

Fabrication of 1 km Bi-2223/Ag PIT Tapes

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We have fabricated 1 km Bi-2223/Ag HTS tapes successfully to apply superconducting power cable, transformer and motor etc. Intermediate annealing was carried out to increase the homogenization and uniformity of the superconducting filaments embedded in the silver matrix during the deformation process that is important to sustain the engineering critical current density along 1 km long superconducting wire. Phase modification process from tetragonal to orthorhombic Bi-2212 by pre heat treatment(PHT) was carried out to improve the engineering critical current density of Bi-2223/Ag tapes. Rolling parameters were investigated to roll the superconducting tapes with uniform thickness, width and winding tensions. Critical current of 1 km long superconducting tapes was measured continuously about 50 A after final sintering. Engineering critical current density and critical current of 1 km Bi-2223/Ag HTS tape were measured, respectively.

keywords : Bi-2223/Ag HTS tape, intermediate annealing, pre heat treatment, engineering critical current density

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