

## Dielectric Properties of Continuous Composition Spreaded BaTiO<sub>3</sub>-SrTiO<sub>3</sub> Thin Films

### Prepared by Off-Axis RF Magnetron Sputtering System

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**Abstract :** The dielectric properties of continuous composition spreaded (CCS) BaTiO<sub>3</sub>-SrTiO<sub>3</sub> (BST) thin films grown at room temperature and annealed at different temperature (350°C and 550°C) were investigated. Moreover, electrical properties (leakage current and breakdown voltage) of CCS BST thin films were also investigated. The aluminum top-electrode, sized by 200×200 μm<sup>2</sup> and apart from each other by 300 μm, were deposited on the CCS BST thin films by the DC sputtering system. The dielectric properties of the CCS BST thin films were significantly influenced depending on the distance from BaTiO<sub>3</sub> and SrTiO<sub>3</sub> targets which was attributed to the BaTiO<sub>3</sub>-SrTiO<sub>3</sub> composition ratio. The maps of dielectric constants and loss tangents were plotted via 1500 μm - step measuring. The specific points showing the dielectric constant (k: ~300) and loss tangent (tanδ: ~0.008) at 1 MHz were found.

**Key Words :** high-k, CCS, BST, thin films

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