

Support Information

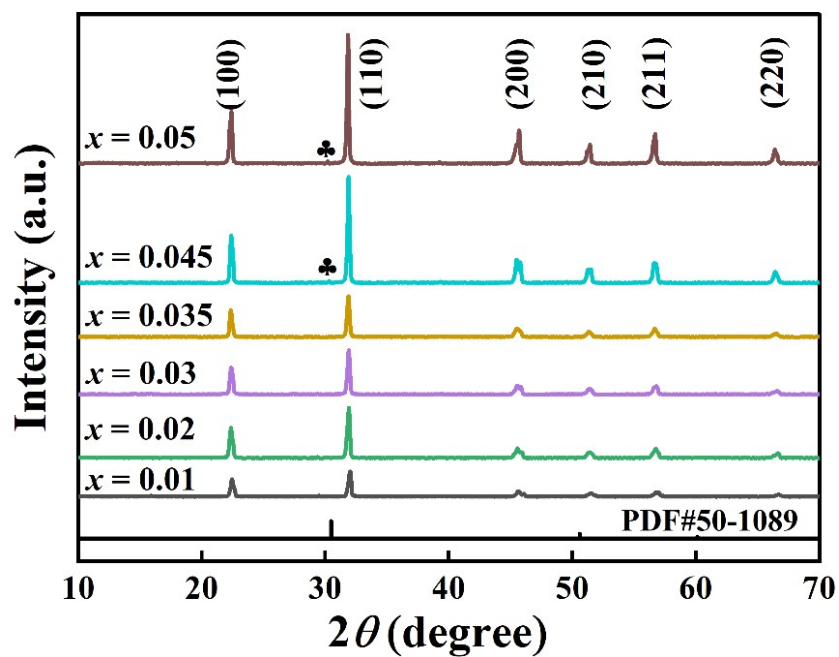


Fig. S1 The XRD patterns of the $\text{ZrO}_2/(1-x)\text{KNNS}-x\text{BNZ}$ ceramics with different x contents: $x = 0.01$, $x = 0.02$, $x = 0.03$, $x = 0.035$, $x = 0.045$ and $x = 0.05$.

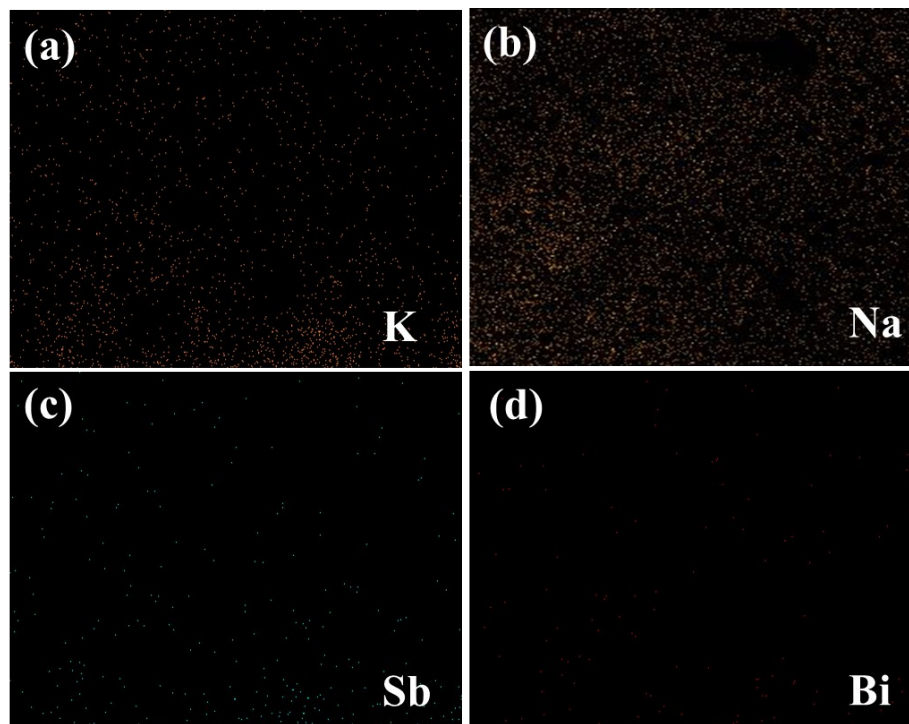


Fig. S2 Corresponding element distribution mapping of $x = 0.04$ ceramics.

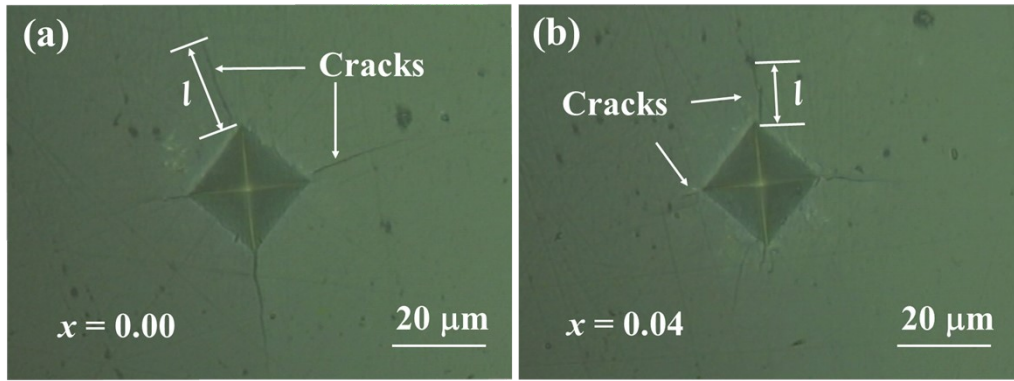


Fig. S3 (a-b) The Vickers indentation and cracks of (1-x)KNNS-xBNZ ceramics with $x = 0.00$ and $x = 0.04$.

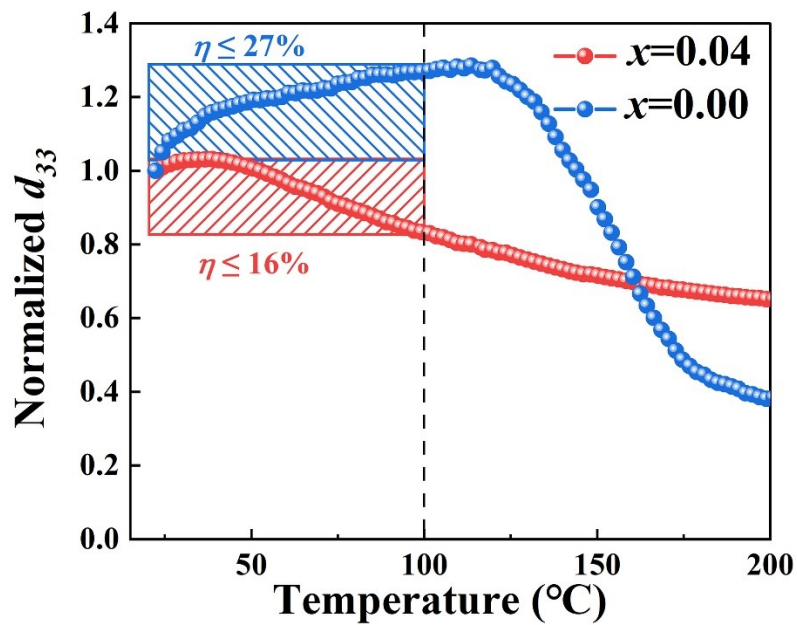


Fig. S4 The normalized *in situ* d_{33} as a function of the temperature for $x = 0.00$ and $x = 0.04$ samples.

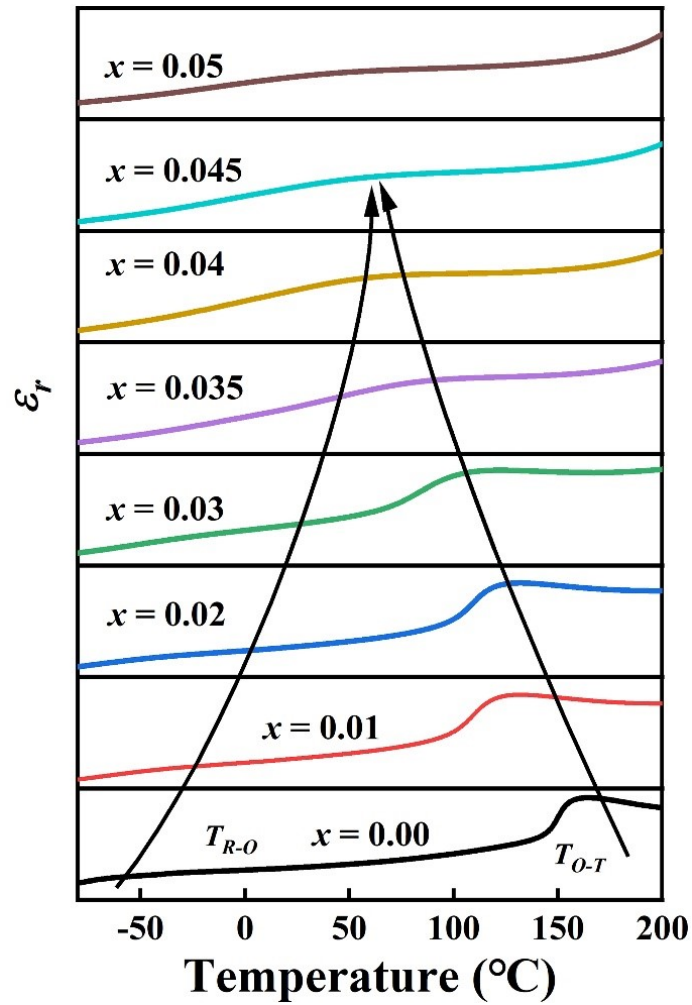


Fig. S5 The ϵ_r - T curves of $(1-x)\text{KNNs}-x\text{BNZ}$ ceramics measured between -80 - 200 °C.

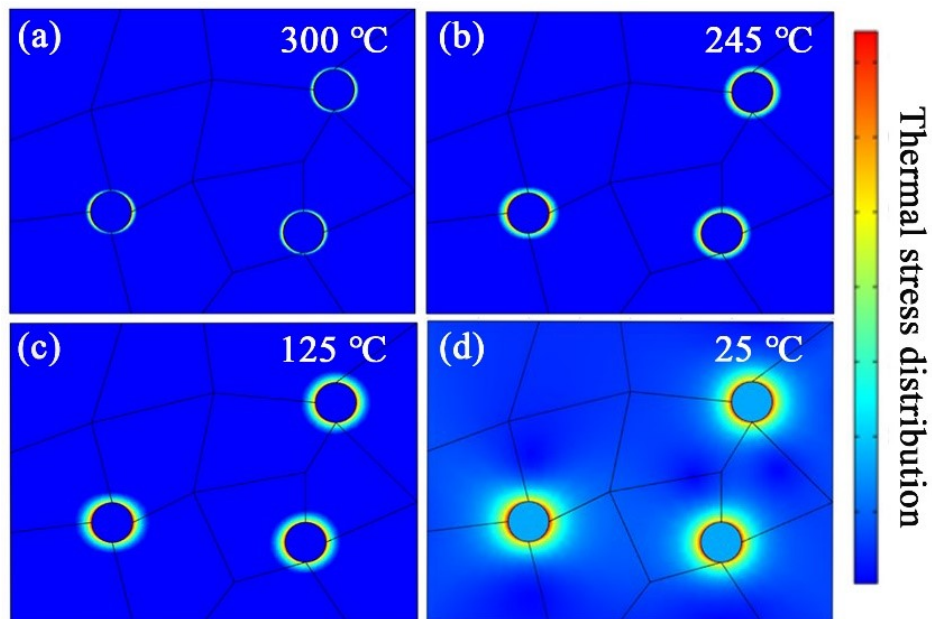


Fig. S6 The stress distribution of the $x = 0.04$ sample between the KNN-based ceramics and ZrO_2 at different temperature.

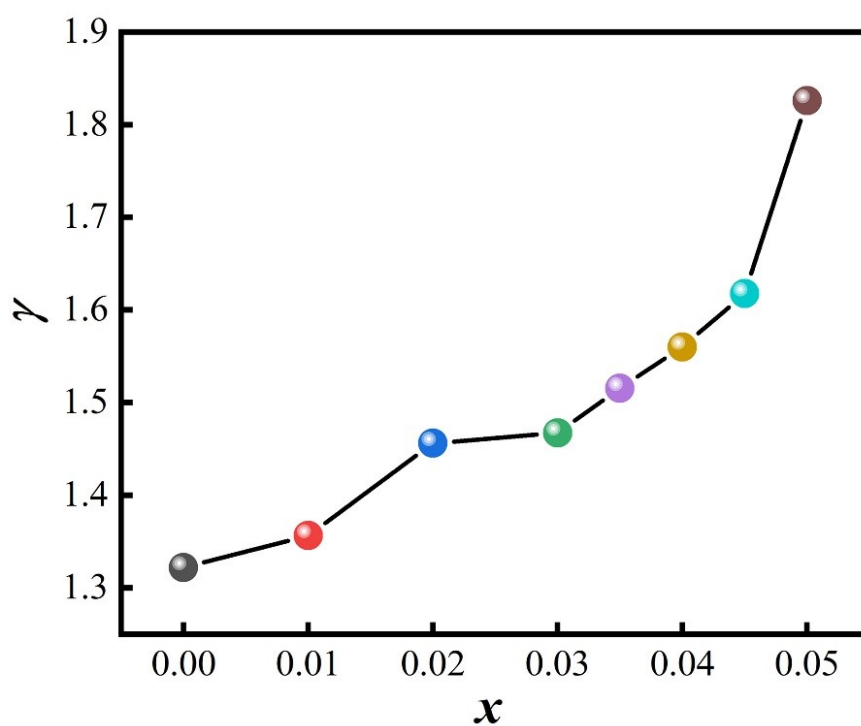


Fig. S7 The diffusion factor γ as a function of x .

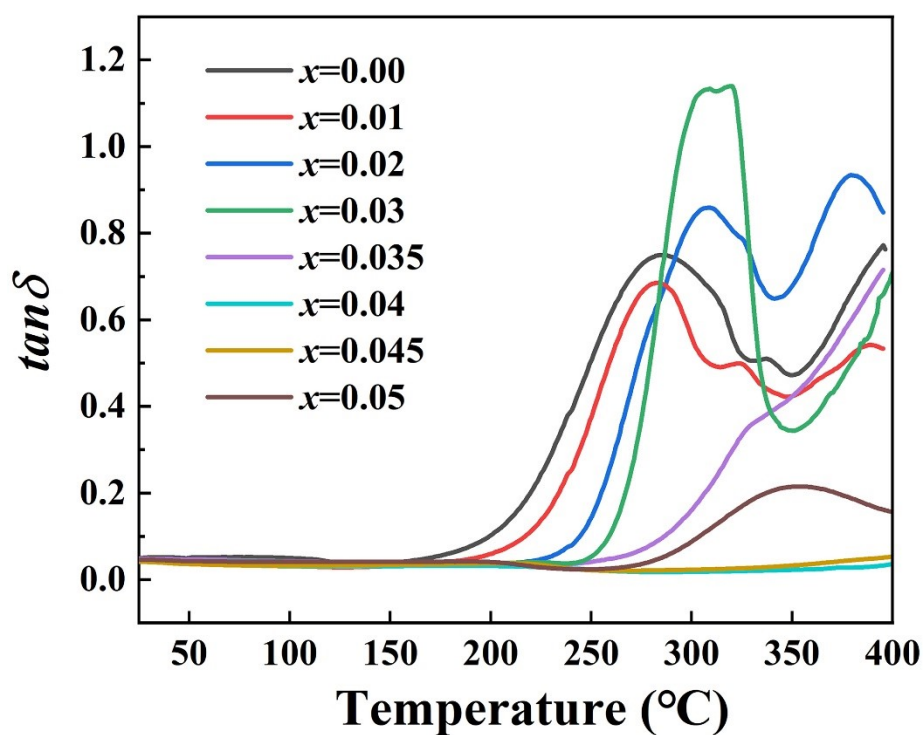


Fig. S8 The temperature dependence of $\tan\delta$ measured from 25-400 °C of all samples.

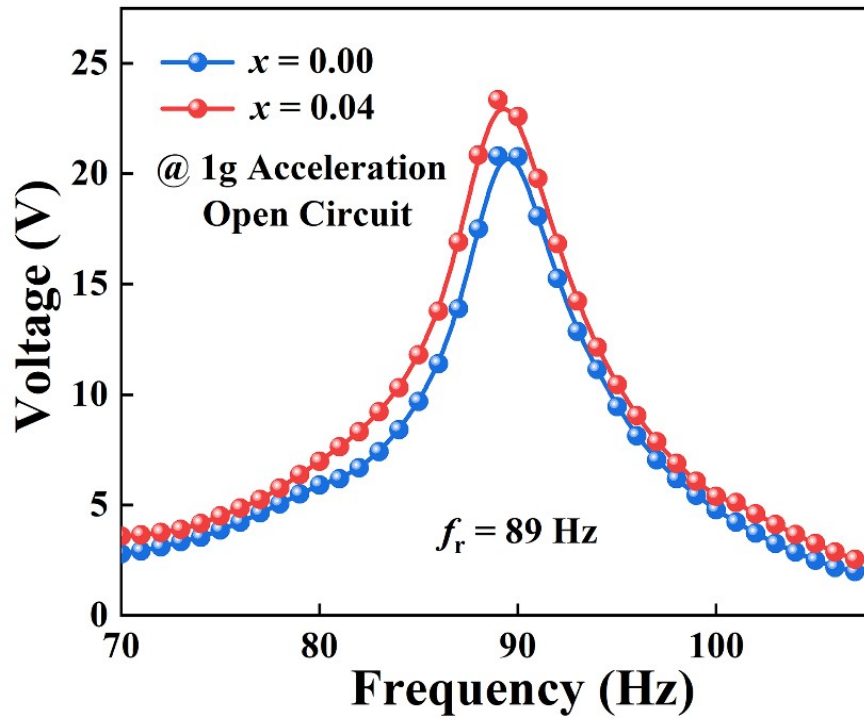


Fig. S9 The relationship between the open circuit voltage (V_{open}) and frequency of the cantilever PEH prepared by the $x = 0.00$ and $x = 0.04$ samples.