Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.

Supporting information

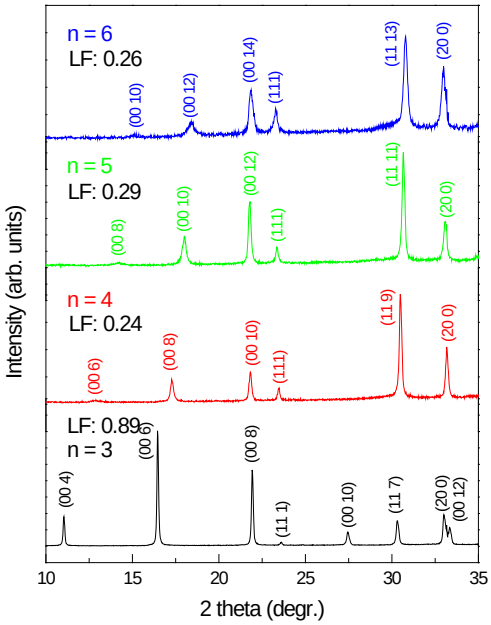

Fig. S1. The XRD results of BFTOs films and corresponding Lotgering Factor. The orientation preference with *c*-axis is obviously suppressed when increasing the n values from 3 to 4, as the Lotgering factor for BFTO3 and BFTO4 samples are f = 0.89 and f = 0.24, respectively. While the Lotgering factor for BFTO4, BFTO5 and BFTO6 samples are almost no significant changes, approximately 0.26.

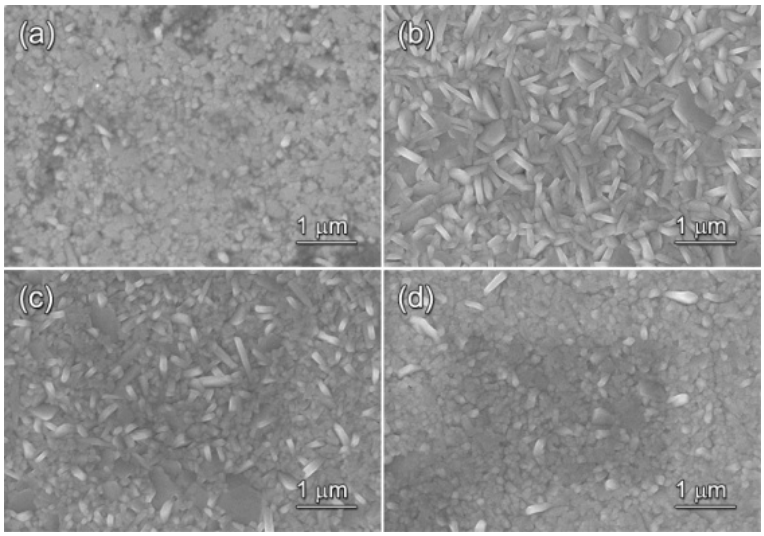

Fig. S2. The surface FE-SEM results for all derived thin films. All the thin films are denser. Plate-like grains are usually observed for ceramic samples and thin films due to the anisotropic nature of the crystal structure of the aurivillius phase materials. However, grain-like morphologies appear in the derived thin films can be attributed to the low annealing temperature as compared to the ceramics. In turn, this characteristic of morphologies may endow admirable ferroelectric property as discussed because of the polarization anisotropy in the structure.

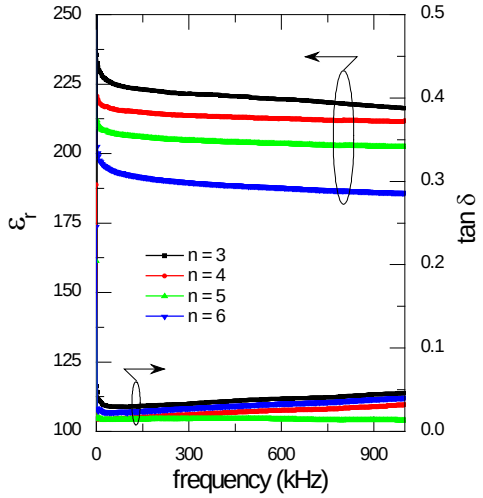

Fig. S3. The dielectric properties of BFTOs films.

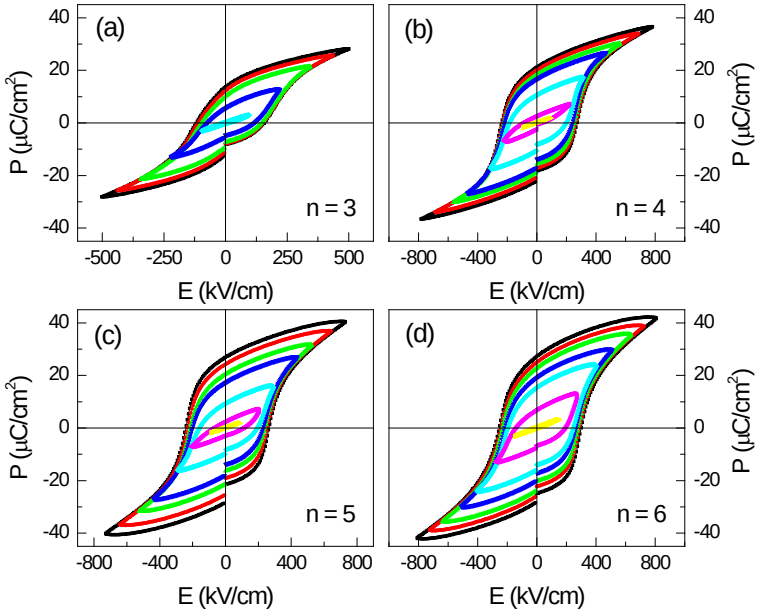

Fig. S4. The BFTOs thin films exhibit well-shaped rectangular ferroelectric hysteresis loops with increasing applied electric filed and the squareness of the loops was well improved.

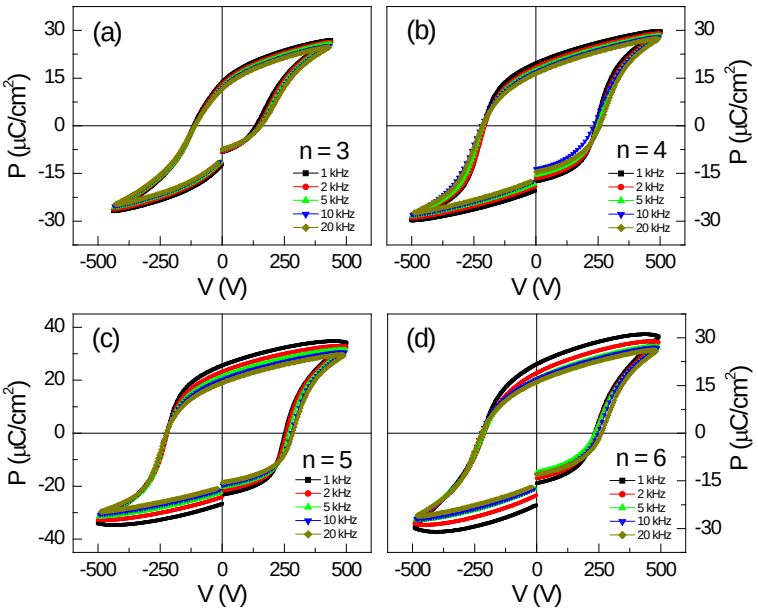

Fig. S5. The BFTOs thin films exhibit well-shaped rectangular ferroelectric hysteresis loops with various frequency and the squareness of the loops was well hold.

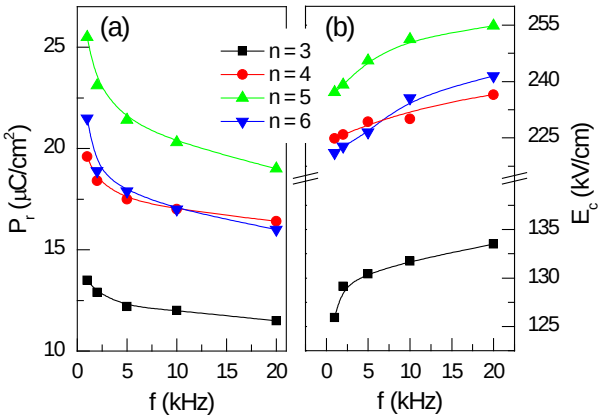

Fig. S6. The variation of remnant polarization and electric field of BFTOs thin films on the test frequency.

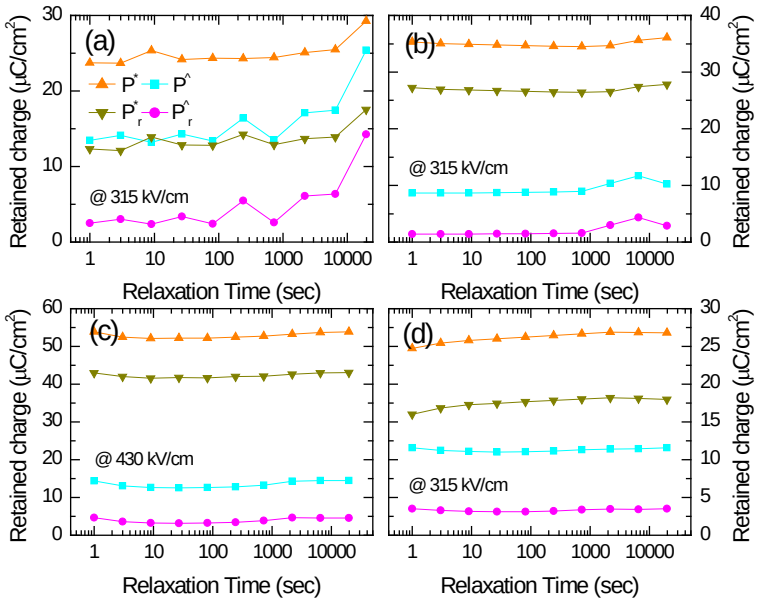

Fig. S7. The polarization dependence the relaxation times: (a) n=3, (b) n=4, (c) n=5, (d) n=6.

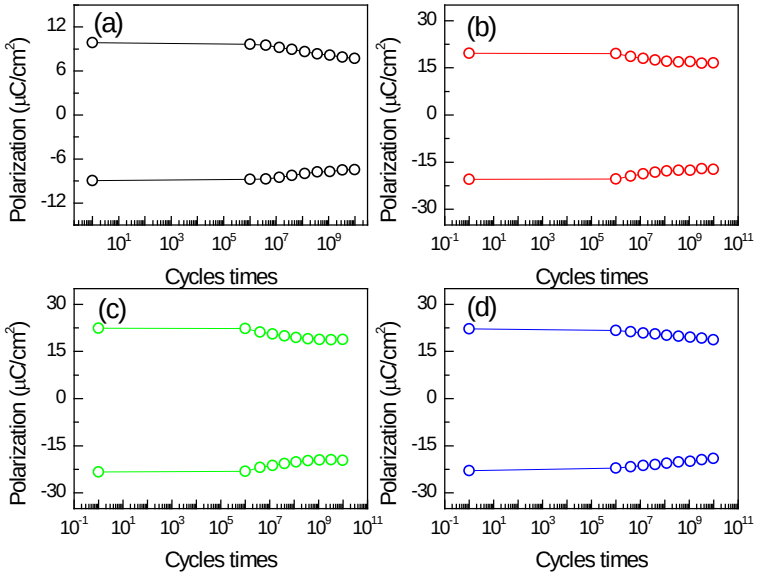

Fig. S8. The polarization dependence the read/write switching cycles: (a) n=3, (b) n=4, (c) n=5, (d) n=6.