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DCF and Applications of Ion Beams

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The Dalton Cumbrian Facility is wholly owned and operated by the University of Manchester and is a world leading centre for radiation science research. A major component of the Facility's infrastructure is a suite of commercially sourced electrostatic ion accelerators, ion sources and beamlines.

Intense, energetic ion beams are used to simulate accelerated radiation damage effects experienced by a wide range of materials used in the nuclear power industry across the full fuel cycle and in both fission and fusion reactors. Of equal importance to the mechanical damage inflicted, intense radiation exposure is also responsible for alterations in a wide range of chemical processes throughout the industry.

Although DCF's primary mission is in support of the UK's civil nuclear power programme, radiation effects are also prominent in many other disciplines from space exploitation to biological effects and medical benefits. DCF's interests are expanding into these fields to improve our broad understanding of how radiation interacts with matter and can induce changes.

This talk will give a broad overview of DCF's ion beam facilities with some examples of experimental methods and radiation studies conducted using them.

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