

## INDUSTRIAL DIGITALISATION

The Industrial Digitalisation Group supports process improvements through digitalisation of material processes, advanced characterisation strategies and sensor development. Artificial Intelligence (AI) and native designed productivity tools are used to create materials data space enabling material information to be digitally managed, automatically accessed and reconstructed with respect to their properties, process and life-cycle conditions. Digital workflows are developed to improve and manage production, manufacturing and operating processes.

### Capabilities

Digital technologies including workflow tools and sensors are developed and built, with focus on new measurement and characterisation techniques. Process, electronic and software engineers work with a broad range of material data and processes, including the latest AI tools, to augment knowledge and accelerate the development of materials and processes to meet the more challenging industrial requirements.

### Benefits

- > Enhanced productivity and efficiency through data-driven decision making
- > Improved quality and consistency using advanced digital manufacturing technologies and real-time monitoring
- > Acceleration of innovation using simulation and digital twinning techniques
- > Supporting sustainability through material and process controls
- > Risk management through real-time data and predictive analytics
- > Creating efficiencies through faster production cycles and improved forecasting

### Services

- > Sensor development
- > Informatics
- > Data management and process development
- > Industrial internet of things (IIOT) and implementation strategies
- > AI tool application and implementation

### Facilities

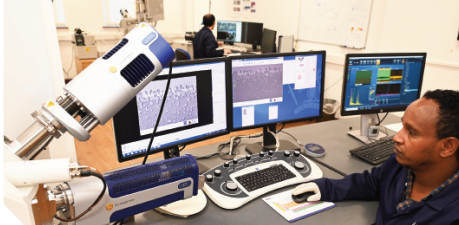
Decades of process knowledge and data including pilot scale processing capability to support development of digital tools. An Advanced Machine Learning and AI laboratory to support materials characterisation and process development to meet faster innovation cycles.



## CHARACTERISATION AND ANALYSIS



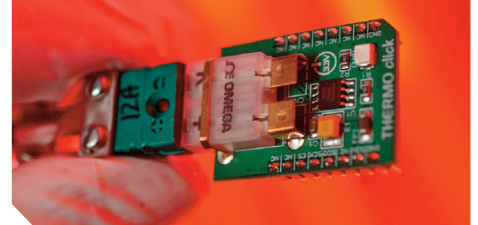
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## INDUSTRIAL DIGITALISATION



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## CRITICAL RAW MATERIALS



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## MATERIAL DEVELOPMENT



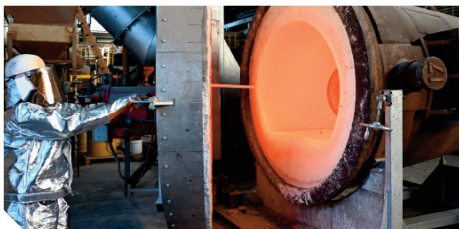
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## ENERGY AND PROCESS DECARBONISATION



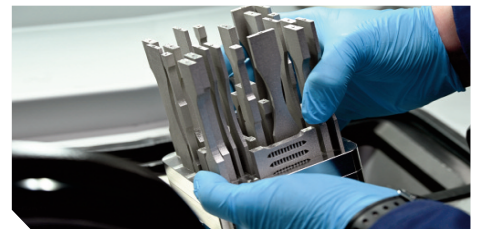
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## POWDER METALLURGY



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## GREEN METALS



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## SUSTAINABLE CEMENT AND CONCRETE



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