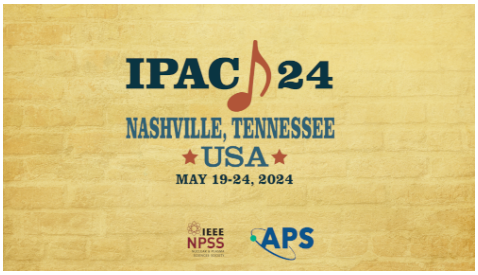

Contribution ID: **1225** Contribution code: **THPS63** Type: **Poster Presentation**

Relationship between anisotropy and cross rolling process for high purity niobium sheets

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

The standard fabrication method for superconducting cavities is to press high RRR niobium sheets to form half cells, which are then joined by EBW (electron beam welding) to form cavities. If the anisotropy of the niobium sheet is too large, gaps will form when the half-cells are joined, so a sheet with low anisotropy is required. To reduce the anisotropy of the sheet, it is essential to apply cross-rolling during fabrication. In this experiment, three types of sheets were produced with different reduction rates during TSCR (Two Sep Cross Rolling). Then, the average anisotropy coefficient $\bar{r}$ and planar anisotropy Δr, the evaluation criteria of anisotropy, were compared to find a relationship between anisotropy and cross rolling condition. As a result, it was found that the Δr value was the smallest and the in-plane anisotropy was the smallest when the reduction ratio before and after cross rolling was the same. In addition, half cells of superconducting cavities were press formed using three types of niobium sheets, and the roundness of the equatorial part was measured. There was no difference among the three types.

Footnotes

Funding Agency

Paper preparation format

Word

Region represented

Asia

Primary author: UMEZAWA, Hiroaki (Sokendai, the Graduate University for Advanced Studies)

Co-authors: YAMANAKA, Masashi (High Energy Accelerator Research Organization); NISHIDA, Naoshi (Tokyo Denkai Co., Ltd.)

Presenter: UMEZAWA, Hiroaki (Sokendai, the Graduate University for Advanced Studies)

Session Classification: Thursday Poster Session

Track Classification: MC7: Accelerator Technology and Sustainability: MC7.T35 Advanced Manufacturing Technologies for Accelerator Components