

Dielectric properties of barium titanate with different stoichiometry

Abstract

This paper focused in details about dielectric properties of BT with different stoichiometry. In this research, BT was synthesis by solid state reaction between TiO_2 and BaCO_3 at constant sintering temperature of $1350\text{ }^\circ\text{C}$. Five different ratio of BT was characterized by using SEM, XRD, and IS. There have production of secondary phase when Ba was excessive. Impedance plot shows the relation between dielectric properties and stoichiometry of BT where the highest value of dielectric properties is comes from sample with Ba/Ti ratio equal of 1:1.

Keywords

Barium carbonate; Barium titanate; Dielectric properties; Solid state; Stoichiometry; Titanium dioxide