Abstract Submitted
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Processing, Microstructure, and Properties of Doped and Undoped MgB2 Fibers JOHN DEFOUW, Northwestern University, JAMES MARZIK, Specialty Materials, Inc., RAYMOND SUPLINSKAS, Specialty Materials, Inc., DAVID DUNAND, Northwestern University, NORTHWESTERN UNIVERSITY COLLABORATION, SPECIALTY MATERIALS, INC. COLLABORATION — A composite consisting of continuous MgB_2 fibers within an Mg matrix is synthesized by reacting CVD boron fibers with liquid magnesium. Over the reaction temperature range of 700 - 1100 $^\circ$C, the reaction time varies by several orders of magnitude. Much slower kinetics are observed for reaction of B fibers doped with C or Ti by co-deposition during the CVD process, which has been shown to improve superconducting properties after reaction to MgB_2. The reaction times, resulting microstructures, and superconducting properties are compared for both doped and undoped fibers.

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