

Supporting Information

Giant Negative Electrocaloric Effect in Eu-doped PbZrO₃ Thin Films

Mao Ye,^{a,b} Tao Li,^{a,b,c} Qiu Sun,^d Zhikai Liu,^d Biaolin Peng,^{a,b,c} Chuanwei Huang,^a Peng Lin,^a

Shanming Ke,^{*a} Xierong Zeng,^a Xiang Peng,^b Lang Chen,^e and Haitao Huang^{*c}

* Corresponding author: smke@szu.edu.cn, and aphuang@polyu.edu.hk

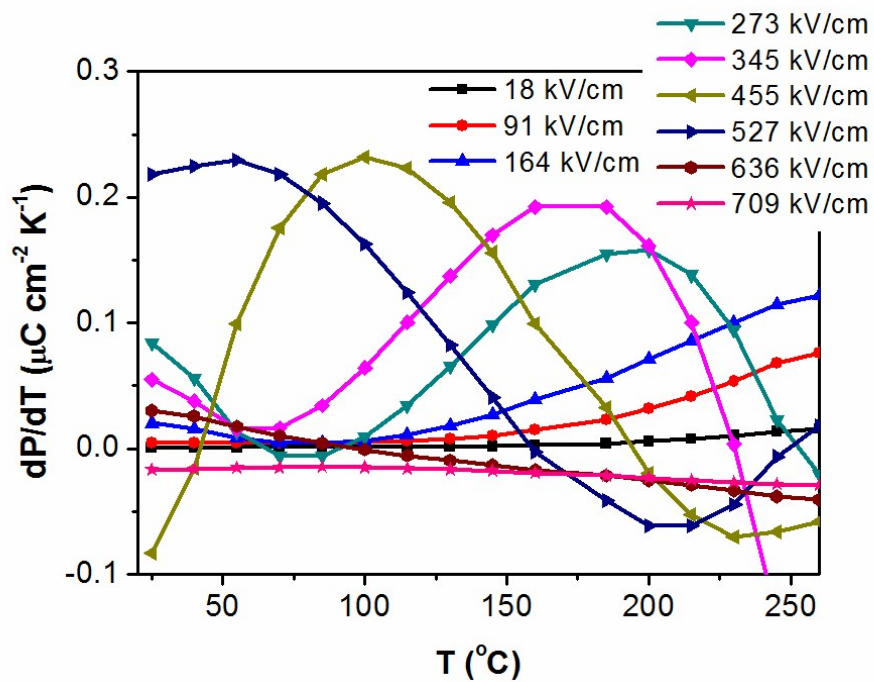


Figure S1. Pyroelectric coefficient (dP/dT) as a function of temperature for electric field

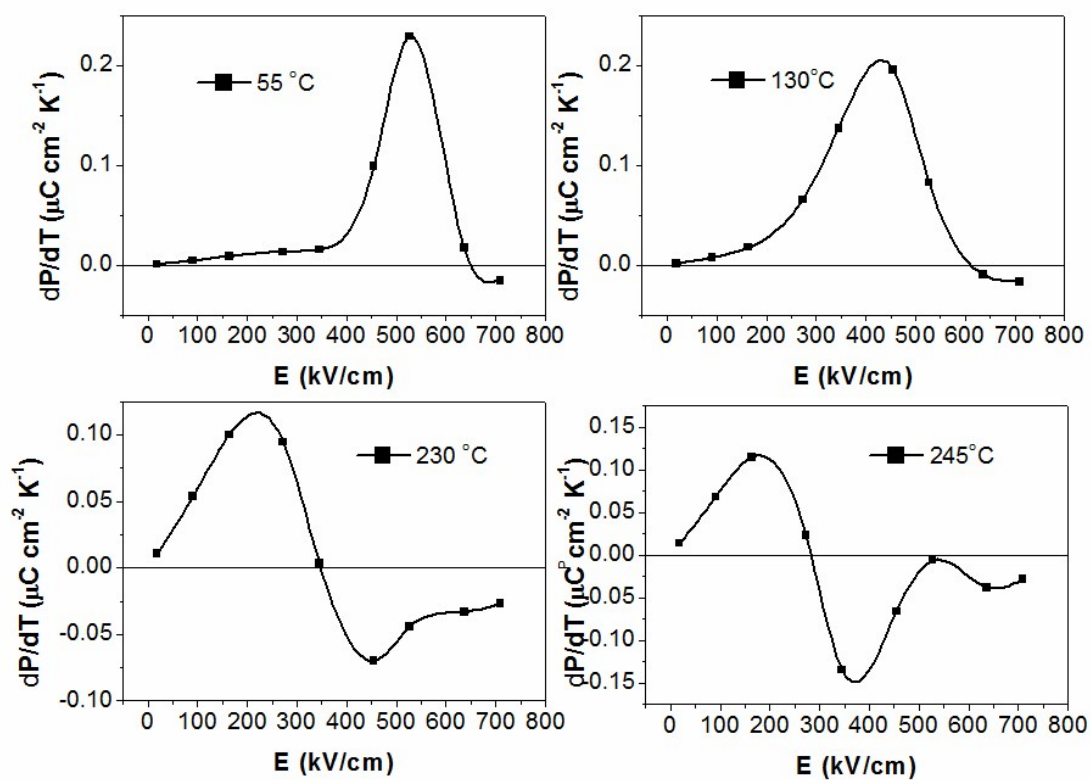


Figure S2. Pyroelectric coefficient (dP/dT) as a function of electric field for temperature.

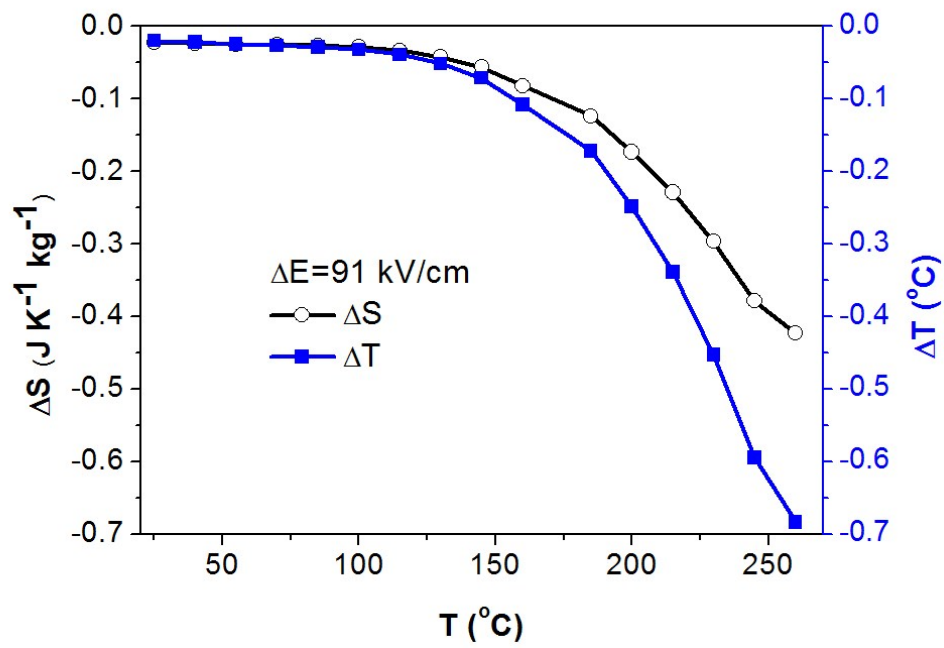


Figure S3. ΔS and ΔT under the applied field of $\Delta E = E_2 - E_1 = 91 \text{ kV cm}^{-1}$.

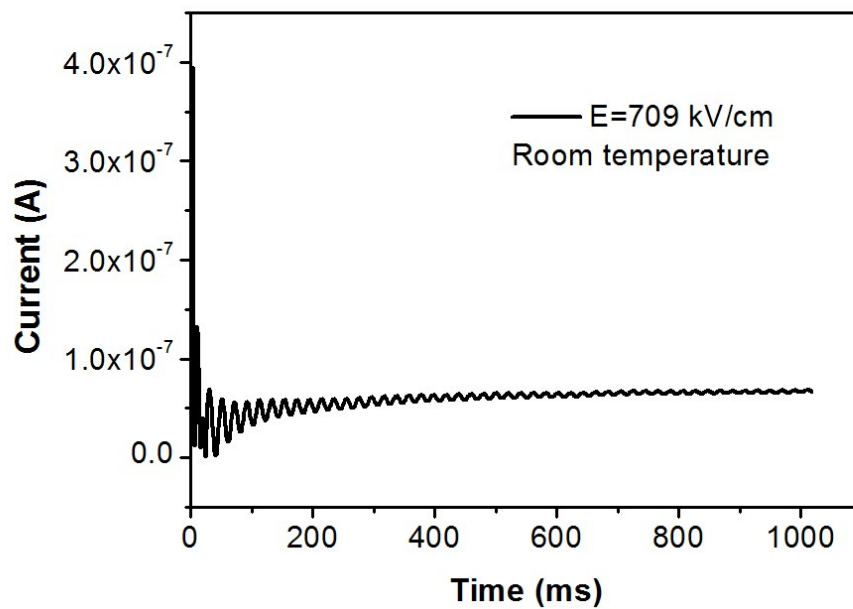


Figure S4. Leakage current $I(t)$ in Eu doped PZ thin film at room temperature.