

# Brazing Characteristics on Vertical Joints with Silver Copper Eutectic Alloy Ag72Cu28 for RFQ Section Brazing Stage

Thursday, November 14, 2024 1:00 PM (1h 30m)

A 100-MeV high power proton linac has been operated and used for user service since 2013 at KOMAC. The 100-MeV linac consists of an ion source, low energy beam transport, 3-MeV radio frequency quadrupole (RFQ) and drift tube linac. 3-MeV RFQ has a critical role in focusing and bunching the beam with acceleration from 50 keV to 3 MeV. The RFQ has been operated over 20 years considering the first commissioning in early 2004. The performance of the RFQ showed gradual degradation with low beam transmission efficiency. So new RFQ fabrication is considered to replace the existing RFQ. RFQ fabrication procedure is complicated including two stages of brazing for plug and section with heat treatments. The section brazing requires lots of metal fillers which are vertically inserted into the joint of sections. The failure of brazing is critical damage on the RFQ fabrication process. Therefore, we prepared the specimen for investigating the brazing characteristic. This paper explains the brazing characteristics of the vertical joint based on the specific brazing condition during the section brazing stage.

This work was supported through the KOMAC operation fund of KAERI by Korean government (MIST, KAERI ID: 524320-24)

## Contribution track

ICABU WG1. Accelerator Systems

## Paper submission Plan

Yes

## Best Presentation

No

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**Session Classification:** ICABU Poster Session

**Track Classification:** ICABU: ICABU WG1. Accelerator Systems