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Temperature uniformity characterization in heat treatment of the Nb3Sn coils for nuclear fusion

Thursday 25 July 2024 14:00 (2 hours)

Burning plasma Experimental Superconducting Tokamak (BEST) is a full superconducting coil tokamak. The heat treatment of the Nb3Sn coils of the BEST is carried out by using atmosphere atmosphere-protected heat treatment furnace. The temperature uniformity throughout the coil becomes a crucial problem due to the large size of the cross-section of the coil. In this study, the temperature uniformity characterization experiment of the Nb3Sn coils was carried out to simulate the actual coil heat treatment condition. The test results show that the temperature gradient of the cross-section of the coil is within 3℃, which provides data for further optimization of heat treatment of the coils of BEST.

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