

# Magnetic $T_c$ Measurements of Ag-sheathed Bi-2223 Tapes for Proposal of a Standard Method

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Bi-2223 tapes have an important potential for the engineering application, such as power cable, transformer, motor etc.. Some of major cable companies have already produced the commercial Bi-2223 tapes in United State and Japan. The IEC(International Electrotechnical Commission), one of the international standardization organization, issued two International Standards on the test method of critical current and resistive transition temperature( $T_c$ )of Ag-sheathed Bi-2223 tape for international establishment of standard method.

In addition to the resistive  $T_c$  method, the magnetic  $T_c$  is a significant and fair method to evaluate the quality of the Bi-2223 tape for both of manufacturer and user. We have investigated an standard test method using a SQUID magnetometer because the SQUID magnetometer is more sensitive and widely used in the world than other ac susceptometer or vibrating sample magnetometer. For obtaining more sensitive resolution we employed an both field method, which measures the magnetic moment of a specimen in positive an negative fields.

Analytical comparison of the magnetic  $T_c$  with resistive  $T_c$  was accomplished for three specimens. The magnetic  $T_c$  method showed a little higher  $T_c$  than resistive  $T_c$  method. We have also studied the field dependence of the magnetic  $T_c$  from 5 G to 100 G, however, any significant difference was not found in our three specimens

keywords : critical temperature, Ag-sheashed-Bi-2223 tape, standard method, SQUID magnetometer