

Study on the superconducting properties of Mn substituted YBCO

ABSTRACT

We have performed a study on the superconducting properties of $Y_{1-x}Mn_xBa_2Cu_3O_{7-x}$ with various Mn doping ($x = 0.00, 0.25, 0.30, 0.35, 0.40$ and 0.45). All of the samples displayed significant Meissner effect. XRD patterns indicate the existence of unknown peaks belonging to the impurities. A decrease in grain size as the concentration of Mn increases was observed from the SEM micrographs. The resistivity results showed the shifting in $T_C(R=0)$ towards low temperature as the Mn concentration increases.

Keyword: Superconducting properties; Mn