

DI-BSCCO:The practical HTS wire

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Abstract - Sumitomo Electric has been commercially producing the silver-sheathed Bi2223 multi-filamentary wires, especially under the name of DI-BSCCO (Dynamically-Innovative BSCCO). DI-BSCCO wire is practically used in various applications, for example, cable, magnet, motor and so on. For the use of magnet application, HTS wire usually exposed to strong hoop stress. So the wire is needed to have high mechanical strength. For such a purpose we have the variety of DI-BSCCO called TypeHT-SS with 3ply structure to achieve high tensile strength. Though TypeHT-SS promises the critical tensile stress of 270 MPa, it is not enough to use in high field magnet. So we have been developing stronger wire called TypeHT-XX. In these days, its critical tensile stress has been raised up to nearly 500 MPa with keeping comparatively large J_e . In this presentation, recent progress on DI-BSCCO especially in mechanical strength will be shown. Besides other R&D activities will also be reported.

Keywords (Index Terms) - Bi2223 HTS, DI-BSCCO superconducting wires, high mechanical strength.