

Abstract Submitted
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Converter and Target Optimization for the Photonuclear Production of Radioisotopes Using Electron Linac BINDU KC, V. STAROVOITOVA, Idaho Accelerator Center, Idaho State University, 1500 Alvin Ricken drive, Pocatello, ID 83201, USA, D.P. WELLS, Idaho Accelerator Center — Photonuclear production of radioisotopes using an electron accelerator can be an excellent alternative method of radioisotope production to conventional methods that use nuclear reactors and cyclotrons. With the right choice of electron beam parameters, irradiation time, bremsstrahlung converter and target design, the specific activity of photo-produced radioisotopes may be increased significantly. An optimum converter thickness and target geometry was found for the photo-proton production of Cu-67 using an electron accelerator at the Idaho Accelerator Center. Considering four different geometries for a 40 gram zinc target, the specific activity of Cu-67 for each target shape were determined. In this study, the optimization procedure of bremsstrahlung converter and target for the photonuclear production of radioisotopes using electron linear accelerator was investigated in general, and the optimum bremsstrahlung converter thickness and target geometry for Cu-67 production through $^{68}\text{Zn}(\gamma,p)^{67}\text{Cu}$ reaction was found.

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