



## Structural and Dielectric Properties of Bi<sub>2</sub>O<sub>3</sub> Doped SrTiO<sub>3</sub> Ceramics

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**Abstract:** Bismuth oxide (10%) doped with 90% SrTiO<sub>3</sub> (ST) ceramic powders was synthesized by solid-state route technique. The effect of Bi<sup>+3</sup> ions on the dielectric response of ST showed an increase in dielectric constant ( $\epsilon_r$ ) than undoped ST. Low dissipation factor ( $\tan\delta$ ) for good dielectric applications. Bismuth doped ST contrary to the expectations exhibited the decreasing trend of permittivity from 303K-525K and afterwards showed increasing nature with relaxations. The microstructure was examined by field emission scanning electron microscope (FESEM). Some additional phases SrBi<sub>3</sub>Ti<sub>5</sub>O<sub>18</sub> and TiO<sub>2</sub> rutiles were detected by X-ray diffraction technique.

**Keywords:** Dielectric properties, Polarization, X-ray diffract meter, Ceramic titanates.

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