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Superconducting properties of YBaCuO bulk ceramics using melt process

Wednesday 30 August 2017 13:15 (1h 45m)

Superconducting properties of CeO2 doped and undoped YBCO superconductors were evaluated to investigate the effect of pinning center on the magnetization properties. The variation △M with doping was maximum for 5 wt% doping and decrease with further doping. The result indicates that △M is propotional to the number of magnetic flux lines passing through the sample. The CeO2 was converted to fine BaCeO3 particles which were trapped in YBCO superconductor during the reaction sintering. The trapped fine particles, BaCeO3 may be acted as a flux pinning center. Numerous pinning centers existing in the CeO2 doped sample react with the external magnetic field and trap the magnetic flux. This research was supported by the Korea Electric Power Corporation [Grant number: R16XA01].

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