



Metal AM with Superalloys & Refractory metals

Questions?

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Ver.1.23

auratech ✱

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Company Identity

Metal AM With
Special Metals & Refractory Metals

Yes! We Love

- Hard
- Extreme
- High Performance

Materials



Business Area

Defense



Power generation



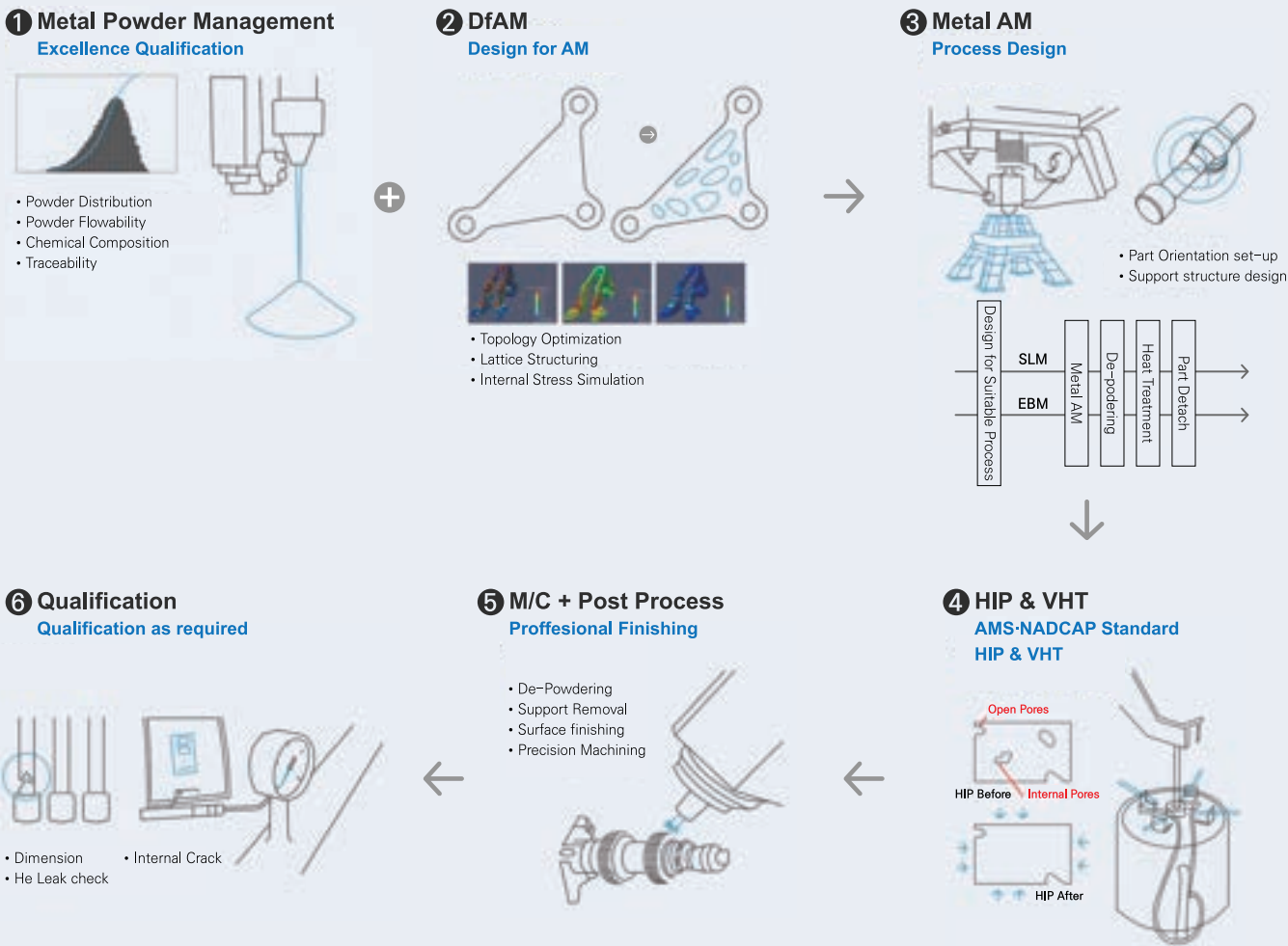
Aerospace



Medical



Process Overview



E-PBF / L-PBF Process comparison



※ Source of GE Additive

Metal AM Machine Capabilities

Materials



E-PBF



E-PBF(Electron Beam Powder Bed Fusion)

- Bulkier and denser part
- Very high heat tolerances
- Unique materials including TiAl

L-PBF



L-PBF(Laser Powder Bed Fusion)

- Internal passages, thin finer features
- Covers a range of operation conditions
- Broad range of materials

E-PBF

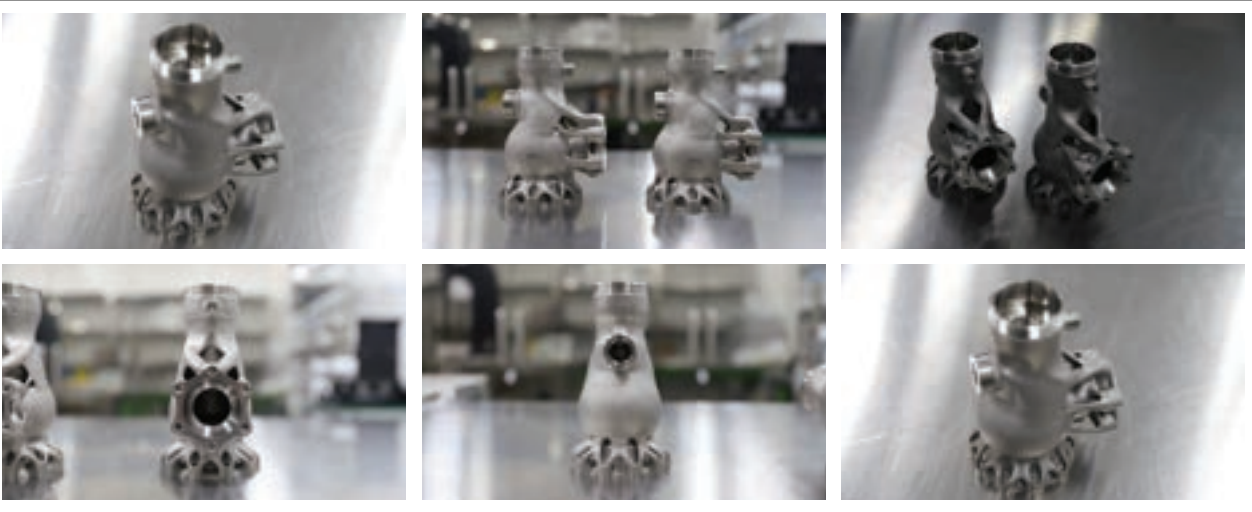
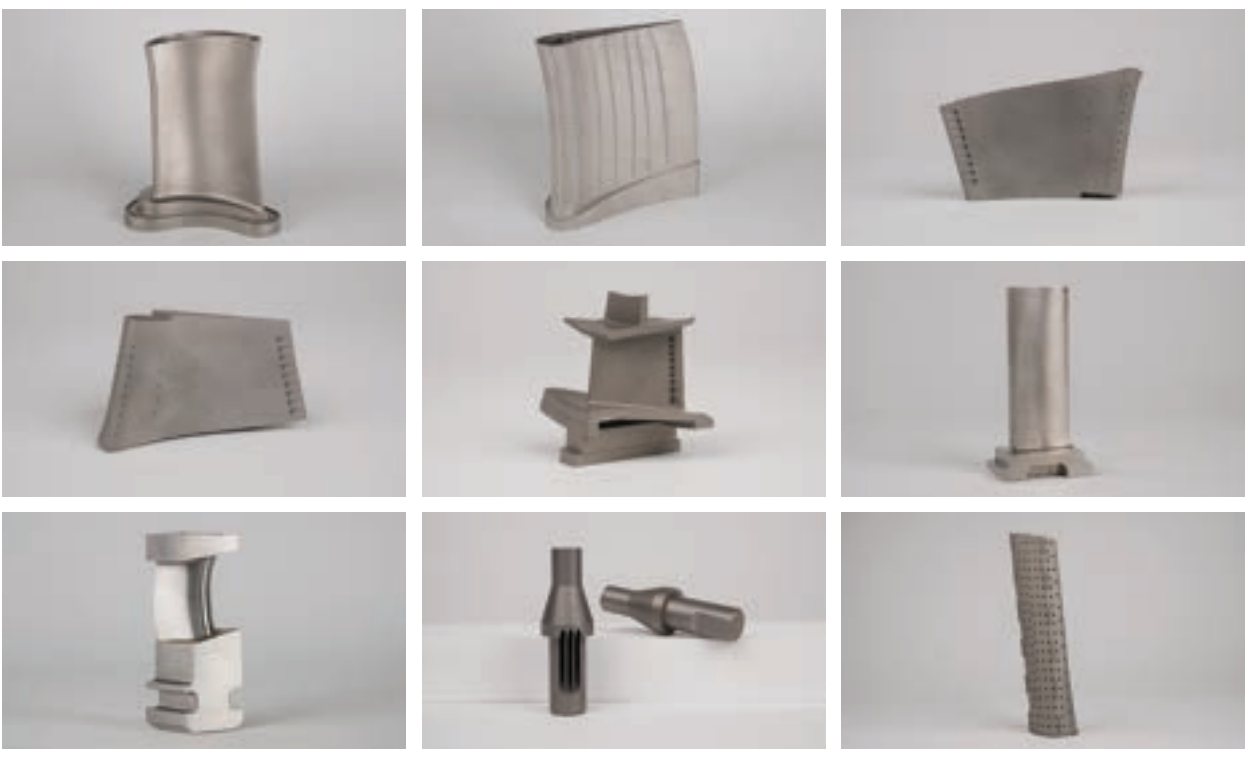
- Ti6Al4V Grade 5, P-Material
- Ti6Al4V Grade 23, P-Material
- CoCr, D-Material
- Ti Grade 2, D-Material
- Pure Copper

L-PBF

- | | |
|--------------------------|--------------------|
| • Stainless Steel 316L | • Nickel 625 |
| • Stainless Steel 17-4PH | • Nichel 718 |
| • Maraging Steel M300 | • Ti6Al4V Grade 23 |
| • Aluminum AISi7Mg | • Titanium Ti6242 |
| • Aluminum AISi10Mg | • Titanium cp-Ti |
| • Aluminum A205 | • Ti6Al4V ELI |
| • CoCrW | • Cobalt CoCrMo |

Other materials on demand!

Our Masterpieces



Certifications



ISO 9001 Certificate of Venture Enterprise Material parts equipment specialized company confirmation R&D Center Certificate Patent certificate Technology transfer agreement (KARI)

List of major contract

Company	Contract	Contract Date
Y2023		
KARI	production of 2-stage small launch vehicle top engine component	2023.06
KARI	production of rotating component for small launch vehicle top turbo pump	2023.05
KARI	production service for friction stir welding tool for common bulkhead propellant tank fabrication	2023.03
Y2022		
KARI	Metal 3D printing production and post-processing of gas generator turbine nozzle vane (2nd stage)	2022.09
KARI	Purchase of aluminum-scandium wire material for layered production of large aerospace components	2022.08
KARI	Prototype metal 3D printing production of high-temperature test turbine blade (linear cascade) 2nd stage	2022.06
KARI	Purchase of Ti-6Al-4V plate material for layered production of large aerospace components	2022.06
Other 8 projects		
Y2021		
KARI	High-temperature test turbine blade prototype metal 3D printing production (linear cascade)	2021.11
KNFC	3D printing-grade Zircaloy-4 powder (recycled metal)	2021.10
KARI	High-temperature test cooling turbine prototype metal 3D printing production (with improved design)	2021.09
KNFC	Surface Roughness Improvement Service for 3D Printed Manufacturing Grid Tender	2021.07
KARI	Fabrication of Welded Specimen for Small Launch Vehicle Engine Nozzle Expansion Using Niobium (Nb)	2021.04
Doosan Enerbility	Development of H+ Grade GT Model - Fabrication of 3D Printed Test Specimen for Turbine Cooling	2021.03
Other 4 projects		
Y2020		
KARI	Production of laminated manufacturing wheels for rover prototype testing	2020.11
KARI	Production of stacked components for miniaturized propulsion tank for small launch vehicle	2020.10
KARI	Fabrication of metal 3D-printed cooling turbine for high-temperature testing	2020.09
KARI	Laminated production of compliant pointing mechanism	2020.09
KARI	Post-processing of impeller for micro gas turbine compressor	2020.07
KARI	Development of flow control valve housing (AM_GOCV7_DM#1) using laminated manufacturing	2020.05
KARI	Manufacturing of low-carbon steel turbine mold using 3D printing	2020.03
Other 2 projects		
Y2019		
KARI	Fabrication of Casing for Metal 3D Printed Fuel Pump Inlet	2019.12
KARI	Fabrication of Valve Housing Using Metal Additive Manufacturing	2019.06
KARI	Fabrication of Mixer, Cylinder, and Nozzle Using Metal Additive Manufacturing	2019.05
Y2018		
KARI	Fabrication of 3D Printed Prototype for Cooling Turbine Nozzle	2018.10
KARI	Fabrication of 3D Printed Prototype for Small Gas Turbine Engine Parts and Material Evaluation	2018.07

Loyal customers

