Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Vertical Magnetic Levitation Force Measurement on Single Crystal YBaCuO Bulk at Different Temperatures SUKRU CELIK, Department of Energy Systems Engineering, Faculty of Engineering and Architecture, Sinop University, 57000, Sinop, TURKEY, SAIT BARIS GUNER, Department of Physics, Faculty of Arts and Sciences, Recep Tayyip Erdogan University, 53100 Rize, TURKEY, KEMAL OZTURK, Department of Physics, Faculty of Arts and Sciences, Karadeniz Technical University, 61100 Trabzon, TURKEY, OZGUR OZTURK, Department of Physics, Faculty of Arts and Sciences, Kastamonu University, 37100 Kastamonu, TURKEY — Magnetic levitation force measurements of HTS samples are performed with the use of liquid nitrogen. It is both convenient and cheap. However, the temperature of the sample cannot be changed (77 K) and there is problem of frost. So, it is necessary to build another type of system to measure the levitation force high Tc superconductor at different temperatures. In this study, we fabricated YBaCuO superconducting by top-seeding-melting-growth (TSMG) technique and measured vertical forces of them at FC (Field Cooling) and ZFC (Zero Field Cooling) regimes by using our new designed magnetic levitation force measurement system. It was used to investigate the three-dimensional levitation force and lateral force in the levitation system consisting of a cylindrical magnet and a permanent cylindrical superconductor at different temperatures (37, 47, 57, 67 and 77 K).

Sukru
Faculty of Engineering and Architecture, Department of Energy Systems, Sinop University, 57000, Sinop, TUR

Date submitted: 31 Oct 2015 Electronic form version 1.4