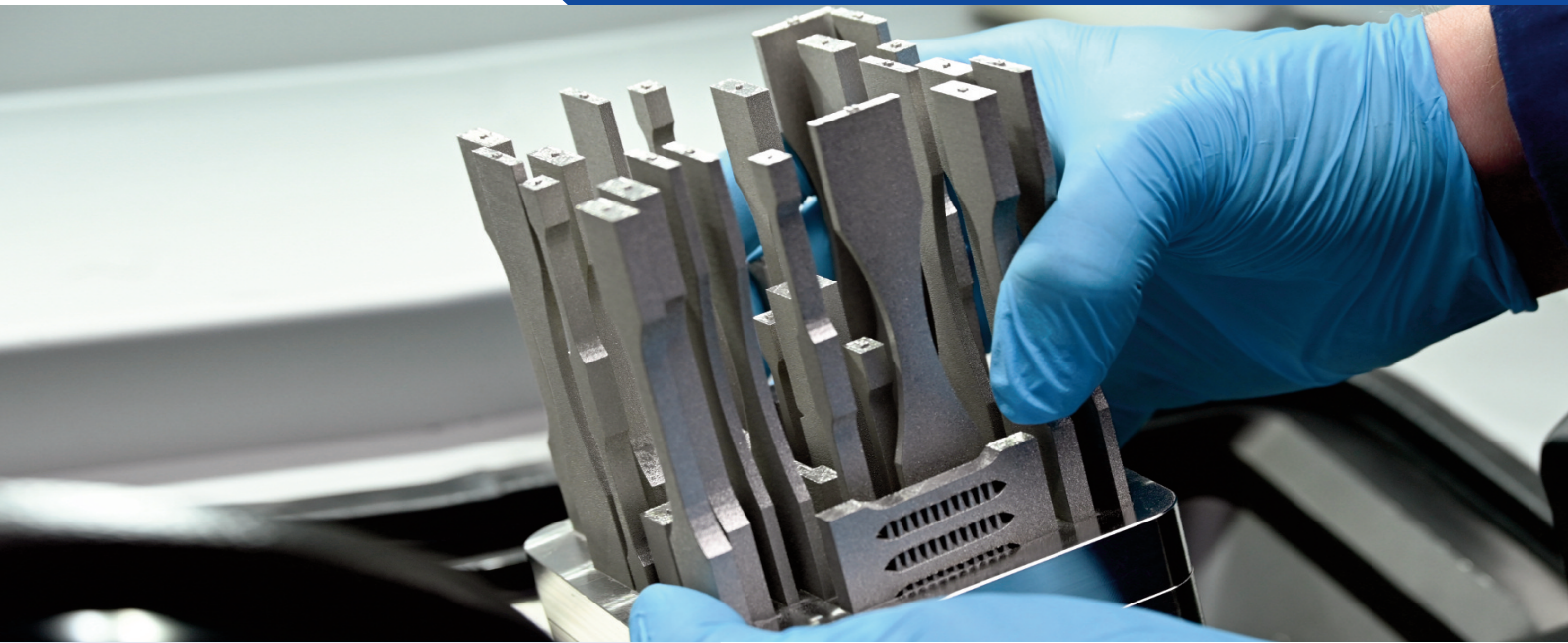




POWDER METALLURGY

The Powder Metallurgy Group focuses on 3D powder printing to develop effective use of powders and processes to support additive manufacturing techniques to produce components; this capability includes providing analysis, testing and development services.

Capabilities

The Group carries out 3D printing analysis on a range of powder metals, this includes particle size distribution (PSD) and morphology. PSD is crucial for optimising the print quality, mechanical properties, and efficiency of the printing process as it directly affects how the material behaves during printing and how the final product performs. Assessing and controlling morphology is essential in 3D printing to understand circularity, agglomerations, flocculation, satellites and fusion to ensure that the printed parts meet the desired specifications and performance criteria.

Testing capabilities include compression testing and flowability testing and mechanical testing. Analysis capabilities enable cross-sector support to develop technologies and to create efficiencies in additive manufacturing.

Benefits

- > Understanding of particle size and layer deposition enables smoother finishes and higher resolution
- > Ability to conduct particle size distribution across a large range scale
- > Assessment of flowability helps to prevent inconsistent layer deposition
- > Morphology of all particles and ability to determine circularity, agglomerations, flocculation, satellites and fusion
- > Reduced waste and lowering of material costs through improved understanding of efficient use of materials
- > Reduced rework increasing the overall efficiency of the 3D printing process

Services

- > 3D laser printing for a range of metals
- > Particle size distribution analysis
- > Morphological examination
- > Compression testing
- > Flowability testing
- > Mechanical testing

Facilities

Fully equipped metal powders, mechanical testing and metallurgical examination laboratories, along with an Advanced Materials Characterisation Centre which includes a state-of-the-art scanning electron microscope (SEM).



**Materials
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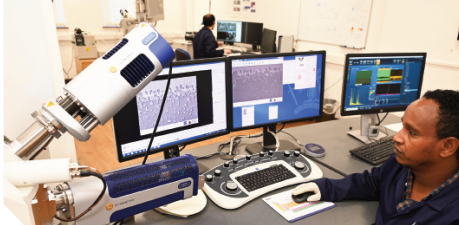
Research and Technology

Scan the relevant QR code to find out more about key areas in which we provide research and technology support.

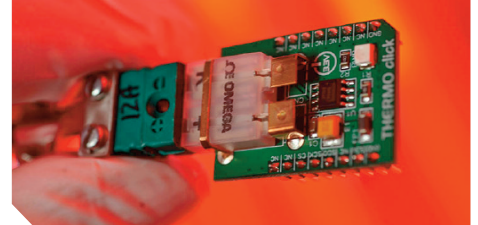
CHARACTERISATION AND ANALYSIS



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CRITICAL RAW MATERIALS



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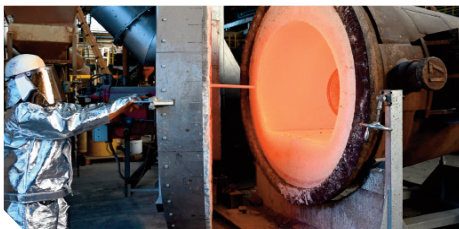
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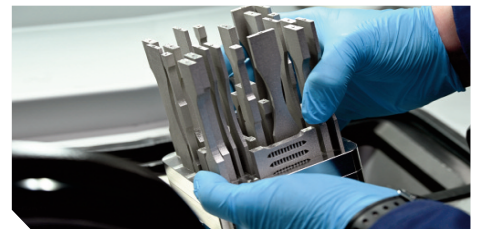
ENERGY AND PROCESS DECARBONISATION



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GREEN METALS



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