Supporting information

Impact of Oxygen Partial Pressure during Sintering on the

Electrocaloric Effect of Ba_{0.7}Sr_{0.3}TiO₃ Ceramics

Wei Liang^{a, †}, Xiang Niu^{a, †}, Xiaodong Jian^{a, *}, Zhan Zeng^a, Junying Lai^a, Ting Wang^c, Weiping Gong^c, WenHan Zeng^a Ying-Bang Yao^a, Tao Tao^a, Bo Liang^a and Sheng-Guo Lu^{a,b,*}

(^aGuangdong Provincial Research Center on Smart Materials and Energy Conversion Devices, ^aGuangdong Provincial Key Laboratory of Functional Soft Condensed Matter, School of Integrated Circuits and School of Materials and Energy, ^aGuangdong University of Technology, Guangzhou, 510006, China;

^bDongguan South China Design Innovation Institute, Building D-1, University Innovation City Area, Songshan Lake, Dongguan, 523808, China

^cGuangdong Provincial Key Laboratory of Electronic Functional Materials and Devices, Huizhou University, Huizhou 516001, Guangdong, China.)

† These authors contributed equally: Wei Liang and Xiang Niu.

*Thoes authors are corresponding authors.

S. G. Lu, Email: sglu@gdut.edu.cn.

X. D. Jian, *Email: jianxiaodong@gdut.edu.cn*

^{*} Electronic mail: sglu@gdut.edu.cn



Fig. S1 Temperature-dependent permittivity and dielectric loss at 100 Hz, 1 kHz, 10 kHz, 100 kHz and 1 MHz of Ba_{0.7}Sr_{0.3}TiO₃ bulks sintered under different oxygen pressure conditions.



Fig. S2 (a-d) Leakage Current of Ba_{0.7}Sr_{0.3}TiO₃ bulks sintered under different oxygen pressure conditions measured at 30 °C under electric fields of 1, 2, 3, 4 MV/m; The inset of each panel shows the leakage current value.



Fig. S3 (a-f) P-E hysteresis loop of $Ba_{0.7}Sr_{0.3}TiO_3$ bulks sintered under different oxygen pressure conditions at various temperature.