

The Development of Cube Texture in Ni Tapes for Coated Conductor

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Fabrication condition for the development of cube texture of Ni tapes for YBCO coated conductors was studied. High-purity Ni powder with an average size of 5 microns was put in a rubber mold, isostatically pressed in a water chamber into rods. Tensile test was carried out for the Ni rods sintered at various temperatures in a 4% H₂ – 96% Ar atmosphere to find the sintering condition. The Ni rods sintered above 1000 °C showed good mechanical strength and ductility and the microstructures were fairly dense. The Ni rods were cold rolled into tapes with a thickness of 100 microns without any intermediate heat treatment. The Ni tapes were annealed 1000 °C for various time periods to find the optimum condition for the development of cube texture. It was found that the cube texture of 8~10 ° was fully developed in a short time of a few minutes at this temperature. The degree of the cube texture was not sensitive to the annealing time.

keywords : cube texture, texture-annealing, Ni tape, coated conductor

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