

11th International Workshop on Thin Films and New Ideas for Pushing the Limits of RF Superconductivity - TFSRF2024



Contribution ID: 64

Type: **not specified**

Research of Niobium Cavity Coating with Nb₃Sn Film at IHEP

Tuesday 17 September 2024 10:06 (33 minutes)

Nb₃Sn has significant potential for superconducting radio-frequency (SRF) application in future particle accelerators, especially compact accelerators, which have attracted the attention of many scientific researchers. This work reports the setup and process of Nb₃Sn coating at the Institute of High Energy Physics (IHEP), and presents the results of 1.3 GHz 1-cell cavities coated with Nb₃Sn. The cavities had a matte, non-reflective gray visual appearance after coating. Various parameters were used in the coating processes of Nb₃Sn cavities, which resulted in different performances. The characteristics of witness samples at different locations inside the cavity revealed the uniform quality of the Nb₃Sn coating. Experimental results indicated that less defects and a smoother surface can result in an improved performance of cavity.

Presenter: DONG, Chao (CN-Institute of High Energy Physics)

Session Classification: Beyond Nb: Alternate materials and multilayer structures

Track Classification: Beyond Nb: Alternate materials and multilayer structures