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Supplementary Materials: Strain-Mediated Magneto-Electric Effects in Coaxial Nanofibers of Y/W-Type Hexagonal Ferrites and Ferroelectrics

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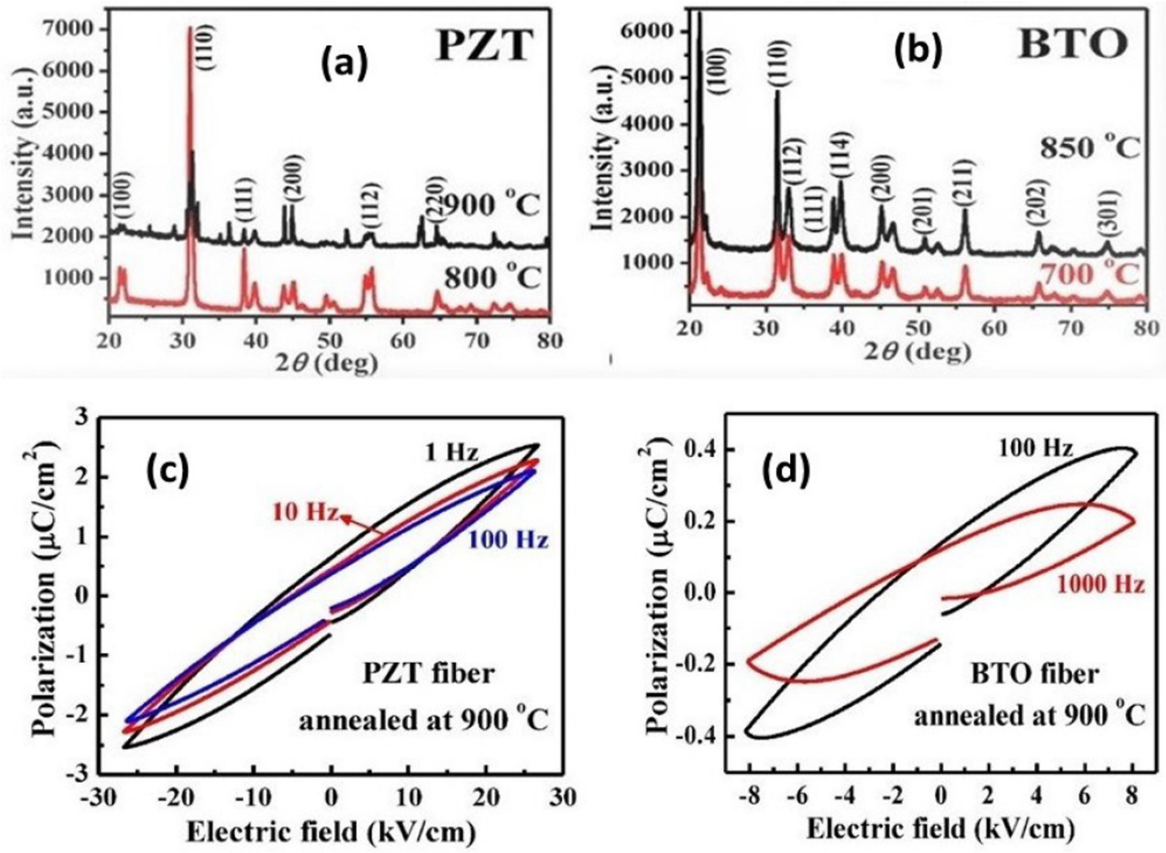

Figure S1. X-ray diffraction and P vs E for electrospunfibers of pure PZT and barium titanate and annealed at 900 °C.

PZT core Zn2Y shell 14kV, 900 °C

Zn2W core PZT shell 14kV, 900 °C

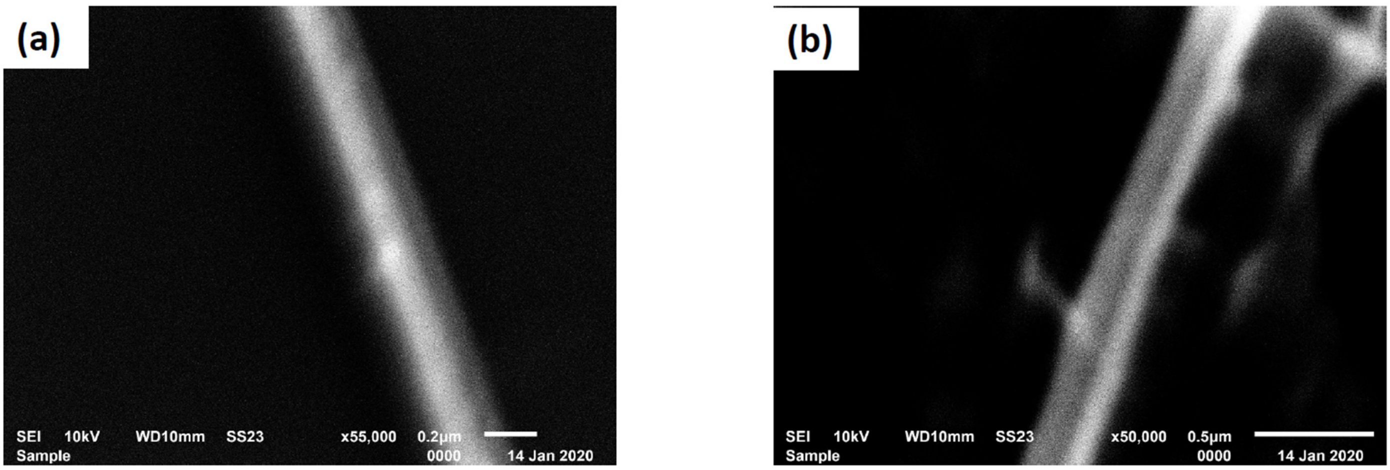

Figure S2. SEM images for fibers of (**a**) PZT core-Zn_2Y shell and (**b**) Zn_2W core-PZT shell.

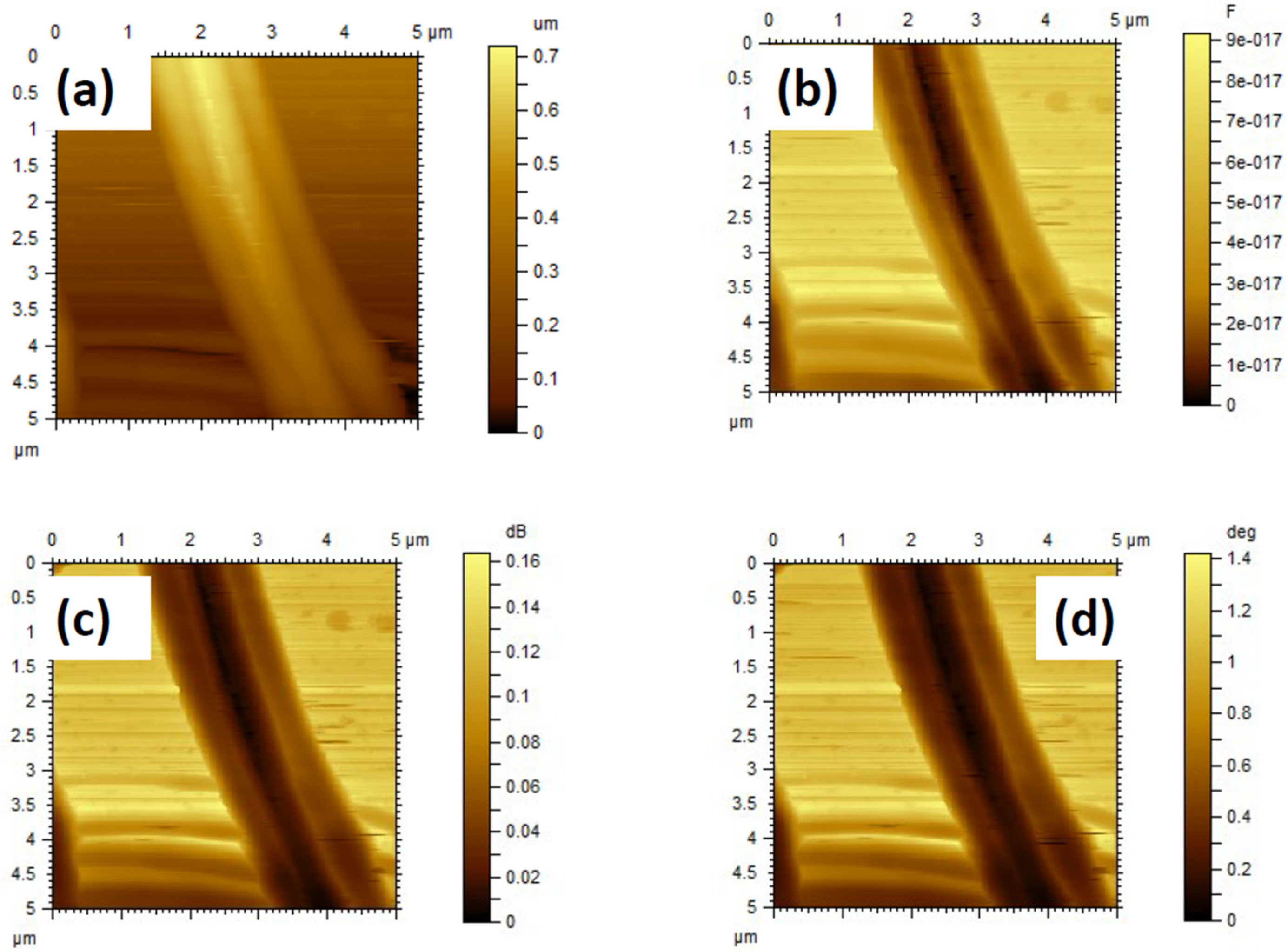

Figure S3. SMM images showing (**a**) topography, (**b**) capacitance, (**c**) S11 amplitude and (**d**) S11 phase at 15.6 GHz for fibers of BTO core and Co_2W shell.

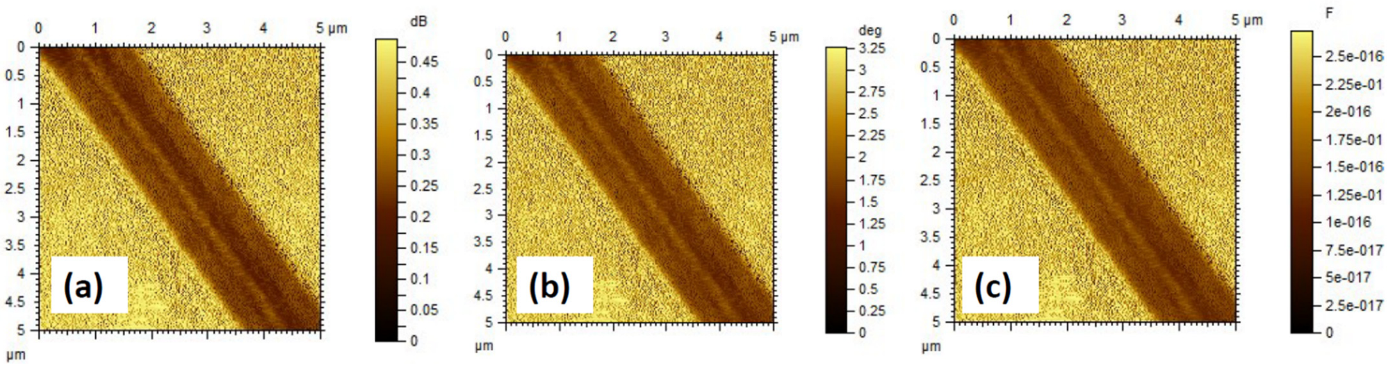

Figure S4. SMM images showing (**a**) topography, (**b**) S11 phase and © capacitance at 15.6 GHz for fibers of Co_2W core and PZT shell.

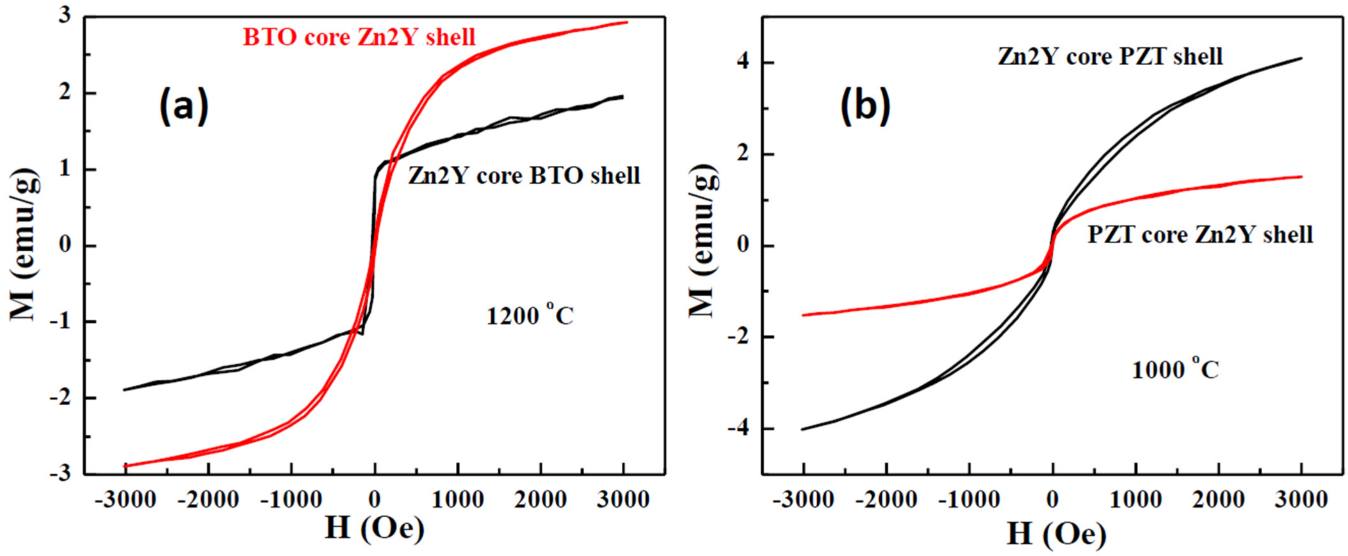

Figure S5. Room temperature magnetization M versus magnetic field H for (**a**) Zn_2Y-BTO fibers and (**b**) Zn_2Y-PZT fibers.

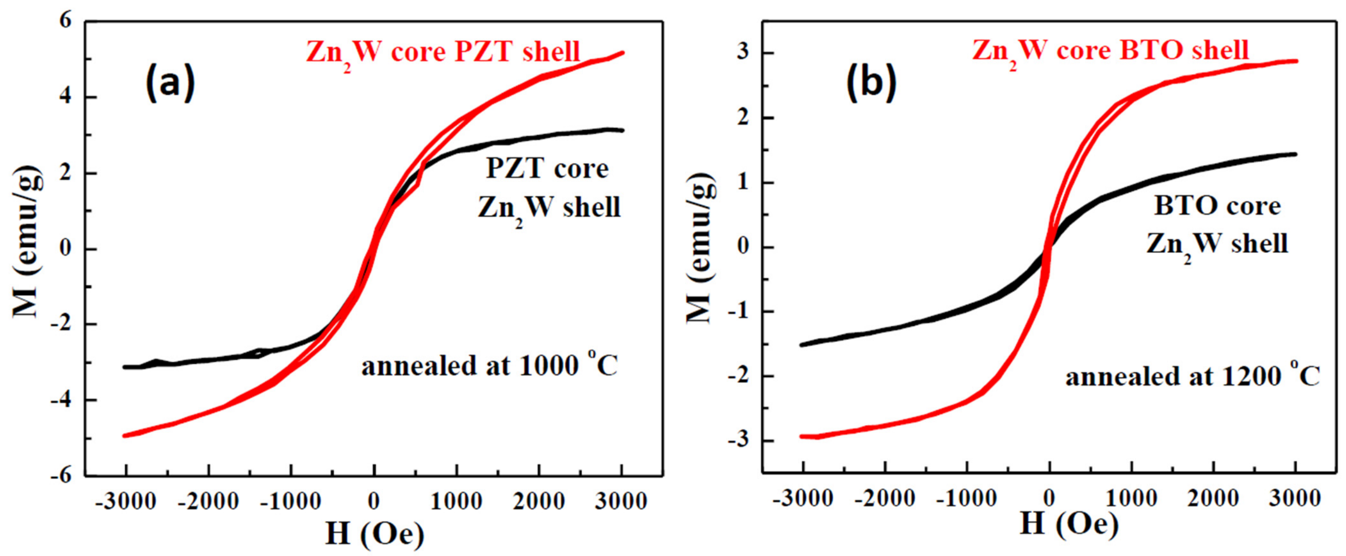

Figure S6. Room temperature magnetization M versus magnetic field H for (**a**) Zn_2W-PZT fibers and (**b**) Zn_2W-BTO fibers.

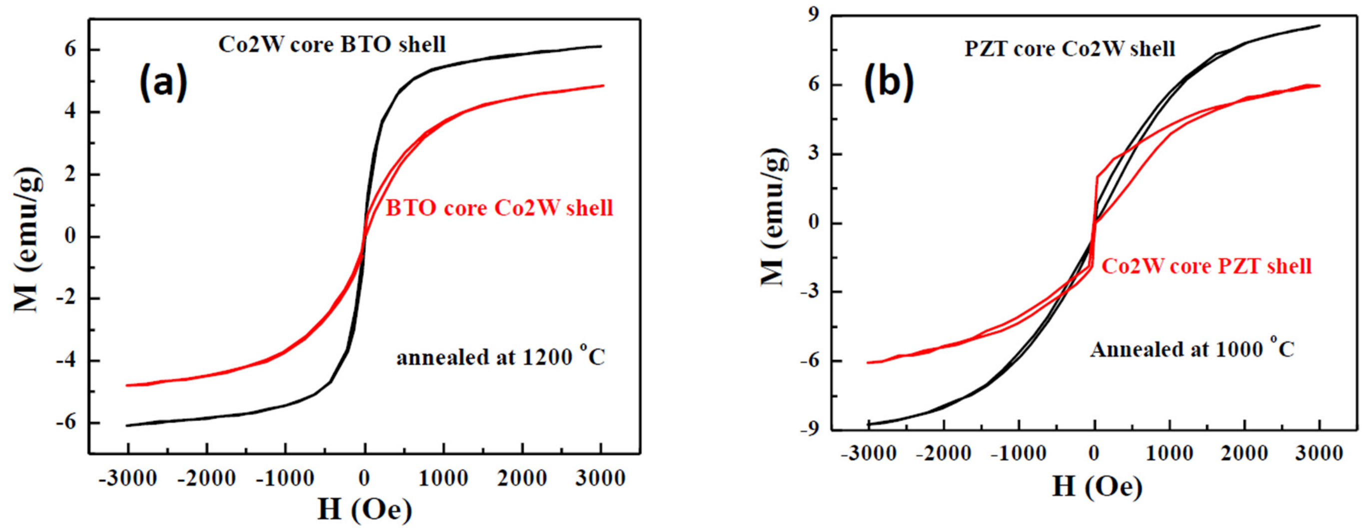

Figure S7. Room temperature magnetization M versus magnetic field H for (**a**) Co_2W-BTO fibers and (**b**) Co_2W-PZT fibers.

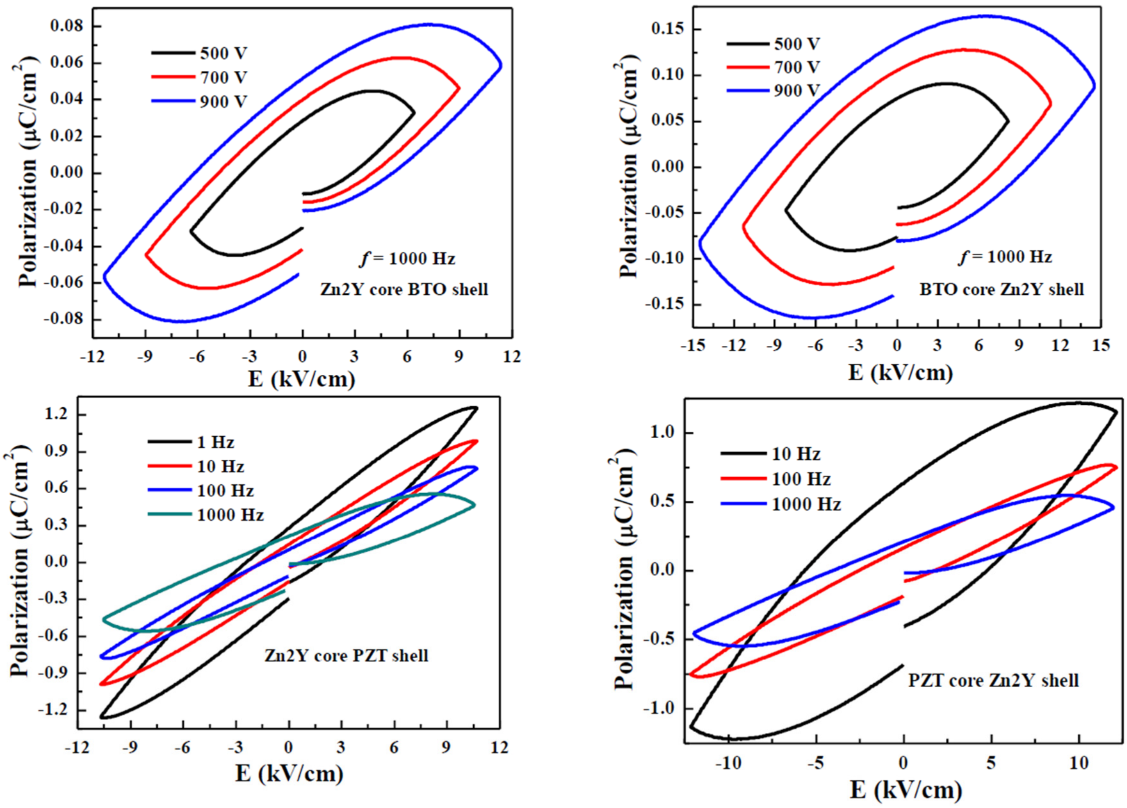

Figure S8. Polarization vs electric field for fibers of Zn2Y and BTO or PTZ.

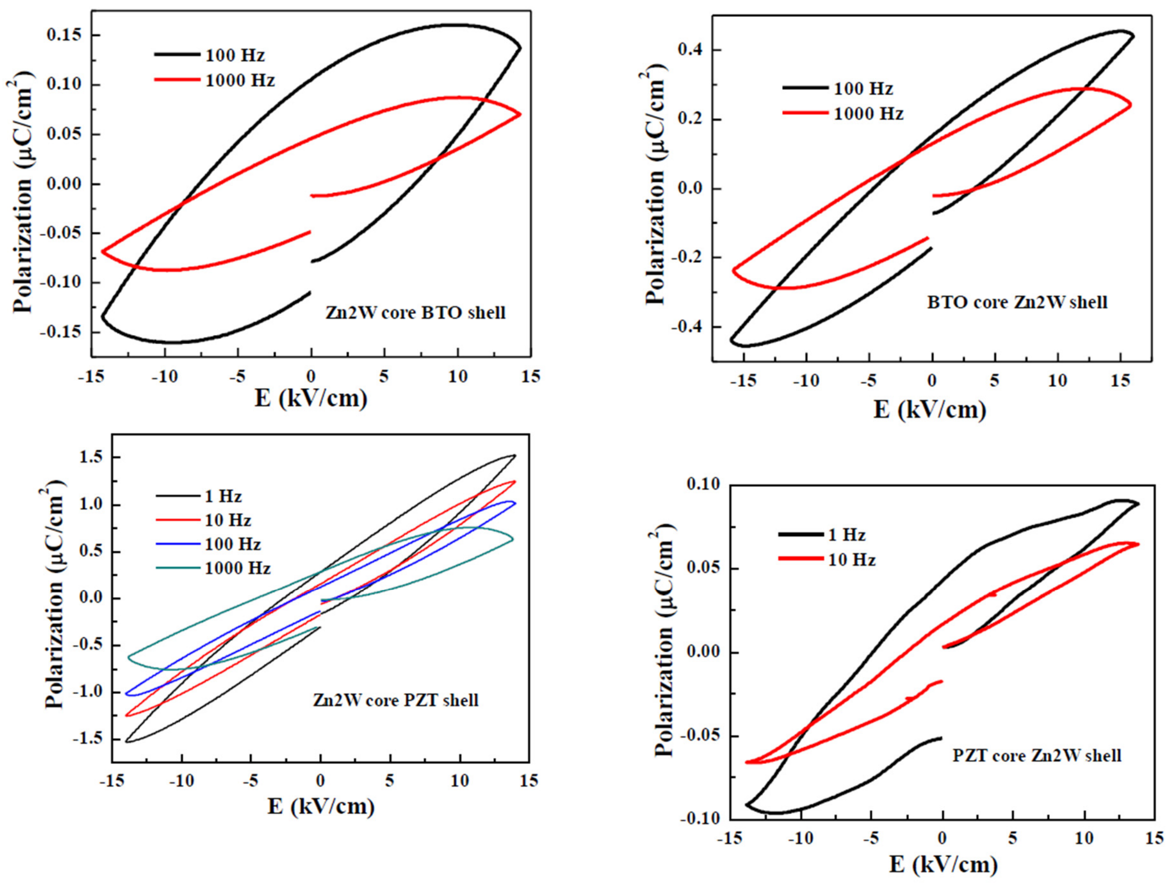

Figure S9. Polarization vs electric field for fibers of Zn2W and BTO or PTZ.

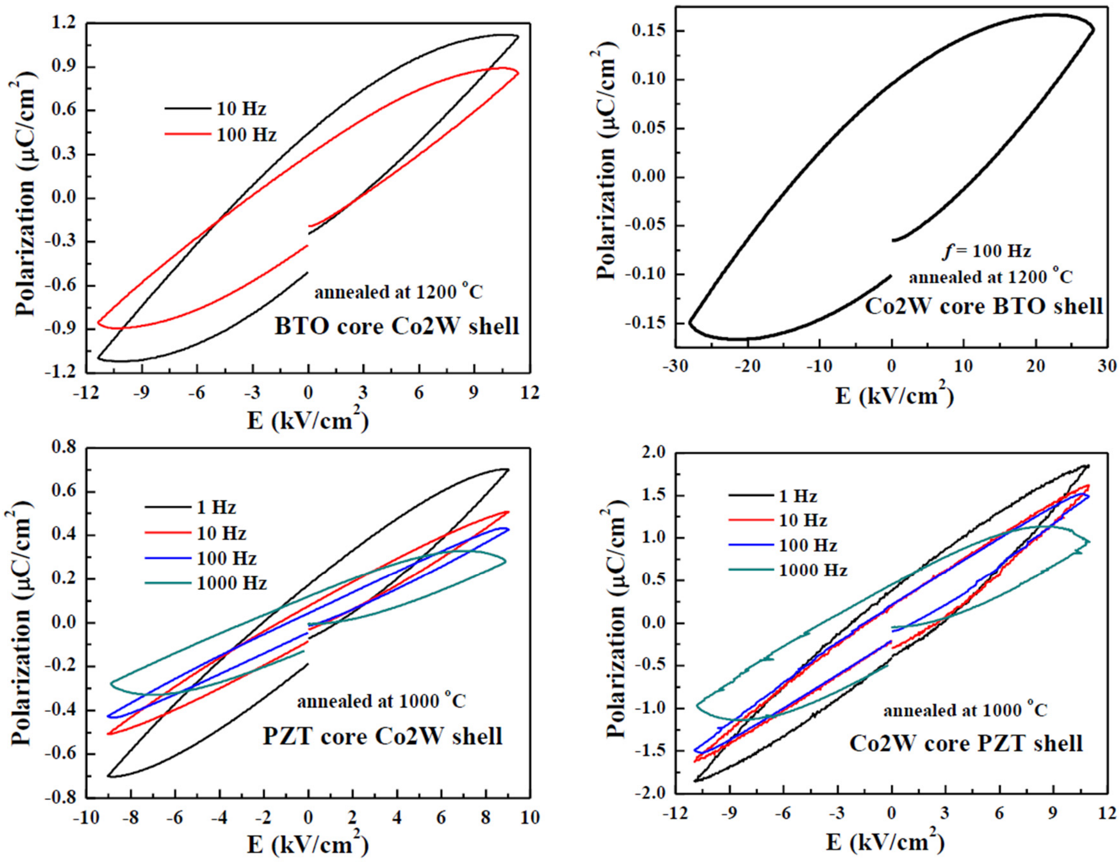

Figure S10. Polarization vs electric field for fibers of Co2W and BTO or PZT.

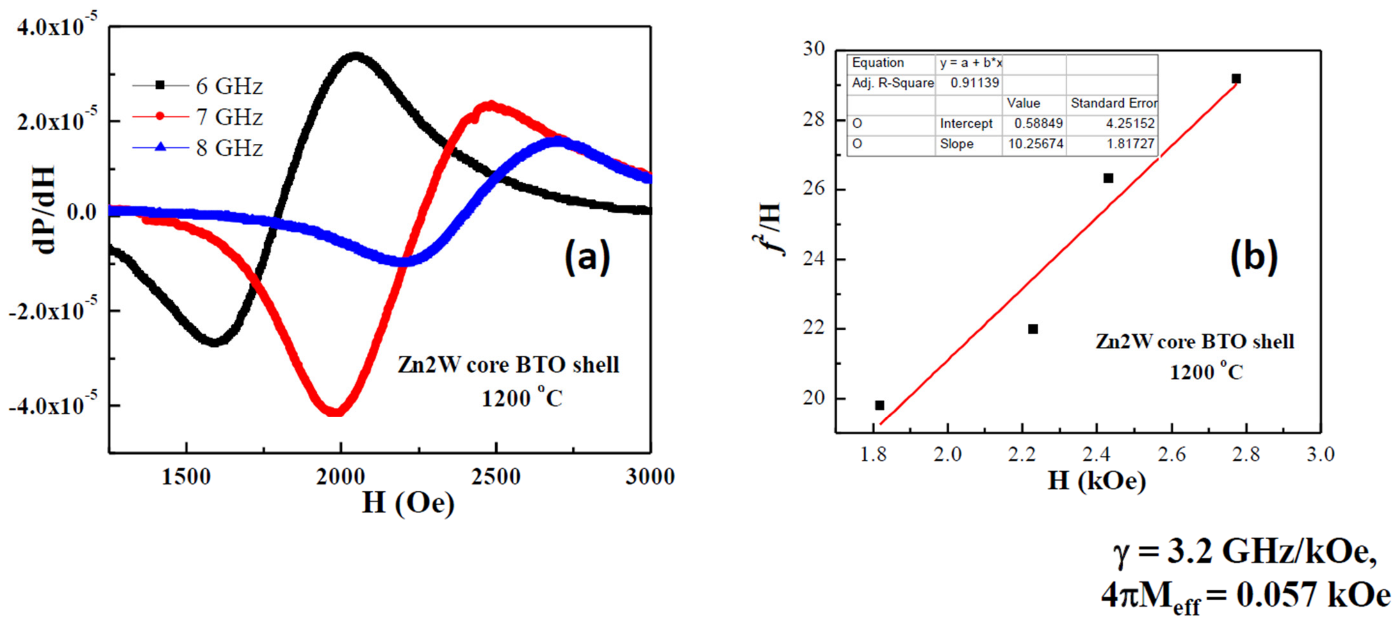

Figure S11. (**a**) Ferromagnetic resonance profiles for a disk of annealed fibers of Zn_2W and BTO. (**b**) Data and fitting of the resonance frequency and resonance condition in Eq.(2). Magnetic parameters obtained from the fitting are $\gamma = 3.2$ GHz/kOe and $4\pi M_{eff} = 0.057$ kOe.