



**(a)** Current density versus voltage (J-V) curve and **(b)** polarization versus voltage (P-V) hysteresis loop of  $\text{Hf}_{0.25}\text{Zr}_{0.75}\text{O}_2$  capacitor, measured through dynamic hysteresis measurement (DHM) method with 3.2 V, 1 kHz triangular pulses. **(c)** J-V curve, **(d)** P-V hysteresis loop of  $\text{Hf}_{0.25}\text{Zr}_{0.75}\text{O}_2/\text{Al}_2\text{O}_3$  bilayer capacitor, measured through positive up negative down (PUND) method with 9.2 V, 1 kHz triangular pulses.