

## Test of a 1MVA Single Phase HTS Transformer with Concentric Arrangement Winding

S. H. Kim<sup>a</sup>, W. S. Kim<sup>b</sup>, T. Chang<sup>c</sup>, J. T. Kim<sup>c</sup>, K. D. Choi<sup>c</sup>, G. W. Hong<sup>c</sup>,  
H. G. Joo<sup>c</sup>, J. H. Han<sup>c</sup>, J. H. Park<sup>d</sup>, H. S. Song<sup>d</sup>, S. Hahn<sup>a</sup>

<sup>a</sup> *Seoul National University, Seoul, Korea*

<sup>b</sup> *Electrical Engineering and Science Research Institute, Seoul, Korea*

<sup>c</sup> *Korea Polytechnic University, Kyonggido, Korea*

<sup>d</sup> *Hyosung Corporation, Changwon, Korea*

A 1 MVA single phase high temperature superconducting (HTS) transformer with concentric arrangement winding was manufactured and tested. The rated voltages of primary and secondary of the HTS transformer are 22.9 kV and 6.6 kV respectively. BSCCO-2223 HTS tape was used for HTS windings of 1MVA HTS transformer. Single HTS tape for primary windings and 4 parallel HTS tapes for secondary windings were used considering the each rated current of the HTS transformer. A core of HTS transformer was fabricated as a shell type core made of laminated silicon steel plate. And a GFRP cryostat with a room temperature bore was also manufactured. The characteristics tests of the 1MVA HTS transformer were performed such as no load test, short circuit test and several insulation tests at 77 K using liquid nitrogen. The results of tests were compared with the characteristics estimated by numerical calculation.

keywords : 1 MVA, HTS transformer, concentric arrangement winding, parallel HTS tapes

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