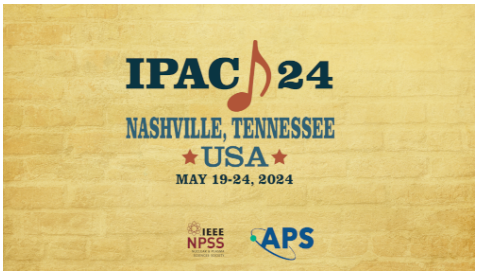

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Impact of medium temperature heat treatment on flux trapping sensitivity in SRF cavities

Wednesday, 22 May 2024 16:00 (2 hours)

Recently, the medium temperature alloying of SRF cavities at temperature of 200-400℃ in UHV resulted in an increase of the quality factor for increasing accelerating gradient. Studies suggest that medium temperature heat treatment dissolves the surface oxide within the RF penetration depth, therefore tuning the electronic mean free path to an optimal value to enhance the performance. Here, we present the results of measurement on several 1.3 GHz single cell cavity which were heat treated at different temperature between 200-400℃ to measure the effect of heat treatment on flux trapping sensitivity. The results show the correlation between the treatment temperature, quality factor, and flux trapping sensitivity.

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