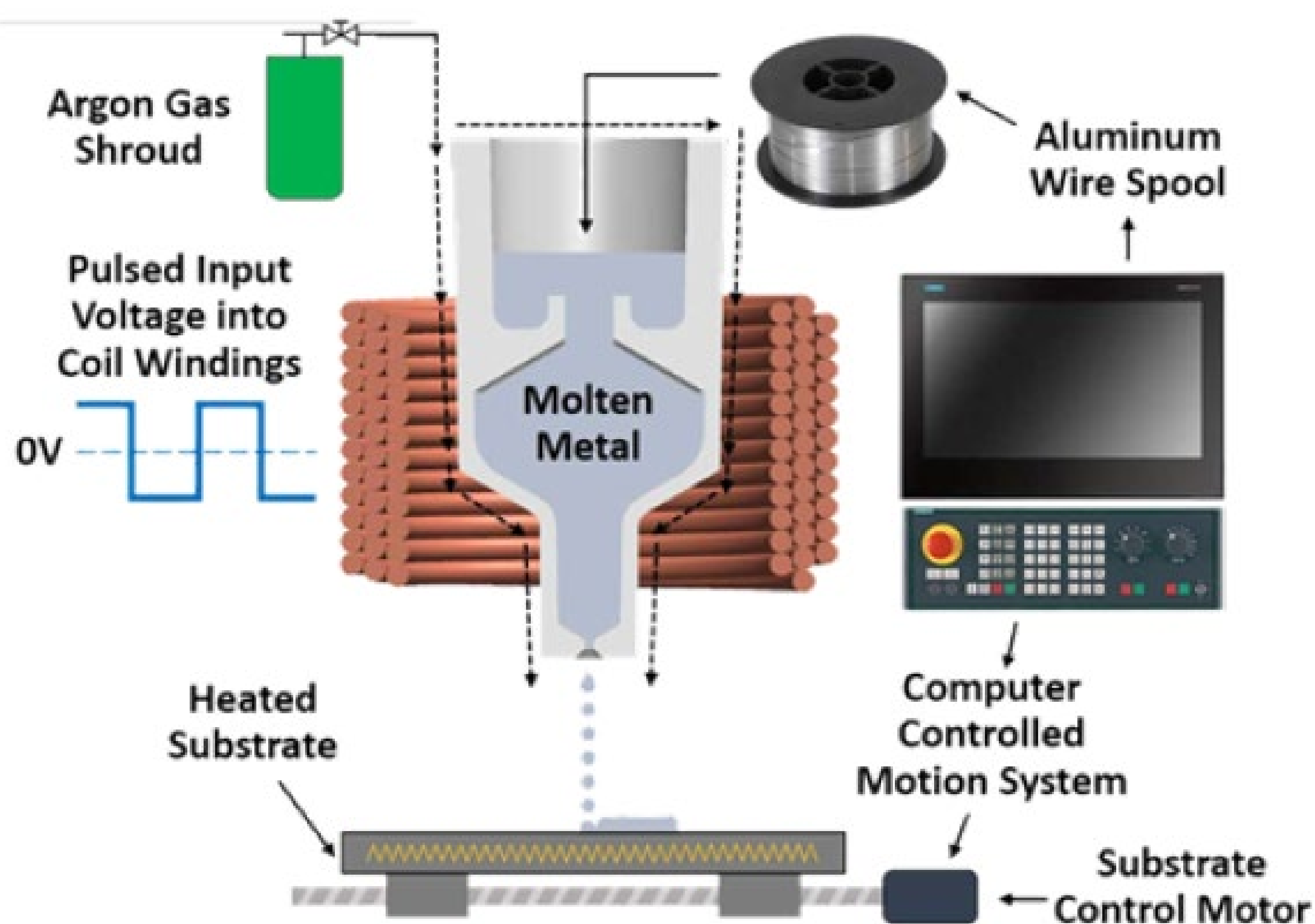
Build Volume: 12"x12"x4.7"
Minimum Layer Height: 0.24mm
Wire Feedstock Diameter: 1.6mm
Cover gas: Argon in printhead region
Surface finish: comparable to sand castings

Material & Process Characterization

Establish Process Parameters
Study Process Repeatability
Baseline Material Properties
Baseline Microstructure
Heat Treatments

Study Influence Factors & Novel Environments

Additional metal alloys beyond aluminums
Recycled feedstock materials
Adaptations required for zero/low gravity environments



XY Tensile Specimen— Al 6061

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