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Ferroelectric and structural characterization of $\text{Bi}_4\text{Ti}_3\text{O}_{12}$ doped with Pr^{3+} and Eu^{3+} Polycrystals ABRIL MUNRO, Posgrado en Fisica de materiales CICESE-UNAM, JORGE MATA, CCMC-UNAM, EDUARDO MARTINEZ, CCMC-UNAM, Ensenada B.C., Mexico, JESUS SIQUEIROS, CCMC-UNAM — Bismuth Titanate; $\text{BiTi}_3\text{O}_{12}$ (BIT) is a ferroelectric material useful for NVFRAMs. Bismuth ions in BIT have been replaced by rare earth elements such as Pr and Eu to form new ceramics. A solid-state reaction route was adopted for the synthesis. This study reports the structure and electric properties of the polycrystals. Crystal structures were determined accurately by X-ray diffraction and structure refinement using Rietveld analysis revealed that the all the samples is single phase. The dielectric constant showed higher values for BIT-Pr and BIT-Eu and the dielectric loss was low. Replacement of RE ions for Bi in the BIT structure produces a considerable decrease of the Curie temperature (T_c) from 675 to 450 °C. The change in the values of ferroelectric polarization with the addition of rare earths to BIT appears to be gradual. Homogeneous grain growth, the grain morphologies were observed. The density was increased by the replacement of cations of rare earth in the structure. The authors would like to thank P. Casillas, M. Sainz, J. Peralta and J. Palomares for their technical assistance. This work is partially supported by CONACyT México, projects 47714-F and 40604-F and DGAPA-UNAM projects IN116703 and IN100903.

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