

Electronic Supplementary Information

Ferromagnetic-like behaviour in bismuth ferrite films prepared by electrodeposition and subsequent heat treatment

By Doga Bilican, Enric Menéndez, Jin Zhang, Pau Solsona, Jordina Fornell, Eva Pellicer and Jordi Sort

Rietveld refinements of the $\theta/2\theta$ X-ray diffraction (XRD) patterns were carried out using the MAUD software to determine the crystallite size (i.e., average coherently diffracting domain size) of the main phases. Figs. S1 and S2 show the XRD patterns of the samples annealed at 600 and 700 °C (experimental patterns), respectively, together with the curves generated from the refinement (computed patterns) and the corresponding difference. Since the XRD peaks of minor phases, such as iron and bismuth oxides, overlap with those of BiFeO_3 , the refinements were performed in a reduced 2θ range (20–32.5 degrees) where the BiFeO_3 phase exhibits the most intense peaks.

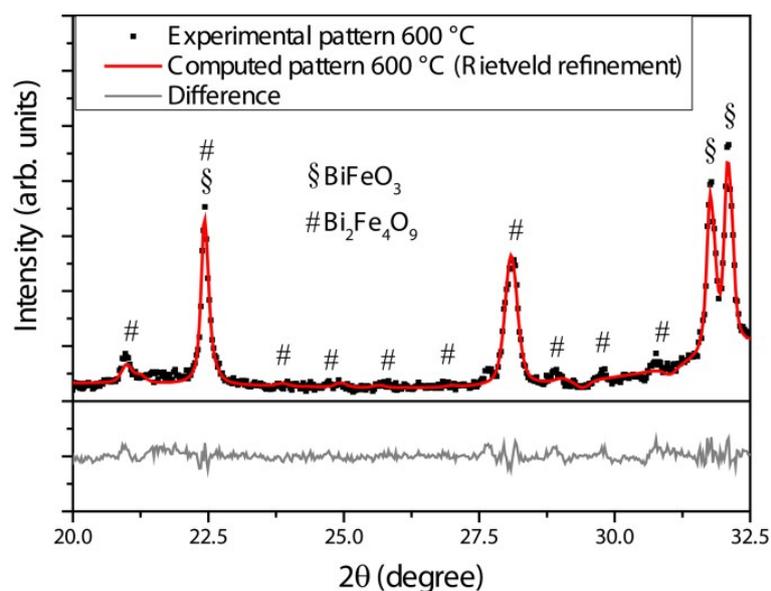


Fig. S1. $\theta/2\theta$ X-ray diffraction pattern of the sample annealed at 600 °C (experimental pattern) together with the curve generated from the refinement (computed pattern) and the corresponding difference. The main peaks have been labelled according to the existing crystallographic phases: BiFeO_3 (§, ICDD File Card No. 01-072-2321) and $\text{Bi}_2\text{Fe}_4\text{O}_9$ (#, ICDD File Card No. 01-072-1832).

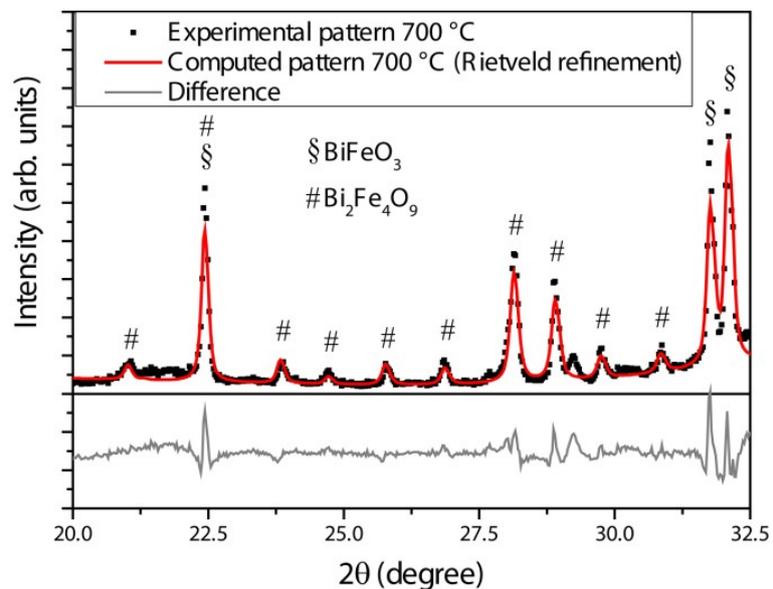


Fig. S2. $\theta/2\theta$ X-ray diffraction pattern of the sample annealed at 700 °C (experimental pattern) together with the curve generated from the refinement (computed pattern) and the corresponding difference. The main peaks have been labelled according to the existing crystallographic phases: BiFeO₃ (§, ICDD File Card No. 01-072-2321) and Bi₂Fe₄O₉ (#, ICDD File Card No. 01-072-1832).