PREPARATION AND CHARACTERIZATION OF Y-Ba-CuO AND Bi-Ca-Sr-CuO HIGH TEMPERATURE SUPERCONDUCTORS

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High temperature superconductors $YBa_2Cu_3O_{7-x}$ and $Bi_2CaSr_2Cu_2O_{9-x}$ have been prepared by soild state reaction under different heat treatment conditions. Temperature dependance of electrical resistivity and magnetic susceptibility have been studied. Structure has been confirmed by X-ray powder diffraction. Yttrium compound has a $T_c \sim 90$ K whereas the bismuth compound has an onset of resistivity transition at ~ 120 K and zero resistivity at ~ 95 K, as has been observed by many other groups. According to our observations, thermal treatment and the purity of chemicals appear to influence greatly the occurrence of superconductivity and the value of T_c in these materials.

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