## Supporting Information

## Excellent energy storage density and charge-discharge performance in a novel

## Bi<sub>0.2</sub>Sr<sub>0.7</sub>TiO<sub>3</sub>-BiFeO<sub>3</sub> thin film

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Fig. S1. Cross-sectional micrograph of BST-*x*BFO thin films: (a) x = 0.4, (b) x = 0.2, (c) x = 0.1, (d) x = 0.



Fig. S2. *P*–*E* hysteresis loops for BST-*x*BFO thin films as the function of frequency (a) x = 0.4, (b) x = 0.3, (c) x = 0.1, (d) x = 0; (e) Energy storage density ( $U_{rec}$ ) and  $P_{max}$ - $P_r$  of BST-*x*BFO thin film as a function of frequency at 1500 kV cm<sup>-1</sup>.