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Electron beam qualification at ENEA Frascati particle accelerators laboratory

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The APAM Laboratory of the ENEA Frascati Research Centre hosts two electron beam S-Band standing wave linacs. The older one, named REX, produces a 5 MeV, 150 mA electron beam with maximum PRF of 20 Hz. The second one, named TECHEA, was recently commissioned within a Research and Development program focused on breast radiotherapy applications: it produces a 3 MeV, 130 mA electron beam with maximum PRF of 100 Hz. Both plants can produce either electrons or X-rays through a conversion target with photon energies peaked at 2.5 and 1 MeV, respectively. In this contribution we report qualification activities on the electron beam properties in air (flux, uniformity and energy spectrum) at different target from source distances and at different extraction energies to assess the applicability of these facilities for multiple applications, such as sterilization, conservation of cultural heritage artifacts, material degradation, space components testing.

Funding Agency

Footnotes

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Yes

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