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The Relativistic Ultrafast Electron Diffraction And Imaging (RUEDI) Facility

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The Relativistic Ultrafast Electron Diffraction and Imaging (RUEDI) facility has been recently approved by the UKRI Infrastructure Fund to be a new ultrafast science capability for the UK based at Daresbury Laboratory. It will deliver single-shot, time-resolved, imaging with MeV electrons, and ultrafast electron diffraction down to 10 fs timescales. RUEDI is being designed to enable the following science themes: dynamics of chemical change; materials in extreme conditions; quantum materials; energy generation, storage, and conversion; and biosciences. The evolution of the design of the facility will be outlined along with the remaining challenges to deliver a world leading capability. Particular reference to the photoinjector and photocathode options chosen will be made.

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