

### EI03

A study on the ferroelectric properties of cation modified PZT thin film  
양이온 치환에 따른 PZT박막의 강유전 특성 변화에 관한 연구

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Cation-modified PZT thin films were more desirable for ferroelectric memory applications due to their lower coercive field, higher resistivity, and lower dielectric memory-aging rate compared to PZT thin film. The resulting effect of cation-modified can be explained on the basis of defect chemistry in a perovskite lattice. In this study, La and Nb were chosen as substituents and their effects on fatigue behavior and leakage properties of PZT-base thin film were investigated. La- or Nb-substituted PZT thin films were deposited by sol-gel processing method on Pt electrode, Zr/Ti ratio is fixed as 40/60 with tetragonal perovskite phase. The excess Pb added onto starting precursor was fixed to 15 wt%. Each sol-gel process condition and heating process were optimized based upon its thermal analysis result. The surface microstructure, crystallinity, ferroelectric properties, and leakage characteristics were investigated.