

oerlikon

Additive Manufacturing Solutions

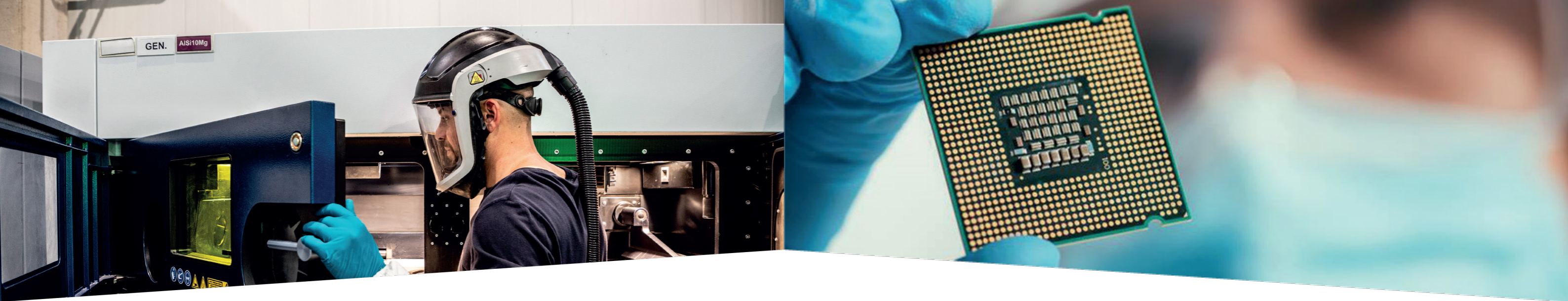
for Semiconductor Capital Equipment

breaking

performance

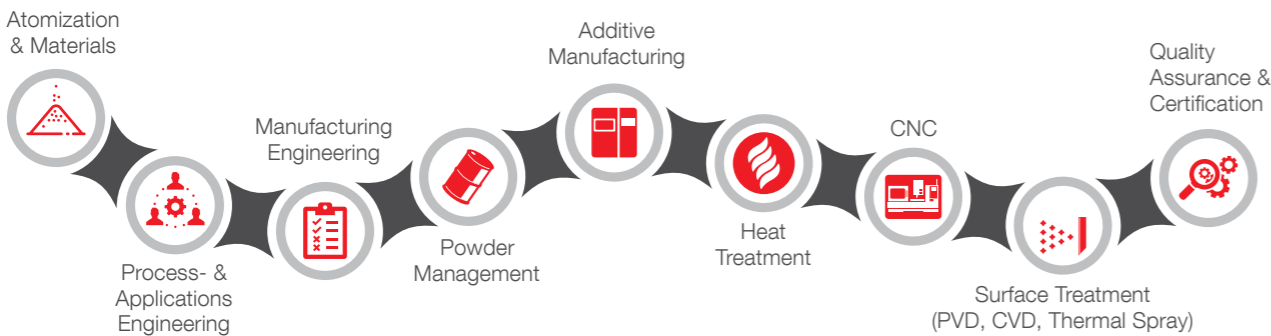
barriers





Additive Manufacturing Capabilities

With end-to-end engineering, Additive Components Manufacturing, and a range of post-processing services like heat treatment, CNC machining, and cleanroom cleaning we provide tailored solutions for the semiconductor industry. Leveraging our expertise in Advanced Surface Treatments, including PVD, CVD, and Thermal Spray coatings, we optimize Component durability and performance.



Additive Manufacturing drivers for the semiconductor industry

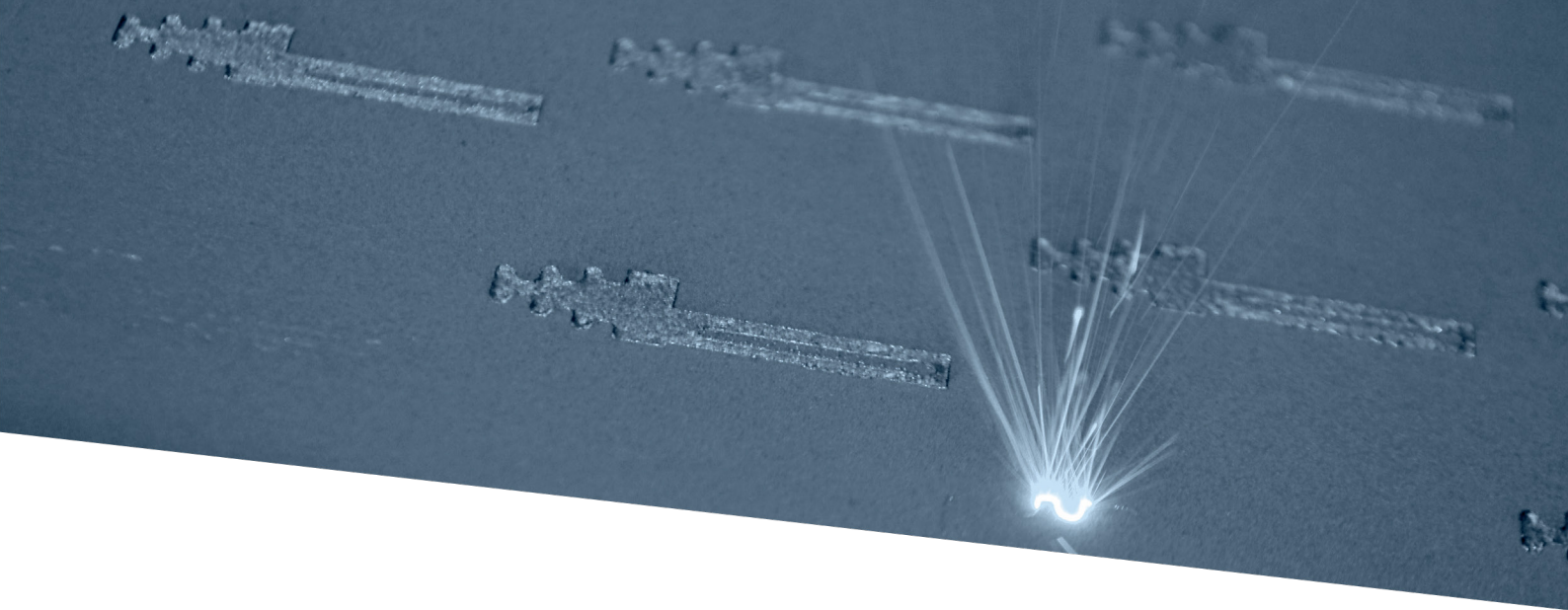
Improved Performance
Increase component production by enhancing the accuracy, speed, reliability, and throughput of semiconductor equipment. Achieve performance gains in key components and subsystems through improved thermal management, optimized fluid flow, and lightweighting.

Design Freedom
Efficiently design, iterate, and produce complex components, such as wafer tables with conformal cooling channels, consolidated end effectors, and advanced kinematic couplings and flexures for optical systems.

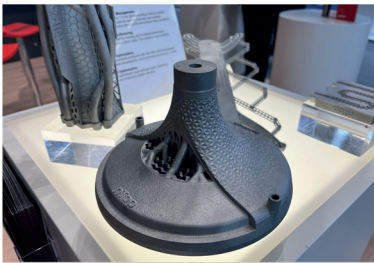
Parts consolidation
Streamline design and manufacturing by reducing the number of components in final assemblies. Achieve complex structures unfeasible with conventional methods, prevent leakages, novel cooling strategies to extract heat, and intricate nozzle shapes for deposition control

Industry specific materials
With over 85 years of experience in materials development and production, Oerlikon offers a comprehensive portfolio of metal powders, including AlSi10Mg, Constellium CP1, C22, NiCP, In 625, and 316 Stainless, each rigorously designed, tested, and manufactured to meet the exacting standards of the semiconductor industry.

Key Equipment	Printing Materials Capabilities
<p>EOS 5x EOS M290 7x EOS M400 1x EOS M400-4</p> <p>AMCM 1x AMCM M 4K-4</p> <p>Trumpf 3x Trumpf TruPrint 5000</p> <p>Concept Laser 5x Concept Laser M2</p>	<p>Aluminum AlSi10Mg, CP1, Al7050-RAM2</p> <p>Nickel Inconel 625, Inconel 718, Alloy23X, HX, C-22, Pure Ni</p> <p>Iron 316 Stainless</p> <p>Titanium Ti64-5</p>
	Certifications
	<p>We have the AS9100 and ISO 9001 certifications; as well as the ITAR registration.</p>



Application Use Cases



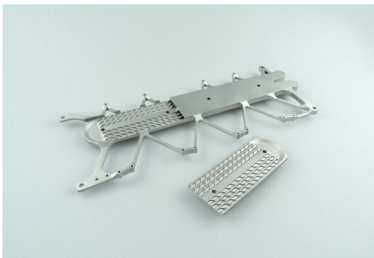
Showerhead

Monolithic design with improved uniformity in gasflow diffusion and integrated thermal management channels. Corrosion resistant alloys like C22 for enhanced component lifetime in aggressive process environment.



Manifold

Part count reduction to improve part reliability and leak resistance safety. Optimized channel design for improved flow with minimal flow resistance and vibration.



Cooling plate

Maximized heat transfer efficiency with engineered cooling channel design close to the functional areas. High heat conductivity materials like CP1 with properties similar to Al 6061.