

Supplementary Material

Simultaneously achieving large ferroelectric polarization and high- T_C in sol-gel deposited PbTiO₃-based perovskite thin films

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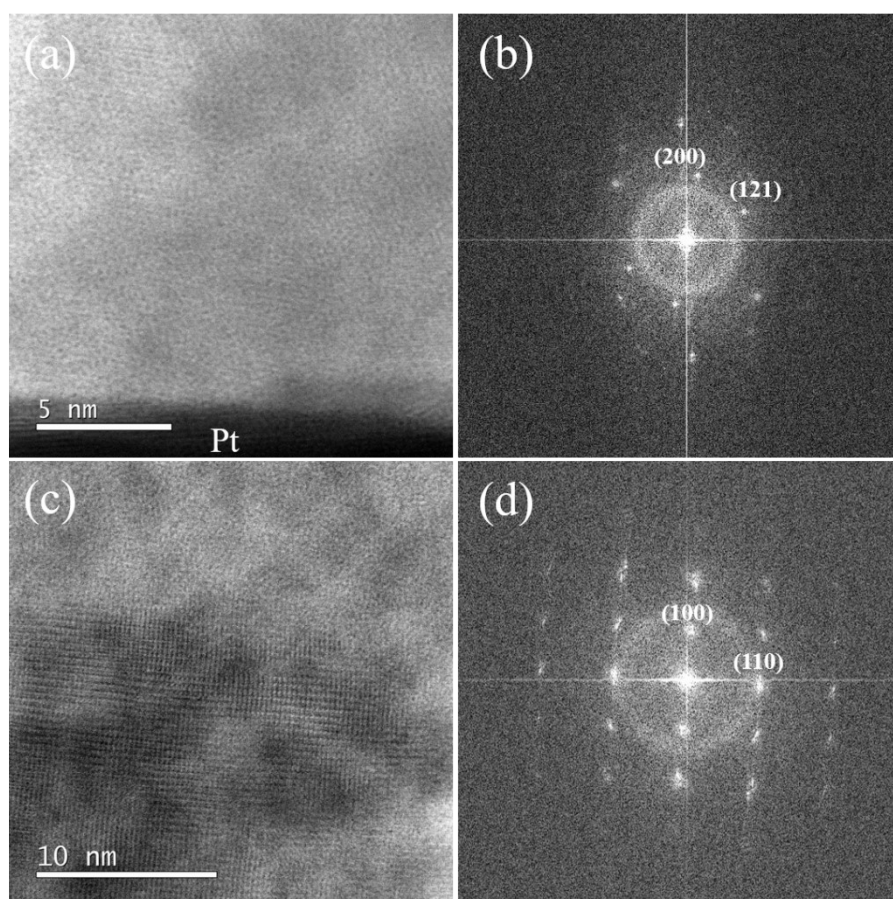


Figure S1. The HAADF image of PbO seeding layer (a) and 0.1BZN-0.9PT thin film (c). Magnification presentations through FFT patterns of the HAADF images (b) and (d), the FFT pattern correspond to (a) and (c).

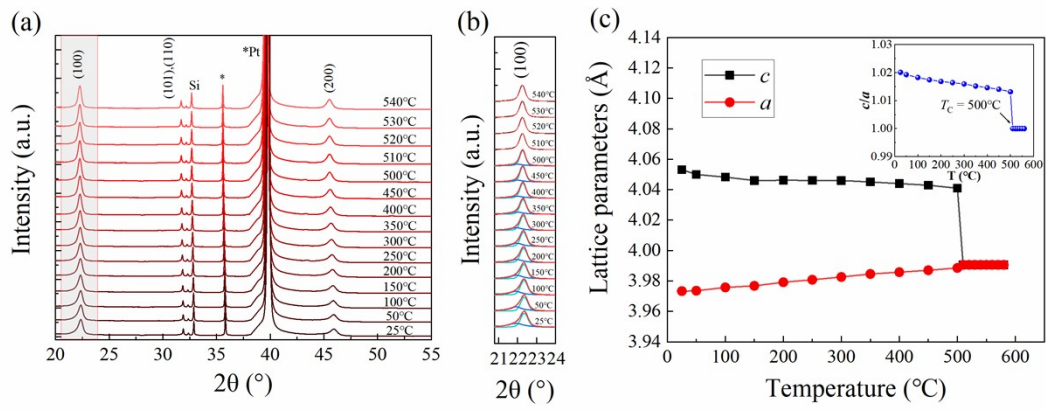


Figure S2. (a) Temperature dependence of XRD patterns of 0.1BZN-0.9PT thin films; (b) local amplification of (100) diffraction peaks and multiple peak fitting; and (c) temperature dependence of the lattice parameters of 0.1BZN-0.9PT thin films. The inset shows the temperature dependence of the c/a ratio. The error bars are too small to show.

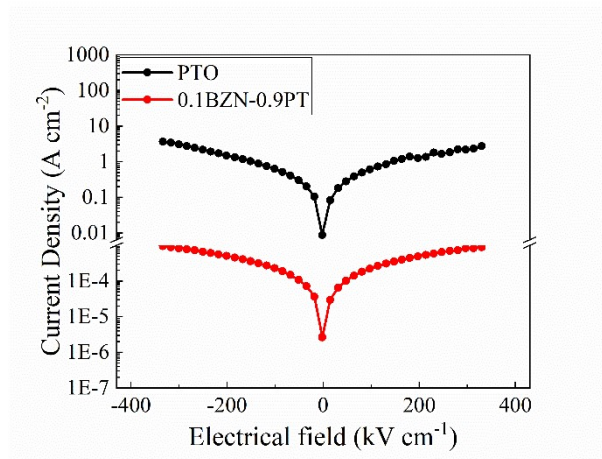


Figure S3. The leakage current density curves (J - E) of PbTiO_3 and 0.1BZN-0.9PT thin films at room temperature.

Table S1. Ferroelectric properties of typical BiMeO₃-PbTiO₃ thin films

| Composition | P_r ($\mu\text{C cm}^{-2}$) | T_C ($^{\circ}\text{C}$) | Reference |
|--|---------------------------------|------------------------------|------------------|
| 0.66PbTiO ₃ -0.34BiScO ₃ | 23 | 450 | [1] |
| 0.40PbTiO ₃ -0.60BiFeO ₃ | 50 | 565 | [2] |
| 0.80PbTiO ₃ -0.20Bi(Zn _{1/2} Zr _{1/2})O ₃ | 55 | — | [3] |
| 0.37PbTiO ₃ -0.63Bi(Mg _{1/2} Ti _{1/2})O ₃ | 24 | 415 | [4] |
| 0.90PbTiO ₃ -0.10Bi(Cu _{1/2} Ti _{1/2})O ₃ | 30 | — | [5] |
| 0.90PbTiO ₃ -0.10Bi(Cu _{1/2} Zr _{1/2})O ₃ | 49 | 480 | [6] |
| 0.90PbTiO₃-0.10Bi(Zn_{2/3}Nb_{1/3})O₃ | 87 | 468 | This work |

Reference

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