Supporting Information

Broad-temperature-span and large electrocaloric effect in lead-free ceramics utilizing successive and metastable phase transitions

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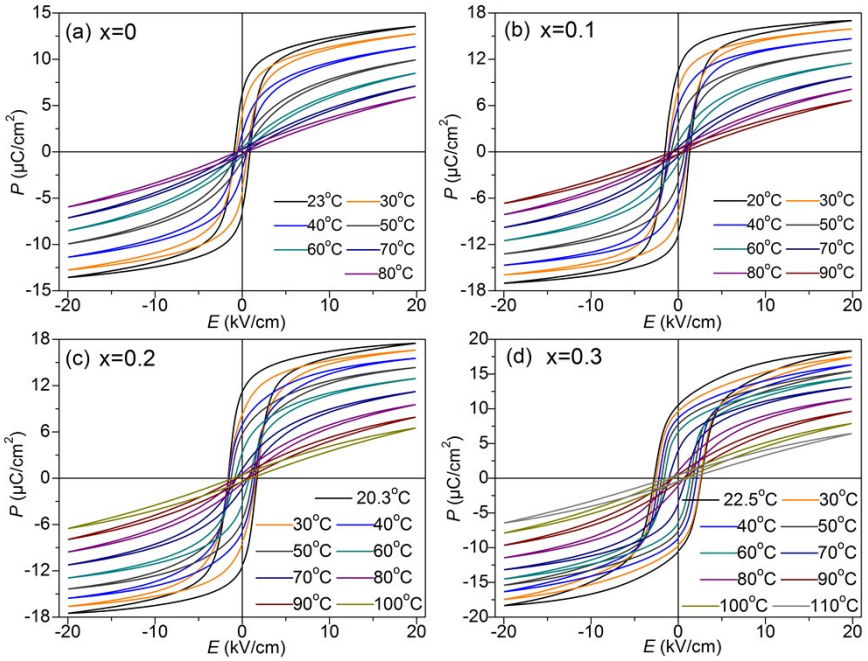

Fig. S1 Temperature-dependent ferroelectric hysteresis (*P*-*E*) loops with (a) *x*=0, (b) *x*=0.1, (c) *x*=0.2, and (d) *x*=0.3 measured at 1 Hz from room temperature to 80-110°C.

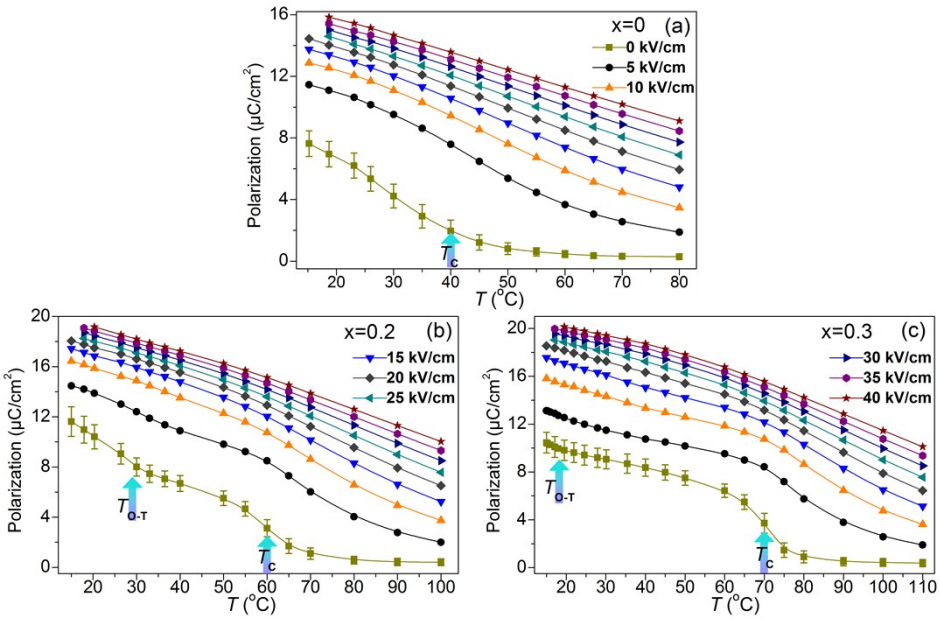

Fig. S2 Temperature-dependent polarization evolution (extracted from the maximum polarization in each *P*-*E* loops) under different electric field for the samples with (a) *x*=0, (b) *x*=0.2, and (c) *x*=0.3. The polarization at 0 kV/cm was obtained from the average value of remnant polarization in each *P*-*E* loops under various electric fields.