

Aiming High – a new UK facility for targeted irradiation, analysis and modelling

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The use of ion and focussed X-ray microbeams for radiobiological research has been pioneered by the Gray Cancer Institute. Similarly, as a UK national centre for research using ion beams the Surrey Ion Beam Centre (IBC) is known internationally for its work in ion beam analysis. Running in parallel with these experimental studies is a strong activity in the multi-scale modelling of biomedical systems in the Fluids and Systems research group at Surrey.

In this paper we describe an ambitious new collaborative research programme between Surrey and GCI, funded in part by a prestigious grant from the Wolfson Foundation. The research seeks to build and use a new vertical, focused, scanning, nano-irradiation and analysis facility and to use the experimental results in a suite of multi-scale models which extend from the cellular level to whole patient models.