



Contribution ID: 78

Type: Oral presentation using Zoom

Mo-99 production at cERL in KEK

Wednesday, 27 October 2021 17:06 (24 minutes)

Medical RI production is a very promising application of superconducting (SC) linear accelerator. SC LINAC can easily generate large averaged current beam of higher energy than those from industrial electron sources for the electron beam (EB) processing where RI production must be avoided. ILC type long pulsed SC LINAC has great cost efficiency due to low duty factor where RF heat load can almost be negligible. For the target design, pulsed operation requires treatment for thermal impulse that is negligible in the continuous wave (CW) accelerators. If we have large space, newly developing Nb₃Sn based low gradient SC accelerator can be available with conductive cooling system without liquid helium. Nuclear fission reactor can generate medical RI with very high specific radioactivity from low enriched uranium, but large radioactive nuclear waste generated at the same time. Hadron accelerators seems to have subjects of short of beam power for yield and generation of unwanted RI that become contamination. Comparing with advantages and disadvantages, SC LINAC of mA or sub-mA class averaged current with dozens MeV energy seems to be very suitable for medical RI production. In this presentation, we show the advantage of ILC type SC LINAC for medical RI production and results of the test production of Mo-99 at cERL (CW SC LINAC) in KEK.

1st preferred time slot for your oral presentation

13:00-15:00 JST (6:00-8:00 CEST, 0:00-2:00 EDT, 21:00-23:00 PDT)

2nd preferred time slot for your oral presentation

15:30-17:30 JST (8:30-10:30 CEST, 2:30-4:30 EDT, 23:30-1:30 PDT)

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Session Classification: S: ILC application (to physics, material science, etc.)

Track Classification: Parallel sessions: Accelerators: Session S: ILC application (to physics, material science, etc.)