

TEM study of (2223) BSCCO superconducting material

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Abstract: The EDTA gel processing route has been used to produce (2223) BSCCO superconducting oxides. Gel - processed (2223) BSCCO material was sintered in air or oxygen to produce specimens for transition temperature determination; the same specimens were characterised by high resolution transmission electron microscopy fitted with EDAX analysis to yield information about homogeneity, microstructure and identification of any grain boundary phases that may be present. Electrical resistivity measurements have been made upon the sintered materials to allow the superconducting transition temperature to be determined as a function of sintering atmosphere. Transition to a superconducting state at 110K was observed in samples sintered and quenched in air.