# Electrical Characteristics of Stacks of YBCO Tapes in Applied Magnetic Field

Jae-Ho Kim, Chul Han Kim, Parikshit Patil,
Jozef Kvitkovic, and Sastry Pamidi

***Abstract*** - Stacks of Second Generation (2G) High Temperature Superconductor (HTS) tapes were characterized for critical current density and magnetization losses. Effect of external magnetic field on critical current density is studies as a function of number of tapes in the stack and the configuration of stack arrangement. Results of the measurements on stacks of IBAD and RABiTS showed interesting differences. The results suggest that the arrangement of tapes in fabricating high-current cables needs to consider self-field effects, critical current density in external magnetic field, and magnetization losses to optimize the cable configuration for specific applications.

***Index Terms*** - Magnetic field, YBCO, stacked tape, critical current, magnetization loss, shielding effect.

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