

## Fabrication and Properties of 1 km Lengths of 61 Filament BSCCO-2223 Tapes.

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Long lengths (1km class) of 61 filament BSCCO-2223 tapes with high critical current density ( $J_c$ ) were fabricated by using our spray dried precursor powders. The precursor powders which consist of BSCCO-2212 as the major phase have nominal cation ratio of Bi:Pb:Sr:Ca:Cu=1.8:0.35:1.98:2.1:3.17. These precursor powders were made into 61 filament BSCCO-2223/Ag tapes using the standard PIT method with repeated drawing and rolling steps. The wire was drawn into 1.3mm and cold rolled into a tape with thickness of 230 $\mu$ m and 4 mm width. Tape samples (~1km in length) were annealed at 841 °C under 7.5% O<sub>2</sub> atmosphere. The critical current ( $I_c$ ) of 1km lengths is 60A ( $J_c \sim 20,000$  A/cm<sup>2</sup>) when immersed in liquid nitrogen (77K, 0T). Microstructural and compositional analysis was performed on the longitudinal cross sections of samples using XRD, SEM, and EDS.

keywords : BSCCO, 1km lengths, 2223, 2212