



# Materials Processing Institute



**Providing cutting edge technology,** developing new innovations for the manufacture of steel, metals and materials.





The Materials Processing Institute operates at the cutting edge of technology, developing new innovations for the manufacture of steel, metals and materials.

Research is focussed on developing new advanced materials, achieving a low carbon and hydrogen future, deploying new digital technologies and reducing waste through a circular economy.



## ADVANCED MATERIALS

Research in advanced materials to understand how they can be used more efficiently and effectively and develop new and innovative materials.



## LOW CARBON ENERGY

Working to reduce carbon emissions through enhanced use of energy to develop a low-carbon future globally.



## DIGITAL TECHNOLOGIES

Utilising digital technologies to optimise industrial processes and develop advanced materials.



## THE CIRCULAR ECONOMY

Research to minimise resource usage, waste, emissions and energy leakage through improved design, maintenance, repair, reuse, remanufacturing, refurbishing, and recycling.



# PRODUCTS AND SERVICES

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## > Research Services

Private and collaborative research programmes and specialist testing.

## > Consultancy

Technical due diligence, market studies, mergers and acquisitions support and capex support.

## > Training

In-depth courses based on the major technologies currently in global operation.

## > Specialist Melting

Small batch and short lead times for specialist steels.

## > Library and Information Services

Patent and literature searches, industry alerting bulletins.

Other support services include leasing of office space, laboratories and workshops, as well as meeting rooms, conference and event facilities.





# SPECIALIST RESEARCH AND INNOVATION

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The Institute supports innovation through the development and commercialisation of technology, this is delivered by scientists, engineers and project teams with expertise in materials science, using state-of-the-art equipment, laboratories, workshops, demonstration, scale-up and production facilities.

Advanced materials expertise is focussed primarily on steel and metals, but also high temperature ceramics, glass and natural materials. By drawing on core Institute expertise in metallurgy, thermo-fluid dynamics and engineering, new technologies are developed to increase yield and improve the quality of materials and processes.

Expertise extends to:

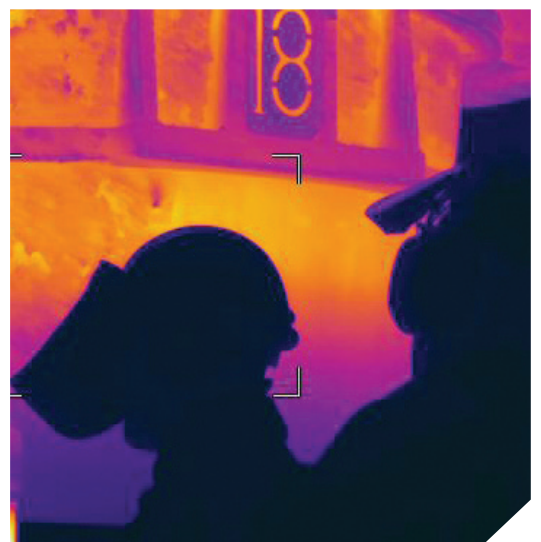
- > **Experimental and Computer Modelling**
- > **Thermodynamics**
- > **Instrumentation and Control**
- > **Materials Microscopy**
- > **High Temperature Materials**
- > **Chemical Analysis**
- > **Materials Testing**



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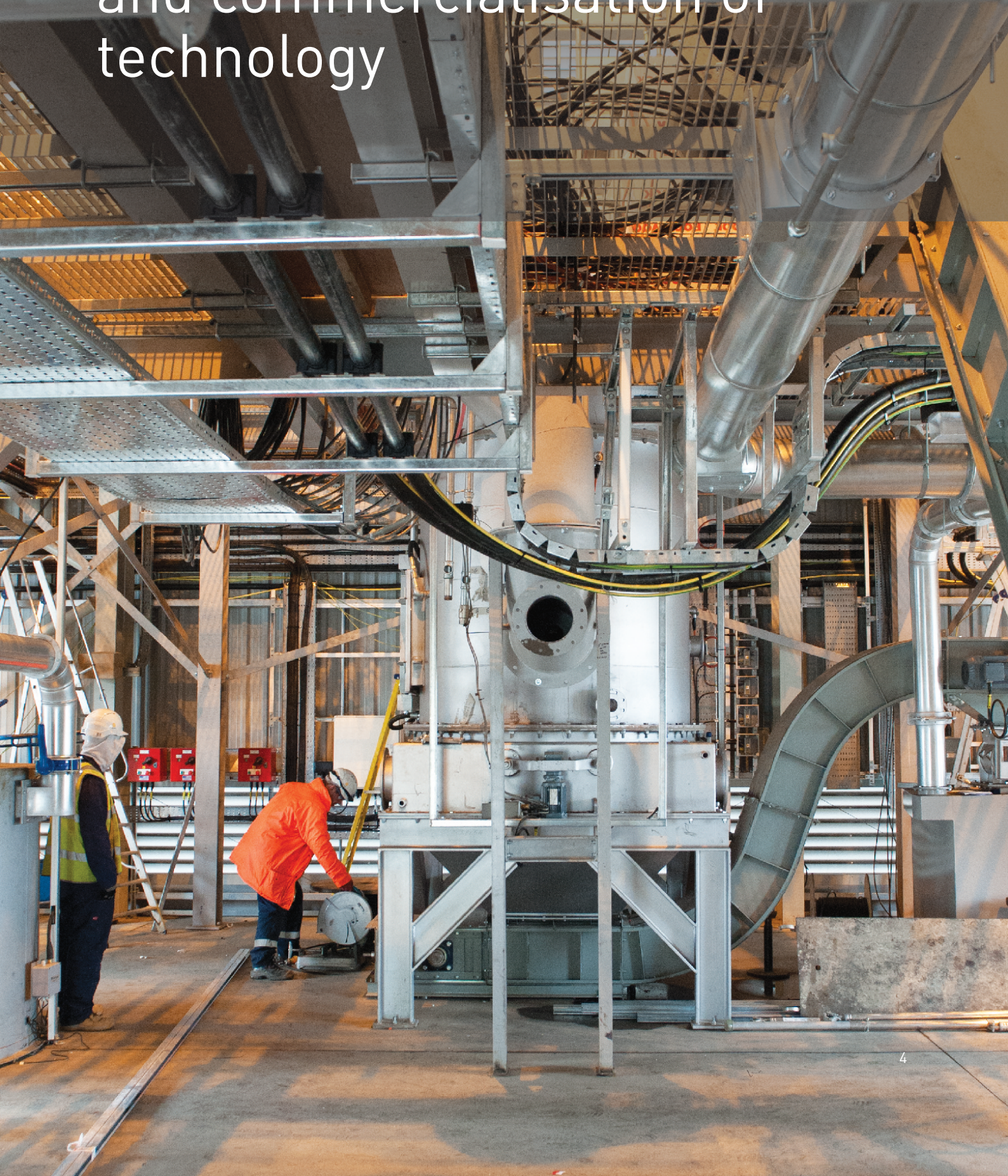
The Institute has a long and successful track record in research supported from a unique combination of laboratories, modelling and simulation facilities, enabling scientists and engineers to deliver materials and process improvements.

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Supporting innovation  
through the development  
and commercialisation of  
technology





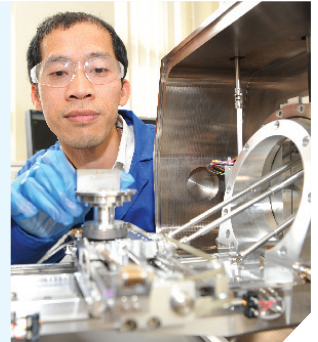
# PARTNERSHIPS AND COLLABORATIONS

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## *Client Partnerships*

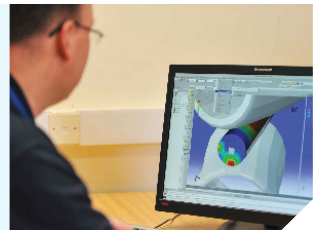
The Institute supports clients through integrated research programmes focussed on client needs and priorities. Advanced technology management tools are used to support technology portfolios, enabling projects to be fulfilled in line with specific business requirements.

The Institute has been delivering complex multi-partner research and innovation programmes for over 75 years and is a market leader in commercialising innovation.



## *Steel Industry Services*

The Institute has an extensive track record of delivering product and process innovation and creating efficiencies through improved materials, processes and quality. Iron and steel services include research, consultancy, technical support, training, pilot and up-scaling.



## *Specialist Melting*

The Normanton Plant provides steel alloys and revert melting services. Specialist steels are available for sectors such as nuclear, defence, offshore, aerospace, automotive and engineering.

The commercial production of steel alloys draws on decades of experience in developing new and unconventional steels and the steel processing expertise of the Institute.



## *Doctoral Academy*

The Doctoral Academy works with universities, research centres and supports PhD students. The Academy links industry with the UK academic research base and promotes doctoral education by publicising relevant resources, forging contacts and informing policymakers on strategic development of doctoral education.





# SUPPORT FOR NEW AND GROWING BUSINESSES

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The SME Technology Centre supports businesses as they start-up and grow, helping them to develop and commercialise innovations and technology.

## > Technical Support

Engineering expertise, scale-up, process improvement, technical advice and mentoring.

## > Facilities Support

Access to specialist research equipment, piloting, laboratory space, workshops, offices and conference facilities.

## > Business Support

Scientific and commercial expertise.







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1944 - 2019  
**75**  
YEARS OF  
INNOVATION