Electronic Supplementary Material (ESI) for Nanoscale.

Large Dielectric Switch Effect Induced by An Order-Disorder Transformation in Cyclopropylamine Perchlorate Crystal

Electronic supplementary information

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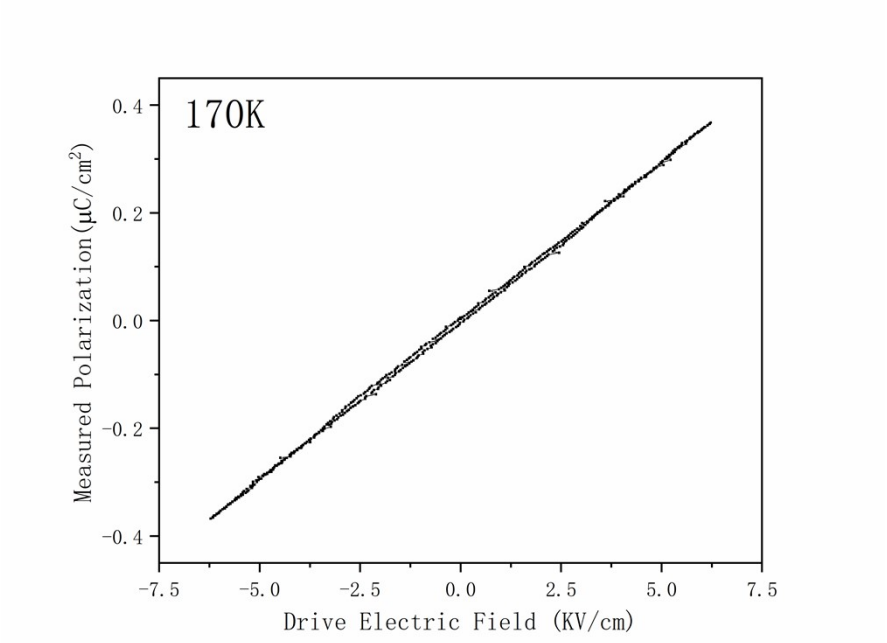

Fig. S1 The polarization vs electric field (P-E) of the CPA-ClO_4 poly-crystalline pressed pellets at 170K(LTP).

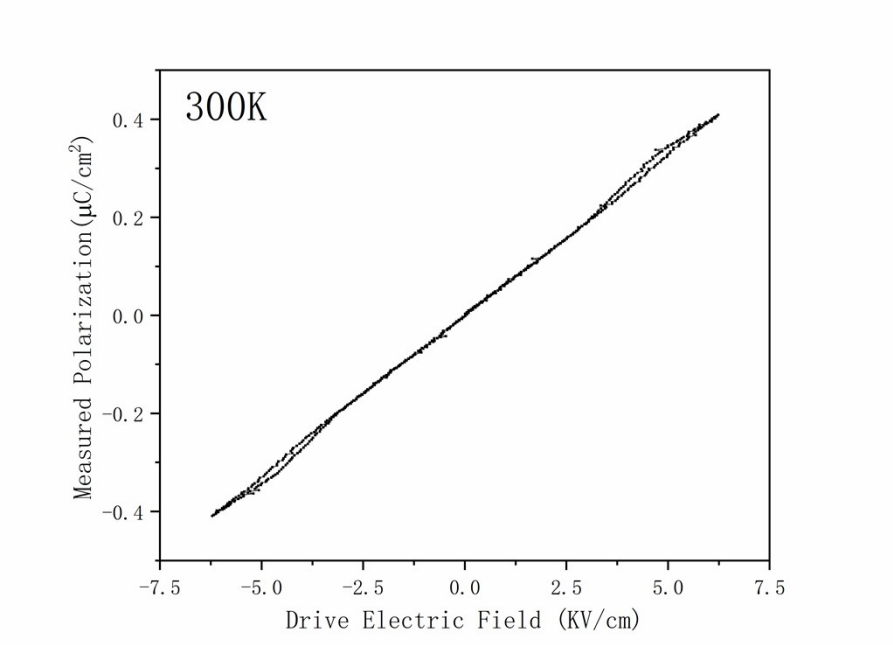

Fig. S2 The polarization vs electric field (P-E) of the CPA-ClO_4 poly-crystalline pressed pellets at 300K(HTP).

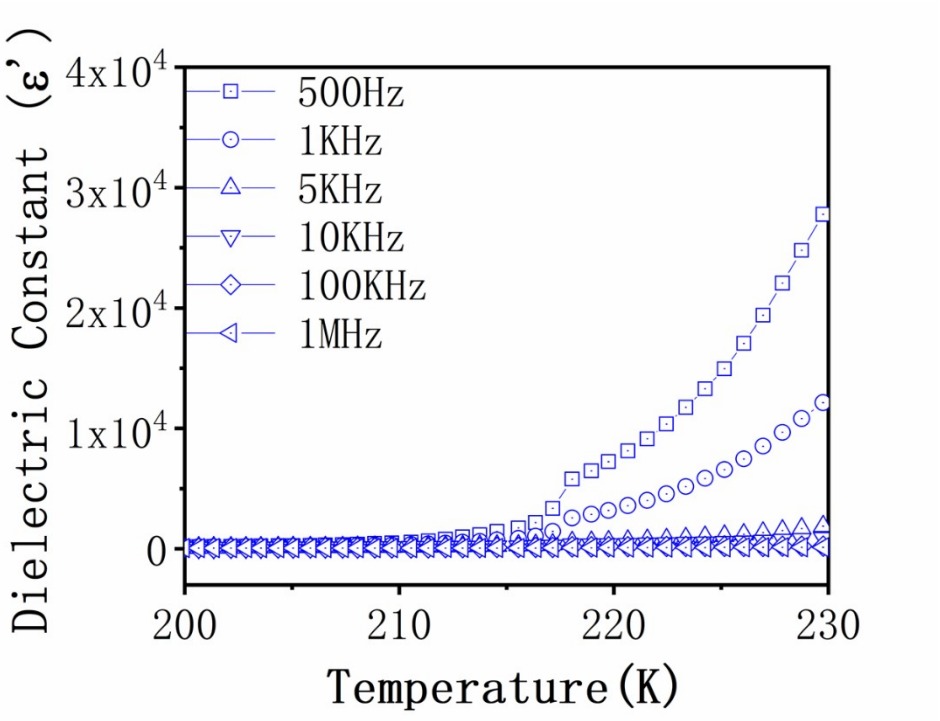

Fig. S3 The real part of dielectric constant of the CPA-ClO_4 polycrystal pressed pellets during the cooling process with linear ordinate.

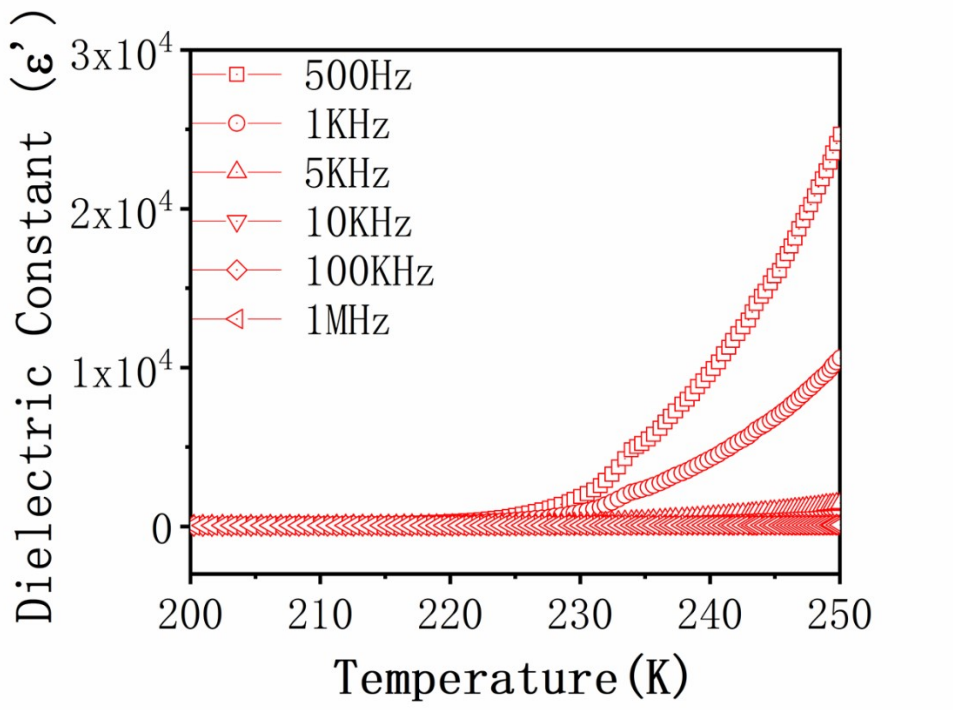

Fig. S4 The real part of dielectric constant of the CPA-ClO_4 polycrystal pressed pellets during the heating process with linear ordinate.

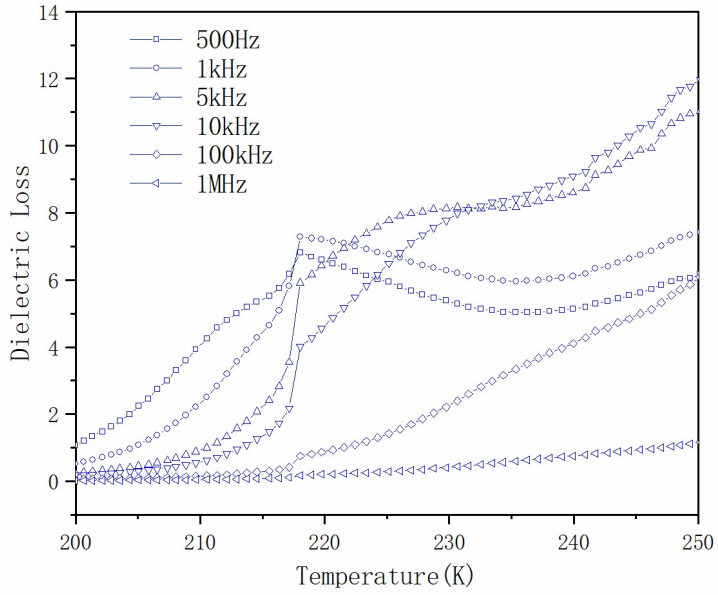

Fig. S5 The dielectric loss of the CPA-ClO_4 polycrystal pressed pellets during the cooling process.

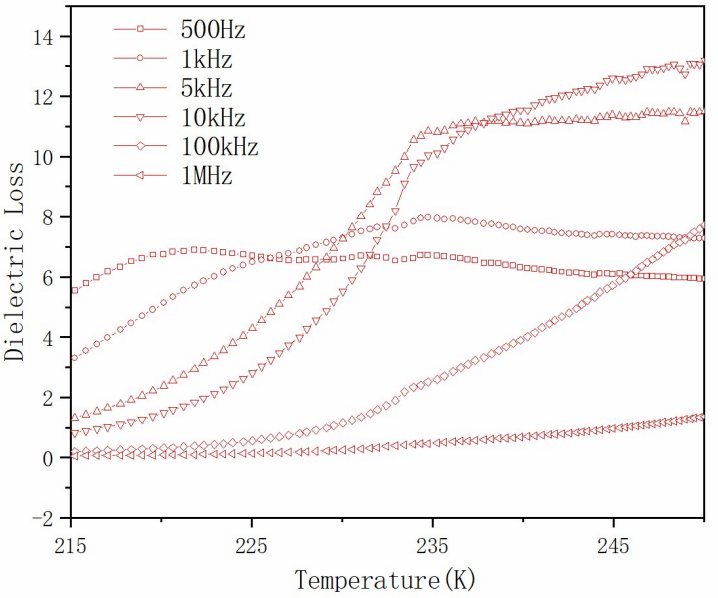

Fig. S6 The dielectric loss of the CPA-ClO_4 polycrystal pressed pellets during the heating process.

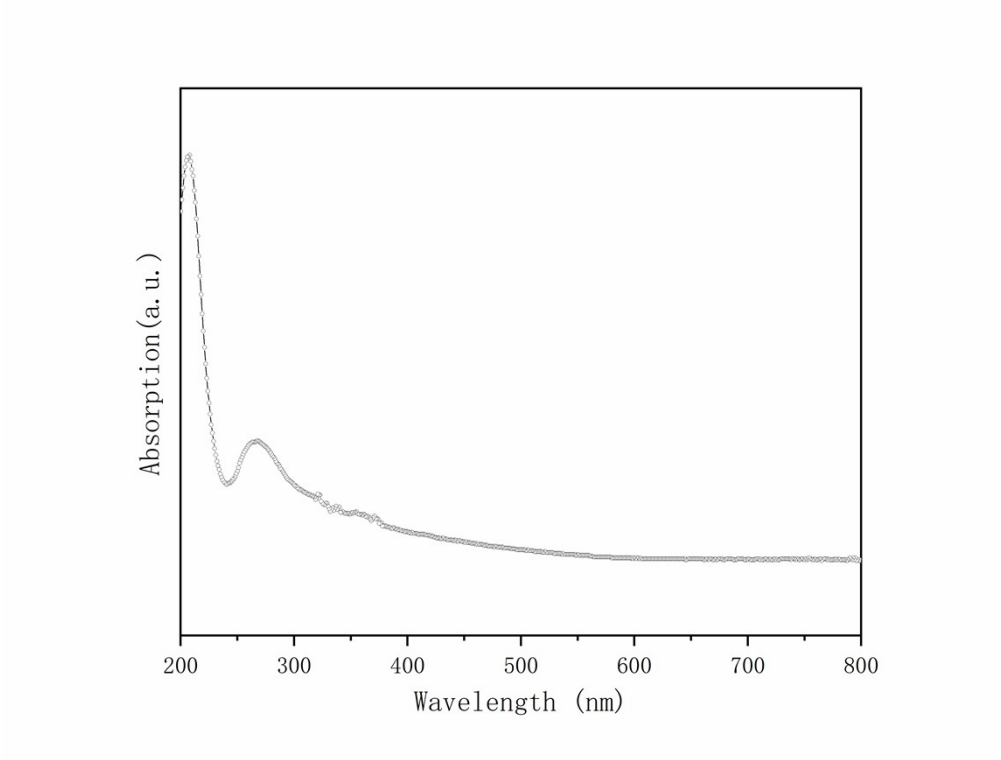

Fig. S7 The UV–visible absorption spectroscopy of CPA-ClO_4 polycrystal.

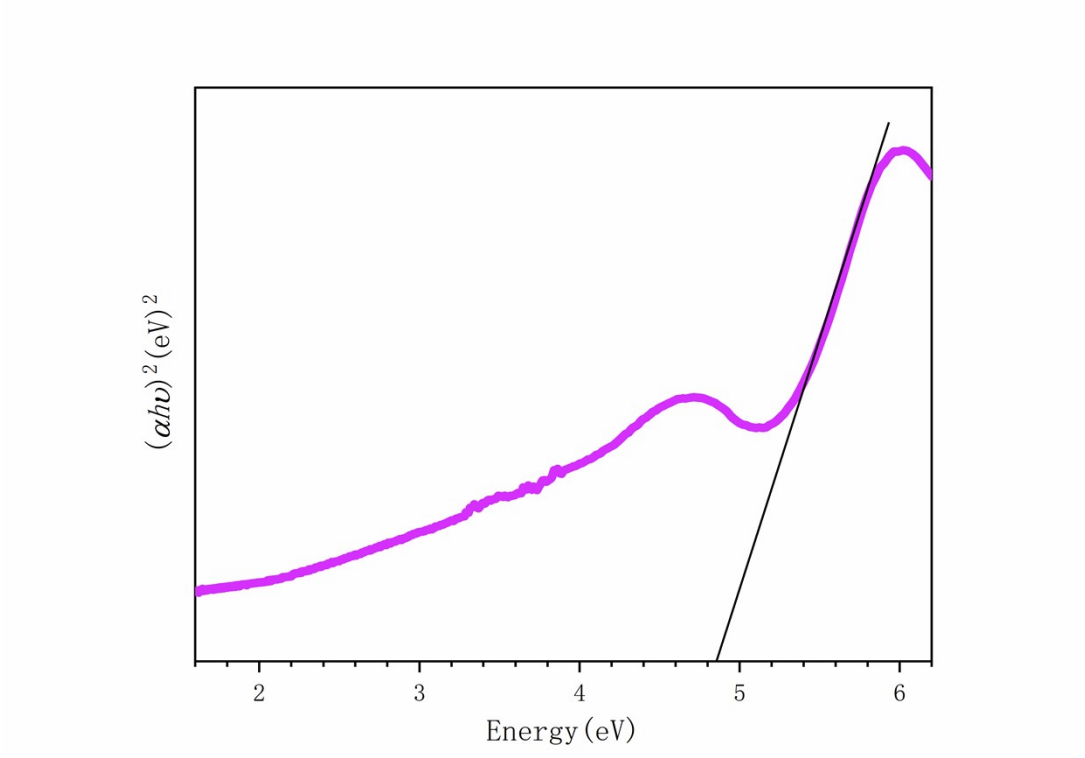

Fig. S8 $(\alpha h\nu)^{1/n}$ vs photon energy calculated by the Tauc's rule: $\alpha h\nu = A(h\nu - E_g)^n$, (n = 2 for indirect band-gap, n = 1/2 for direct band-gap), where α, ν, A, and E_g are absorption coefficient, light frequency, proportionality constant and band gap energy, respectively.

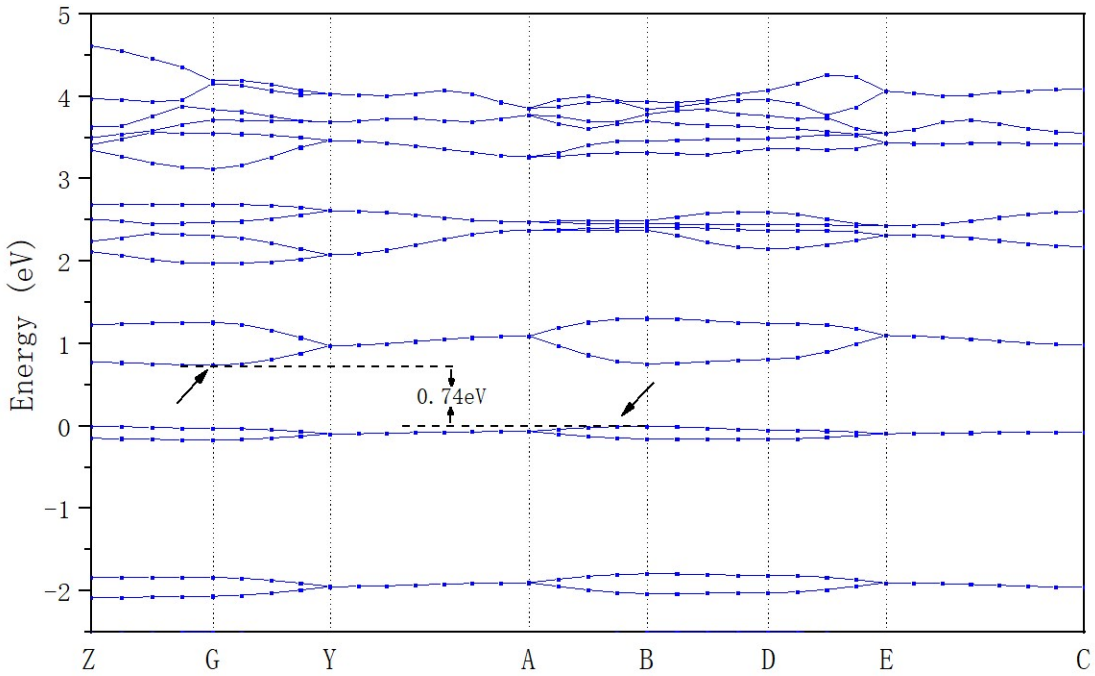

Fig. S9 The calculated band-gap of the CPA-ClO_4 crystal based on the structure at 195K.