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Linacs For Medical Isotope Production

A.Pramudita

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Abstrak

This paper reviews efforts on using high energy (25-30 MeV) and high power (10-20 kW) electron linacs and lower energy (7 MeV) photon linacs. PET (Positron Emission Tomography) radioisotopes are produced through photonuclear reactions such as $F(\gamma, n)F$, which also allow production of other PET radionuclides C, N, and O. Other mostly used medical radio nucleus Tc can also be obtained by using the electron linacs, through photofission or photonuclear reactions. Proton linacs for PET have also been recently developed and the product has been available in the market since 2005. The linacs have been tested for F production. As a proton accelerator, the target system and nuclear reactions are similar to the ones used in PET cyclotrons.