Electronic Supplementary Information for

“Strong anisotropy of ferroelectricity in lead-free bismuth silicate”

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Figure S1. Schematic drawing of crystal structure of Bi$_2$SiO$_5$.

Schematic drawing of crystal structure of Bi$_2$SiO$_5$ (BSO) is illustrated in Figure S1. BSO is composed by stacking [Bi$_2$O$_2$]$^{2+}$ and [SiO$_3$]$^{2-}$ layers and has strong cleavage plane along the $a$-axis.
Figure S2. (a) XRD pattern of cleaved BSO sample by gonio-scan with Bragg-Brentano geometry. (b) $\varphi$-scan of 3 1 1 reflection for cleaved BSO sample.

The cross-plane and in-plane orientations of mechanically cleaved BSO samples were characterized by gonio- and $\varphi$-scans using x-ray diffractometer with monochromatized Cu $K_{\alpha 1}$ line (Rigaku Smartlab), respectively. In Figure S2(a), cleaved BSO sample showed only $(h 0 0)$ reflection without any secondary phase. The single crystallinity was investigated by $\varphi$-scan of 3 1 1 reflection for BSO sample. As shown in Figure S2(b), four azimuthal peaks, which are separated by about 90 degrees each other, prove the single crystallinity of BSO sample.