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Design of an electron energy spectrometer and energy selector for laser-plasma driven beams at EPAC

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The Extreme Photonics application Centre (EPAC) is a new national facility to support UK science, technology, innovation and industry currently under construction at the Rutherford Appleton Laboratory, UK. EPAC is designed to facilitate a wide variety of user experiments with 1PW 10Hz laser systems. It is anticipated that early experiments will include laser-plasma acceleration of electrons to energies ranging from 100 MeV up to 10 GeV, with later experiments using these electrons as a beam once stable generation is achieved.

EPAC is designed to be flexible, allowing users to select the relevant central electron energy for their experiment. To achieve this goal EPAC and the Accelerator Science & Technology Centre (ASTeC) at STFC Daresbury Laboratory have been working on the design of a beamline to capture laser-plasma driven electrons with broad energy spread, measure their energy spectrum, perform selection of specific energies if necessary and deliver these electrons to a user interaction point. We present here the conceptual design of the proposed spectrometer and energy selection system.

Funding Agency

Footnotes

I have read and accept the Privacy Policy Statement

Yes

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