

Study of HTS Wires at High Magnetic Fields

D. Turrioni, E. Barzi, M. J. Lamm, R. Yamada, A. V. Zlobin, A. Kikuchi

Abstract—Fermilab is working on the development of high field magnet systems for ionization cooling of muon beams. The use of high temperature superconducting (HTS) materials is being considered for these magnets using Helium refrigeration. Critical current (I_c) measurements of HTS conductors were performed at FNAL and at NIMS up to 28 T under magnetic fields at zero to 90 degree with respect to the sample face. A description of the test setups and results on a BSCCO-2223 tape and second generation (2G) coated conductors are presented.

Index Terms— High temperature superconductor, BSCCO, coated conductor, critical current

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D. Turrioni, E. Barzi, M. J. Lamm, R. Yamada, A. V. Zlobin are with the Fermi National Accelerator Laboratory (Fermilab), P.O. Box 500, Batavia, IL 60510 USA (phone: 630-840-3695; fax: 630-840-3369; e-mail: turrioni@fnal.gov). A. Kikuchi is with the National Institute of Materials Science Tsukuba, Ibaraki, 3050048, Japan.