Centrifugally Formed Bi2212 Tube Characteristics Depending Processing Parameters

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For the practical application on SCFCL, Bi2212 tubes were fabricated by Centrifugal Forming Process (CFP) in terms of many different processing parameters. Typical sizes of tubes were 60, 150 mm in length and 2.5, 3.5, 4.8 mm in thickness. Initially powder was melted by induction heating. The optimum range of melting temperatures and preheating temperature were 1100℃ and 500℃ for 30min respectively. The nominal mold rotating speed was around 1000 RPM. A tube was annealed at 840℃ for 80 hours in oxygen atmosphere. The plates like grains more than 40 ㎛ were well developed along the rotating direction of mould. It was found that the tube processed with faster rate of mold rotation speed, thinner tube thickness and shorter tube length shows better electric characteristics as compared with the tube normally processed. The tube of 50 mm × 70 mm × 2.5 mm, rotated with 1000 RPM showed I_c= 890 A and T_c= 80. Heat and fluid flow analysis tool was adopted to check the uniformity along tube.

keywords : Bi2212, Centrifugal Forming Process. SCFCL, Uniformity