Contribution ID: **2608** Contribution code: **TUPM005** Type: **Poster Presentation**

Prototyping of permanent magnet based drift tube for KOMAC 100-MeV DTL

Tuesday, 9 May 2023 16:30 (2 hours)

A high-power proton linac at KOMAC uses a drift tube linac structure to accelerate protons up to 100 MeV. Currently, a total of 148 drift tubes with electromagnetic quadrupoles are used in DTL sections for accelerating protons from 3 MeV to 20 MeV. A drift tube based on a permanent magnet quadrupole has been designed and prototyped to replace the EMQ-based drift tube to enhance the DTL reliability. A designed PMQ with an integrated field gradient of 1.6 T is assembled from 16 segments, which are made of Sm2Co17 magnetic material for its radiation hardness. Details of the prototyping study on the PMQ including design, fabrication, and test along with the beam dynamics effects are given in this presentation.

Funding Agency

This work has been supported through KOMAC operation fund of KAERI by Korean government (MSIT) [KAERI-524320-23]

Footnotes

I have read and accept the Privacy Policy Statement

Yes

Primary author: KIM, Han-Sung (Korea Atomic Energy Research Institute)

Co-authors: KIM, Dong-Hwan (Korea Multi-purpose Accelerator Complex); KWON, Hyeok-Jung (Korea Multi-purpose Accelerator Complex); LEE, Seunghyun (Korea Multi-purpose Accelerator Complex); YUN, Sang-Pil (Korea Multi-purpose Accelerator Complex)

Presenter: KIM, Han-Sung (Korea Atomic Energy Research Institute)

Session Classification: Tuesday Poster Session

Track Classification: MC4: Hadron Accelerators: MC4.A08: Linear Accelerators