ELECTRİCAL, STRUCTURAL AND THERMAL PROPERTİES OF NANOCERAMİC (Bİ2O3)1-X-Y(DY2O3)X(SM2O3)Y AND (Bİ2O3)1-X-Y(DY2O3)X(TM2O3)Y TERNARY SYSTEM

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ABSTRACT

Crystal structure and temperature depence of Sm2O3- Dy2O3 and Tm2O3- Dy2O3 doped bismuth trioxide (Bi2O3) tenary solid solutions have been investigated. The (Bi2O3)1-x-y(Dy2O3)x(Sm2O3)y and (Bi2O3)1-x-y(Dy2O3)x(Tm2O3)y ternary systems were obtained with x=20,10 mol % and y=20,10 mol % dopant concentrations. The temperature dependence of the electrical properties of □-phase of solid solution samples were measured by d.c. four point probe technique. The crystallographic structure of the samples were characterized by X-ray powder diffractions (XRD). The unit cell parameters were determined from the powder diffraction patterns. Thermal behavior and stability of the phases were investigated by Differential Thermal Analysis-Thermo Gravity (DTA-TG).