

MACH1

Materials Advanced Characterisation Centre



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High throughput technologies for materials characterisation, materials selection and analysis. Providing short, medium and long-term support to industry, as well as to the academia.

Summary

High-throughput techniques are being increasingly used to accelerate the analysis and characterisation of specimens, most notably in the pharmaceutical industry.

The MACH1 centre provides the capabilities to apply such techniques to metallurgical samples, including novel alloys, providing a complete set of properties for a given material.

As materials are ubiquitous and intimately related to manufacturing processes, the development and selection of advanced materials for engineered applications will increase the competitiveness of suppliers in the automotive, aerospace and opto-electronics sectors.

Applications of advanced materials characterisation include:

- higher temperature materials (more efficient engines)
- thermal barrier and corrosion coatings (more environmentally friendly materials)
- lightweight composite materials (lower emissions from vehicles)
- high strength steels (longer lasting materials, lighter vehicles)
- lead-free solders (less toxic materials)
- novel metal powder compositions (less wasteful novel manufacturing processes)



Capabilities

- Multi-throughput benchtop SEM with EDS
- Multi-sample automated hardness indenter
- Multi-sample laser flash system for measurement of Thermal Diffusivity
- Multi-sample Thermogravimetry (TGA) and Differential Scanning Calorimetry (DSC)
- Small disk punch tester for high speed small sample tensile testing
- Dimensional comparator (Renishaw Equator 300)
- Seebeck coefficient measurement machine

Funders



Find out more

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