

Abstract Submitted
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The Development of a Two-Powder Process for Bi-2212 Precursor Powders ELIZABETH SOOBY¹, Texas A&M University: Department of Physics, TERRY HOLESINGER², Los Alamos National Laboratory — $\text{Bi}_2\text{Sr}_2\text{Ca}_1\text{Cu}_2\text{O}_y$ (Bi-2212) is a prime candidate for high-field (>20 T) superconducting magnet applications, as it can be formed into a round wire conductor, a unique characteristic among all the high-temperature superconductors (HTS) discovered to date. Round wires are manufactured by conventional oxide powder-in-tube processes (OPIT). A critical part of this process is the quality of the starting oxide powder precursor, affecting the drawing processes to form wire, the development of the superconducting phase in-situ during heat treatments and the connectivity along the wire length. To better manipulate the partial-melt behavior while better controlling the formation of 2212 by reducing the number of phases present, a 2-powder process was developed. A set of anneals has been completed on the resulting precursor powder. Initial characterization indicates the process can produce Bi-2212, though further development is necessary.

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