Supplementary Information

PHASE-PURE $BiFeO_3$ PRODUCED by REACTION FLASH-SINTERING of Bi_2O_3 and Fe_2O_3

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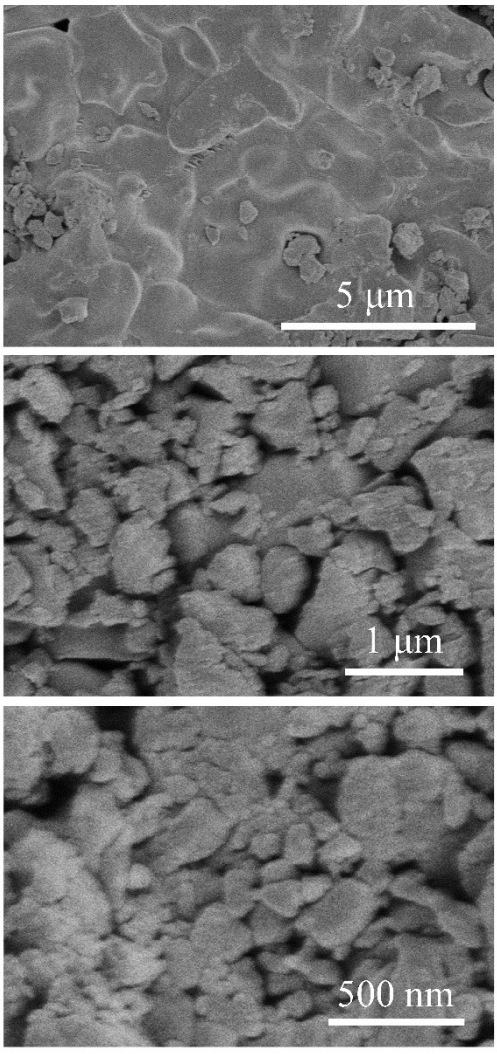

Figure S1. SEM micrographs of different areas of the cross section of the sample synthesized by reaction flash sintering at 100 V cm^{-1} and a current limit of 35 mA mm^{-2}.

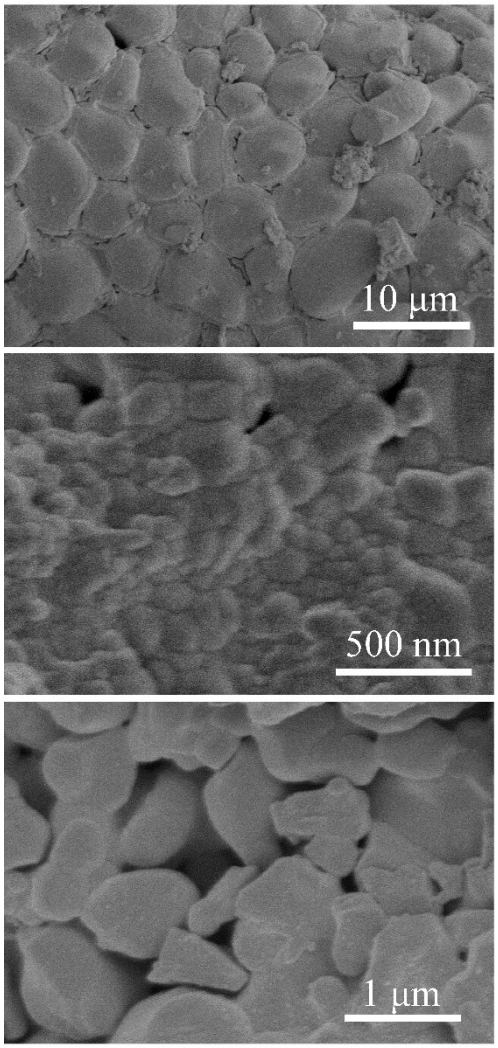

Figure S2. SEM micrographs of different areas of the cross section of the sample synthesized by reaction flash sintering at 50 V cm^{-1} and a current limit of 50 mA mm^{-2}.

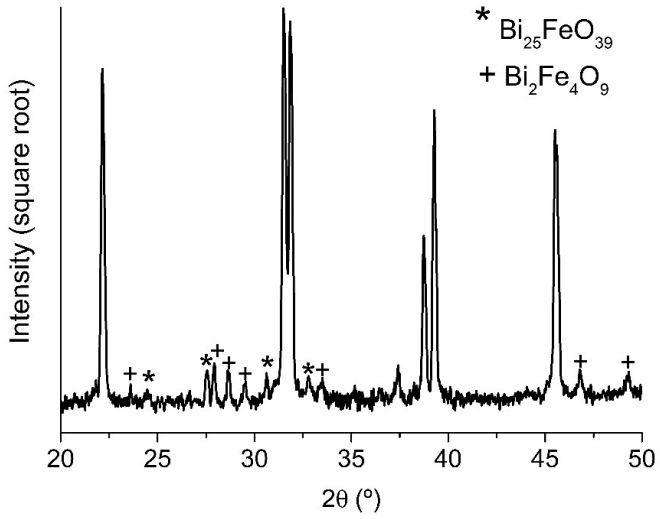

Figure S3. X-ray diffraction pattern of a $BiFeO_3$ sample prepared by conventional solid-state reaction. The intensity is represented in square root in order to make the secondary phases more noticeable.

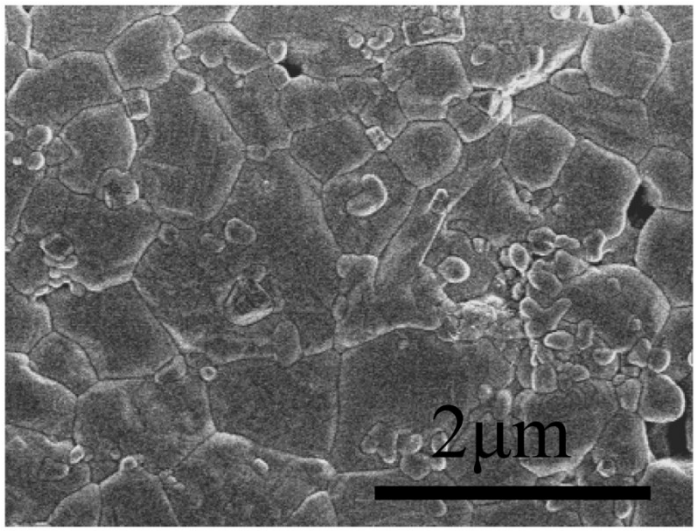

Figure S4. SEM micrograph of a $BiFeO_3$ sample prepared by conventional solid-state reaction.