Electronic Supplementary Material (ESI) for RSC Advances.

Supplementary materials

Structural transition and magnetic properties of Mn doped $Bi_{0.88}Sm_{0.12}FeO_3$ ceramics

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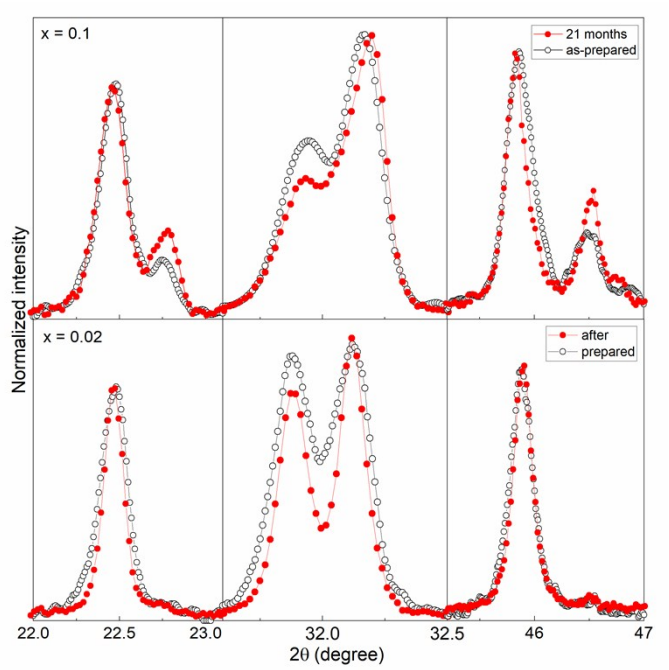

Figure S1. The comparison of XRD patterns of the as-prepared and after 21 months synthesis for $x = 0.02$ and 0.1 samples.

The change in relative intensity of the peaks at 2θ arounds 22.5, 32, and 46 confirm the isothermal structural transition from the *R3c* to *Pnam* phases.

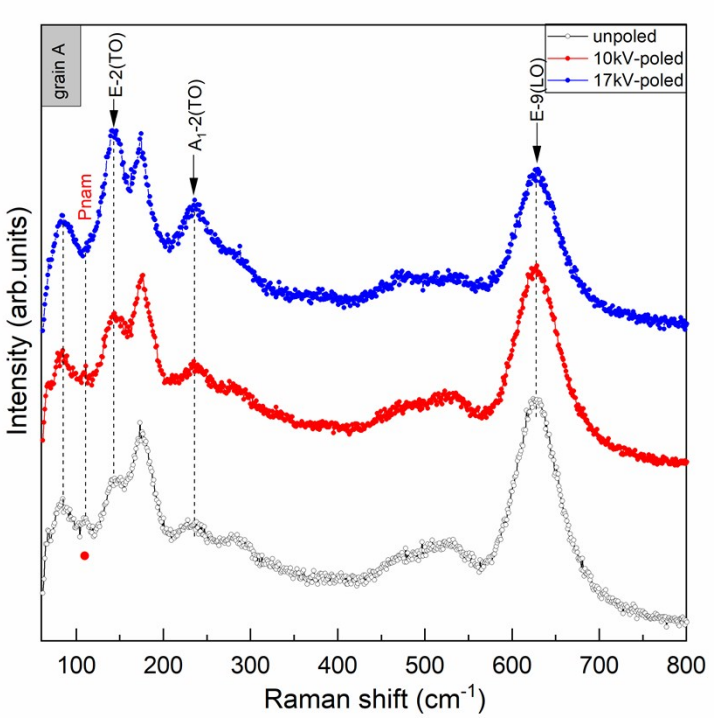

Figure S2. Raman spectra of sample $x = 0.1$ measured for single grain (grain-A) before and after poled in an electric field of 10 kV and 17 kV.

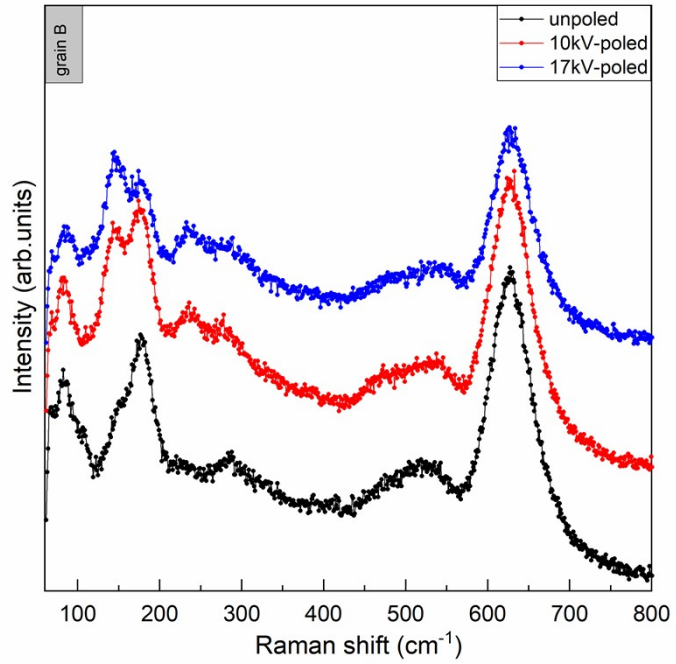

Figure S3. Raman spectra of sample $x = 0.1$ measured for single grain (grain-B) before and after poled in an electric field of 10 kV and 17 kV.

Figure S2, S3 shows the Raman spectra of sample $x = 0.1$ measured by Xpolar Raman 532 nm for different grain (grain A and B) before and after poled in an electric field of 10 kV and 17 kV. The E-2(TO), A_1-2(TO), and E-9(LO) modes are obviously changed their intensity in the grain A and B. The change in intensity of these modes are well confirmed the orthorhombic/rhombohedral phases switching.