

PROCESSING Bi-Pb-Sr-Ca-Cu-O SUPERCONDUCTORS FROM AMORPHOUS STATE,
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We produced superconducting ceramics of the Bi-Pb-Sr-Ca-Cu-O system started from a glass. To form the glass, the mixed oxide powder was melted at 1200 °C in air. The liquid was quenched rapidly by pouring it onto an aluminum plate and rapidly pressing with another plate. The quenched compound was in the form of black amorphous solid, whose x-ray powder pattern has no crystalline peaks. After heat treatment at high temperatures, the glass crystallized into a superconductor. The crystalline phases in the superconductor identified using x-ray diffraction patterns. These phases were that associated with the superconducting phases of $T_c = 80$ K ($\text{Bi}_2\text{Ca}_1\text{Sr}_2\text{Cu}_2\text{O}_x$) and of $T_c = 110$ K ($\text{Bi}_2\text{Ca}_2\text{Sr}_2\text{Cu}_3\text{O}_x$). The dc resistivity and the ac susceptibility of these superconductors were studied.

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