



Contribution ID: 641 Contribution code: THPR58

Type: **Poster Presentation**

## Fabrication and tuning of a 325 MHz ion-injector prototype for particle therapy facility

*Thursday, 23 May 2024 16:00 (2 hours)*

In order to miniaturize ion injectors for particle therapy, a design of ion injectors based on a 325 MHz operating frequency was completed. The LINAC was consist of a 2.0 m length RFQ and a 3.8 m length IH-DTL, which was designed to accelerate  $^{12}\text{C}^{4+}$ ,  $^3\text{H}^{+}$ ,  $^3\text{He}^{+}$  and  $^{18}\text{O}^{6+}$  beams to 7 MeV/u. The RFQ cavity and the first DTL tank was been manufactured using aluminum. This paper gives an overview of the fabrication and tuning procedure of the prototype. The quadrupole electric field of the RFQ is adjusted flat by the tuner while reducing the dipole field components in both directions. The measured DTL electric field distribution after tuning is in good agreement with the simulation results.

### Footnotes

### Funding Agency

### Paper preparation format

LaTeX

### Region represented

Asia

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**Session Classification:** Thursday Poster Session

**Track Classification:** MC8: Application of Accelerators, Technology Transfer, Industrial Relations, and Outreach: MC8.A28 Medical Applications