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Alternative gamma-ray source based on 2.2 MeV linear accelerator with field emission cathode

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High energy gamma-ray generators have the potential to be used in place of radioisotope sources, thus eliminating the security risk posed by radioisotopic sources. Euclid Techlabs design of nonradioisotopic gamma-ray source is based on ultra-compact linear accelerator with affordable magnetron RF power feeding. Wide aperture 15 cell X-band linac with embedded field emission cathode operates without expensive high voltage electron gun and bulky magnetic focusing system. 2.2 MeV output electron energy and 1 μ A average accelerated beam current on composite target can provide gamma-ray spectrum similar to 2nd category Cs-137 radioisotope source.

Footnotes

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