



Enabling Mission
Critical Capability

addmangroup.com

Industry Leading Expertise

At ADDMAN, your vision comes to life through cutting-edge advancements in advanced materials and metal additive manufacturing. When Dr. Youping Gao, a renowned expert in the rocket industry, founded Castheon in 2016, he set out with a clear mission: to push the boundaries of what's possible by unlocking the potential of refractory metals—especially niobium.

Today, Castheon's pioneering spirit lives on as part of ADDMAN, where Dr. Gao's legacy continues to shape our approach and fuel innovation across the organization. In a rapidly evolving landscape of defense and exploration technologies, the need to re-imagine critical components—combat aircraft, hypersonic vehicles, missile systems, and high-temperature parts—has never been more urgent.

ADDMAN embraces this challenge and stands at the forefront of progress. By advancing the game-changing capabilities of metal additive manufacturing, we are enabling faster, stronger, and more agile production of mission-critical components, driving a new era of performance for defense and aerospace applications.



Metal Additive Manufacturing & Engineering Services

Leveraging cutting-edge metal additive technology, ADDMAN delivers design freedom, speed, and cost-effective solutions for aerospace, defense, and medical applications. Our engineering and design teams utilize advanced LPBF methods to craft precise, fully customized components—building on Castheon's original breakthroughs and expanding them with ADDMAN's full-scale production capabilities.



Materials

Our innovative 3D-printing methods enable precise control over properties and microstructure, supporting advanced hypersonic and defense applications. The legacy of Castheon's refractory metal expertise continues to be a driving force behind ADDMAN's material leadership.



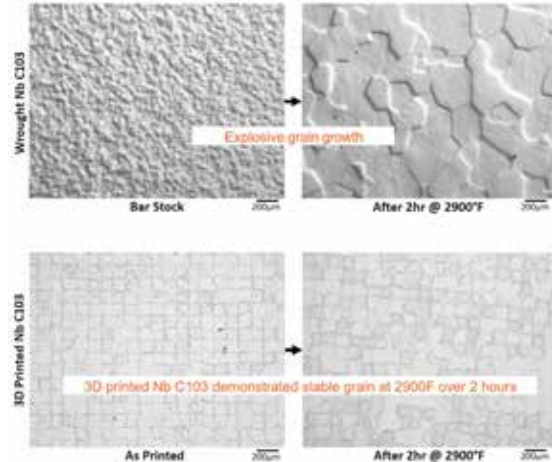
Metallurgy & Parameter Development

Known for rapid, robust AM process development, the Castheon team—now fully integrated into ADDMAN—continues to optimize microstructures, build capability, and productivity across a growing range of materials and platforms.

Material Characteristics

Better Than Wrought

Our 3D-printed Niobium C-103—developed through Castheon's foundational research and now strengthened within ADDMAN's broader engineering ecosystem—outperforms traditional materials through precise control of rapid solidification in LPBF (Laser Powder Bed Fusion). This ensures exceptional metal integrity, stable oxide and carbide structures, and enhanced grain boundary performance even under extreme conditions. Proven through third-party testing and spaceflight missions, ADDMAN's Niobium C-103 continues to stand superior to wrought alternatives.



Metal Powders

The Foundation of Precision and Strength

- Aluminum
- Carbon Composites
- Cobalt Chrome
- Copper
- Magnesium
- Nickel Alloys
- Niobium Alloys
- Steel Alloys
- Titanium
- Rhenium
- Tantalum
- Tungsten

**Complete material list available upon request.*

Post-Processing

Transforming Your Part's Look and Feel

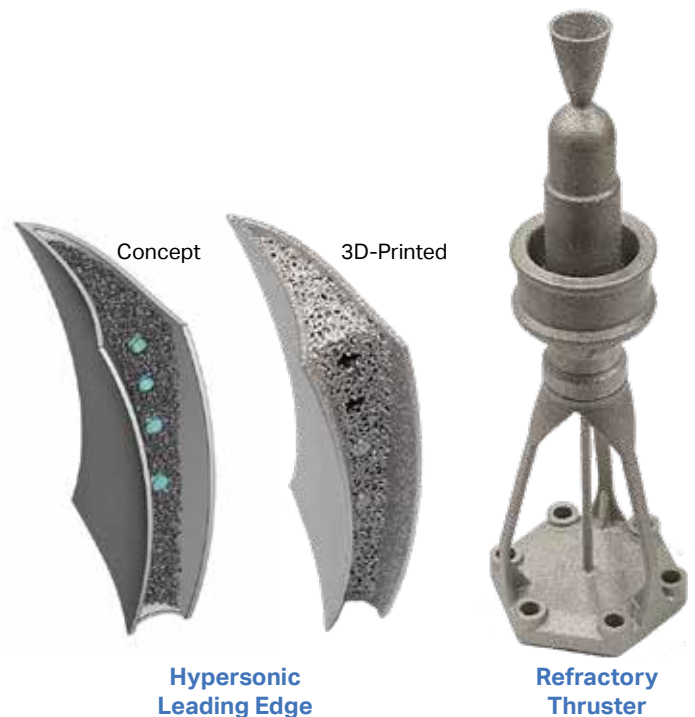
- Annealing
- Anodizing
- Bead Blasting
- Black Oxide
- Chemfilm
- Dry Film
- Heat Treating
- Lubricants
- Masking
- Metal Plating
- Non-Destructive Testing
- Passivation
- Penetrant Inspection
- Pickle and Oiling
- Polishing | Electropolishing
- Powder Coatings
- Primer / Paint Application
- Shot Peening

The Technology Landscape

Additive Refractory Metals For Hypersonics

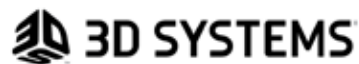
We provide advanced refractory alloys and unique geometries for hypersonic and space flight applications. Our 3D-printed Nb C103 refractory thrusters have proven effective in space, featuring a high mach leading edge with integrated cooling. Our offerings include a variable density mesh with embedded internal structures, as well as high-quality, affordable thrusters, injectors, and hot gas manifolds.

- Significant cost savings
- Ability to ramp up production quickly
- Extremely high temperature tolerant
- Non-Ablative
- Durable and strong throughout entire temperature range
- Impact and damage resistant



Explore Our Range of Industry-Leading Machines

Committed to expanding production capabilities using top OEM technology, we ensure the industry's largest formats are readily available for our clients.



Industry Expertise

We provide cost-effective, high-performance, and sustainable solutions to innovative industries from prototype through production. Whether it is mission-critical operations or life-saving procedures, we offer end-to-end solutions.



**Commercial
Space**



**Aerospace
& Defense**



Industrial



Energy



Medical



Automotive

To ensure top-quality, compliant parts, we employ a nationwide certified Quality Management System (QMS).

CERTIFICATIONS

- ITAR Compliant
- ISO 9001 / AS9100
- ISO 13485:2016
- ISO 14001:2004
- ISO 50001
- NIST 800-171 Compliance
- Exostar 3.55

One-Stop Manufacturing Solution: **Delivering Quality, Precision, and Efficiency**

ADDMAN offers comprehensive manufacturing solutions with unmatched quality, precision, and efficiency.

- Experience the formidable strength of our **metal additive manufacturing**, which excels in producing precise components while leveraging our profound metallurgical expertise.
- Unleash creativity with our **polymer 3D printing**, crafting robust parts with stunning designs.
- Our **injection molding** processes deliver cost-effective, high-quality production.
- Complementing these capabilities, our robust **CNC and post-processing** expertise enhance the overall quality and precision of our offerings.

With trust in our unwavering commitment, technological prowess, and extensive capabilities, we are poised to bring your innovative ideas to life.

Contact us for more information and to get a quote for your production needs.

www.addmangroup.com

