

Characteristics of HTS Tube Prepared by Centrifugal Forming Process (CFP)

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HTS tube was fabricated by centrifugal forming process(CFP). As a variation of melt casting process(MCP) or centrifugal casting technique, the centrifugal forming process is a flexible method for manufacturing Bi-2212 bulk tubes and has been optimized to achieve smooth surface and uniform thickness. At this process, the slurry was prepared in the mixing ratio of 9:1 between Bi-2212 powder and binder and initially charged into the rotating mold under the speed of 450 rpm. Heat-treatment was performed at the temperature ranges of 870~890 °C in air for partial melting. The HTS tube fabricated by centrifugal forming process at 890 °C under the rotating speed of 450 rpm was highly densified and the plate-like grains with more than 20 μm were well developed along the rotating axis. The measured T_c and J_c at 10 K were around 85 K and 3,000 A/cm² respectively.

Keywords : Bi-2212, High- T_c superconductor, Centrifugal Forming Process(CFP)