SRF2025 TOKYO
22ND INTERNATIONAL CONFERENCE ON RF SUPERCONDUCTIVITY
September 21-26, 2025

Contribution ID: **209** Contribution code: **TUP42** Type: **Poster Presentation**

RF measurement of plasma electrolytic polished 1.3 GHz full-seamless Nb/Cu cavities

Tuesday 23 September 2025 14:30 (3 hours)

From the production and testing of Nb/Cu elliptical cavities by hydroforming, it was found that there is a problem of poor surface roughness due to the large plastic deformation of the copper substrate. To improve this problem, we are trying to apply Plasma Electrolytic Polishing (PEP), which has been developed by INFN-LNL. PEP has the features of extremely high polishing speed compared to conventional electrolytic polishing and simplicity of equipment structure since the cathode does not need to be inserted into the cavity. We plan to perform PEP at INFN-LNL and niobium thin film coating at CERN on the 1.3 GHz copper hydroformed cavities provided by KEK, and to measure the RF performance at KEK by September 2025. In this poster presentation, the preparation status and results of the cavity measurements will be reported.

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Yes

Footnotes

Funding Agency

Amada Foundation

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Session Classification: Tuesday Poster Session

Track Classification: MC3: Cavities