

UK centre to lead the world in fusion diagnostics

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UKAEA launches Diagnostics Innovation Centre of Excellence (DICE) to strengthen UK's position as a world leader in fusion diagnostics.

- Centre leverages decades of UK experience in designing, building and operating diagnostics systems for fusion machines, including JET and MAST Upgrade.
- DICE will be a hub for diagnostics knowledge, benefitting global fusion partners and adjacent UK industries that require precision diagnostics.
- DICE has secured contracts worth £10m so far.

The UK Atomic Energy Authority (UKAEA) has launched a national centre to develop the advanced measurement technology needed to make fusion energy a reality.

The Diagnostics Innovation Centre of Excellence (DICE), based at UKAEA's Culham Campus in Oxfordshire, will strengthen the UK's position as a world leader in fusion diagnostics – the specialised systems that measure what is happening inside a fusion machine.

Since opening, DICE has already secured contracts with 10 organisations, with a combined value of more than £10 million.

What does DICE do?

Fusion energy works by heating a gas called plasma to extreme temperatures. To control this process safely, scientists need to measure the plasma's temperature, density, shape and stability in real time. This is what diagnostics systems do – and designing them requires highly specialist knowledge.

DICE brings together experts with decades of experience in designing, building and operating diagnostics systems for machines including MAST Upgrade and JET (Joint European Torus), which was the world's largest operational fusion machine. This puts the UK's team among the most experienced in the world.

The centre will also explore how its technology can benefit other industries, including medical research, opening up new commercial opportunities beyond fusion.

David Croft, Head of DICE at UKAEA, said:

DICE's capabilities are growing steadily, with cutting-edge equipment now installed in our laboratories. But the greatest strength is our people. With decades of experience spanning diagnostics design, build, installation, analysis and operation, the DICE team provides expertise which is second to none.

Supporting UK growth and global collaboration

DICE will act as a hub for collaboration between UK industry, international fusion partners, and other sectors that can benefit from fusion-derived technologies. It will support supply chain growth across the UK and help train the next generation of fusion specialists.

Over time, DICE will play a central role in shaping the future of fusion technology - both in the UK and around the world.

DICE Fusion Diagnostics Laboratory

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<https://www.gov.uk/government/news/uk-centre-to-lead-the-world-in-fusion-diagnostics>