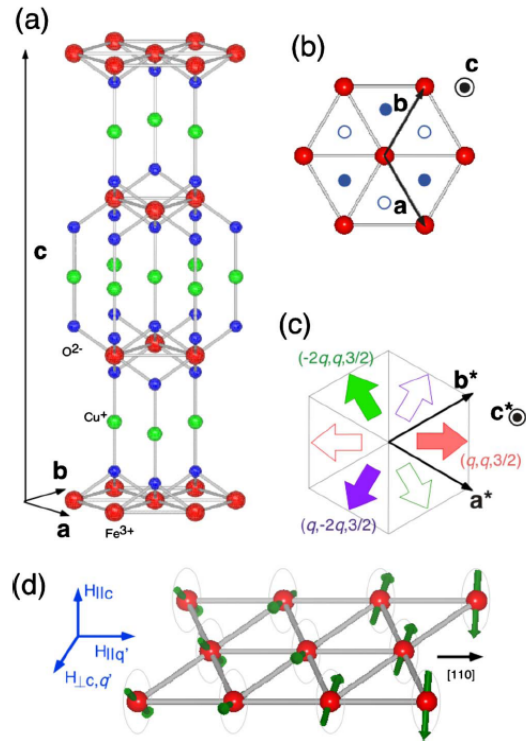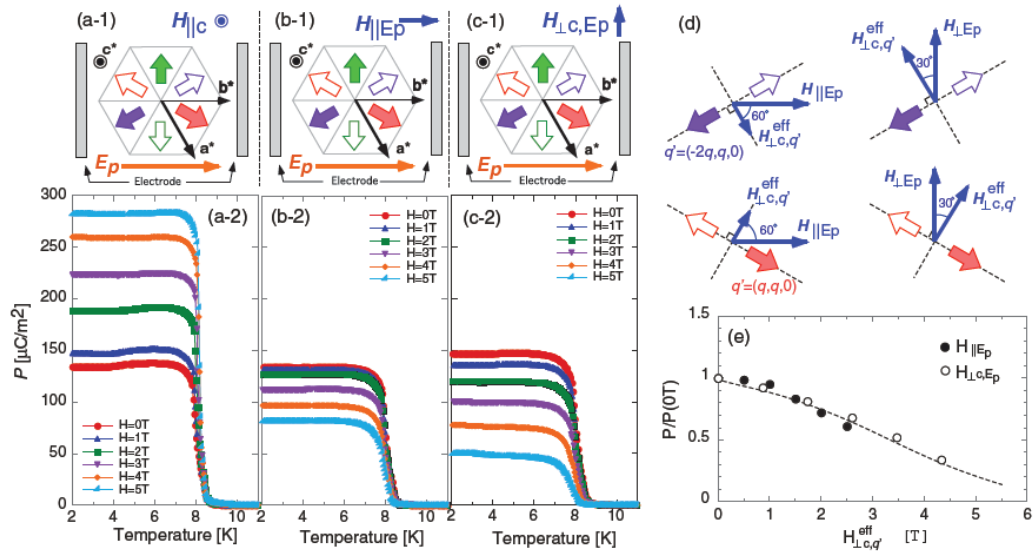# Ferroelectricity in multiferroic CuFeO2:

Crystal structure of CuFeO$_2$. (b) The definitions of the hexagonal basis and the arrangements of the O^{2-} ions above (open blue circles) and below (filled blue circles) a Fe^{3+} triangular lattice layer. (c) Schematic drawing of the q' vectors of the three q domains and the reciprocal-lattice basis. (d) Illustration of the magnetic structure in the FE-ICM phase and the directions of $H_{\|c}$, $H_{\|q'}$, and $H_{\perp c,q'}$.

[(a-1), (b-1), and (c-1)] The relationships between the applied magnetic fields and q' vectors for (a-1) $H_{\|c}$, (b-1) $H_{\|E_p}$, and (c-1) $H_{\perp c,E_p}$. The magnetic field dependence of the temperature variations in P under (a-2) $H_{\|c}$, (b-2) $H_{\|E_p}$, and (c-2) $H_{\perp c,E_p}$. (d) The definition of the $H_{\perp c,E_p}^{eff}$ for the in-plane magnetic fields of $H_{\|E_p}$ and $H_{\perp c,E_p}$. (e) The $H_{\perp c,E_p}^{eff}$ dependences of P at 2.0 K normalized to the value of P in zero field. The dashed line is the guide to eyes.