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Investigation of Structural and Superconducting Properties of BiSrCa(Ti)CuO Superconducting Ceramics from Sol-Gel Method

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Abstract : Superconducting $\text{Bi}_2\text{Sr}_2\text{Ca}_{1-x}\text{Ti}_x\text{Cu}_2\text{O}$ ceramics samples have been prepared by Sol-Gel methods; (using citrate process). The influences of the preparation conditions of compound oxide powder on structural and superconducting properties have been investigated by x ray diffraction (XRD), Scanning Electron Microscopy (SEM) equipped with EDS. The critical transition temperatures T_c have been determined by resistivity versus temperature measurements. Cell parameters samples were calculated from XRD patterns. The polyacrylamide gel makes the citrate process easier, more rapid and affords the possibility of synthesis of high quality oxide powders.

Keywords : Superconducting, Sol-Gel - Polyacrylamide Gel