

### Synthesis of Ultra-fine BaTiO<sub>3</sub> by Physicochemical Process

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Physicochemical effect on synthesis process of BaTiO<sub>3</sub> fine powders are reported This BaTiO<sub>3</sub> Powders are made by slightly modified polymerized method and intensive mechanical treatments for its advantages such as high purity, fine particle size, and reduction of calcination temperature Ba(NO<sub>3</sub>)<sub>2</sub> and (NH<sub>4</sub>)[TiO(C<sub>2</sub>O<sub>4</sub>)<sub>2</sub>]·2H<sub>2</sub>O are used for starting materials, and the molar ratio of metal salt/citric acid, mechanical treatment process are used for factor DTA/TG analysis indicated that thermal decomposition of precursor and X-ray diffraction measurement indicated formation of tetragonal phase

### Effects of LaNiO<sub>3</sub> Buffer Layers Thickness on the Ferroelectric Properties of PZT Thin Film

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Pb(Zr<sub>x</sub>Ti<sub>1-x</sub>)O<sub>3</sub> (PZT) thin films with preferred crystallographic orientations are currently being considered for applications in nonvolatile memory and piezoelectric devices. Some recent studies have shown that the preferred orientations of Pb-based perovskite films are dependent on kinds of buffer layers, and the advantages of certain oriented films on electrical and ferroelectric properties However, further extensive studies of ferroelectric properties have not been established firmly, and suitable techniques for preparing oxide buffer layers are much desired

In this work, we carried out a comparative investigation of structural and ferroelectric properties of PZT thin films on LaNiO<sub>3</sub> (LNO) buffer layers with different thickness As the LNO film thicknesses increased, PZT thin film had the (100) preferred orientation and the polarization and the leakage current likewise increased