Comparative Study on Current and Magnetic Flux Profiles in $SmBa_2Cu_3O_7$ and $YBa_2Cu_3O_7$ Coated Conductors

K. W. Han[a], Y. H. Jung[a] H. S. Ha[b], H. S. Kim[b], S. S. Oh[b], N. Y. Kwon[c], J. E. Yoo[a], D. J. Youm[a]

[a] *Korea Advanced Institute of Science and Technology, Daejeon, Korea*
[b] *Korea Electrotechnology Research Institute, Changwon, Korea*
[c] *Korea University, Seoul, Korea*

The field profiles near the surfaces of $SmBa_2Cu_3O_7$ (deposited on IBAD) and $YBa_2Cu_3O_7$ (deposited on RABiTS) were measured for various load lines using scanning Hall probe method (SHP). Here load lines were defined by the relation between applied magnetic fields and currents. To calculate the current profiles, the numerical inversion method was used to calculate the current profiles and from these profiles, the magnetic flux profiles were calculated. By using these profiles, two samples were compared with each other. Finally the field and current profiles of Brandt's result are compared with those of this experiment.

Keywords : IBAD, RABiTS, field profile, critical current density, scanning Hall probe