





Room-temperature multiferroic behavior in layer-structured Aurivillius phase ceramics

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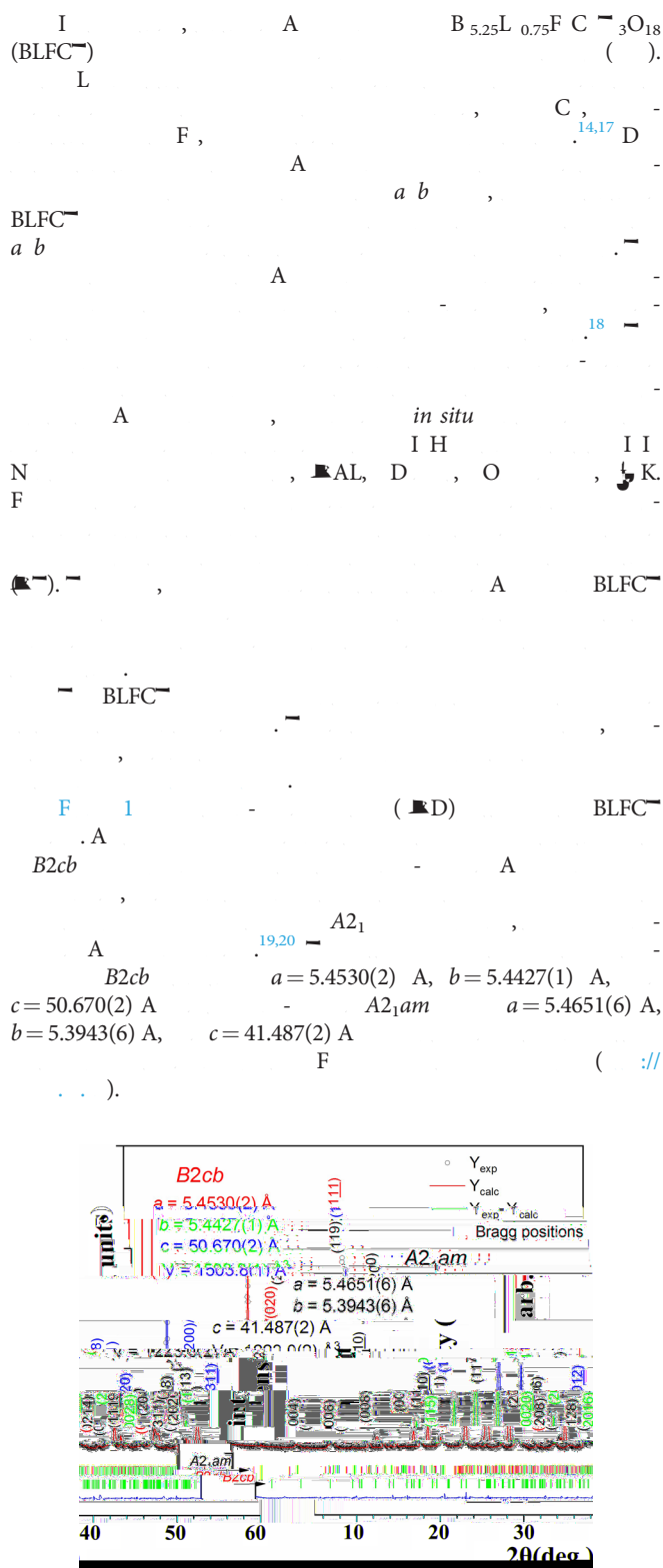
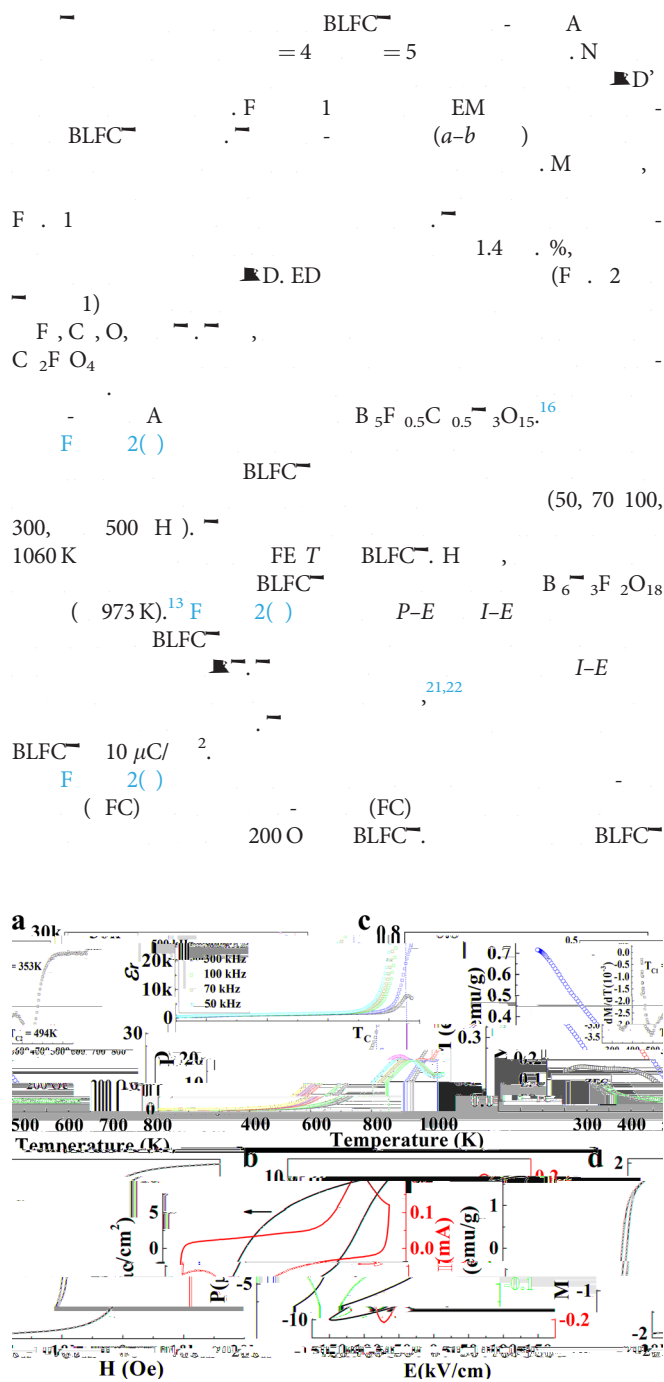


FIG. 1. XRD patterns of B2cb and A2am phases.

FIG. 2. (a) Temperature dependence of the dielectric constant ϵ' and loss tangent $\tan \delta$ for the B2cb phase. (b) Temperature dependence of the dielectric constant ϵ' and loss tangent $\tan \delta$ for the A2am phase. (c) Temperature dependence of the piezoelectric coefficient d_{31} and pyroelectric coefficient P_r for the B2cb phase. (d) Temperature dependence of the piezoelectric coefficient d_{31} and pyroelectric coefficient P_r for the A2am phase.

[illegible]

$(2^- < H < 5^-)$,
 2^- , M H F .2() 3. F ,
 F 5 BLFC $^-$ F M
 FM BLFC $^-$,
 5() . A 399 O F . F

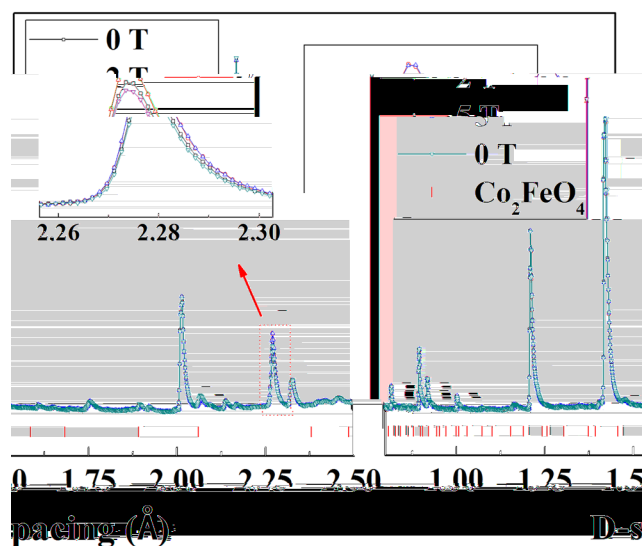


FIG. 4. XRD patterns of Co_2FeO_4 at 0 T and 2 T. The inset shows the 0 T pattern with a peak at 2.28 Å.

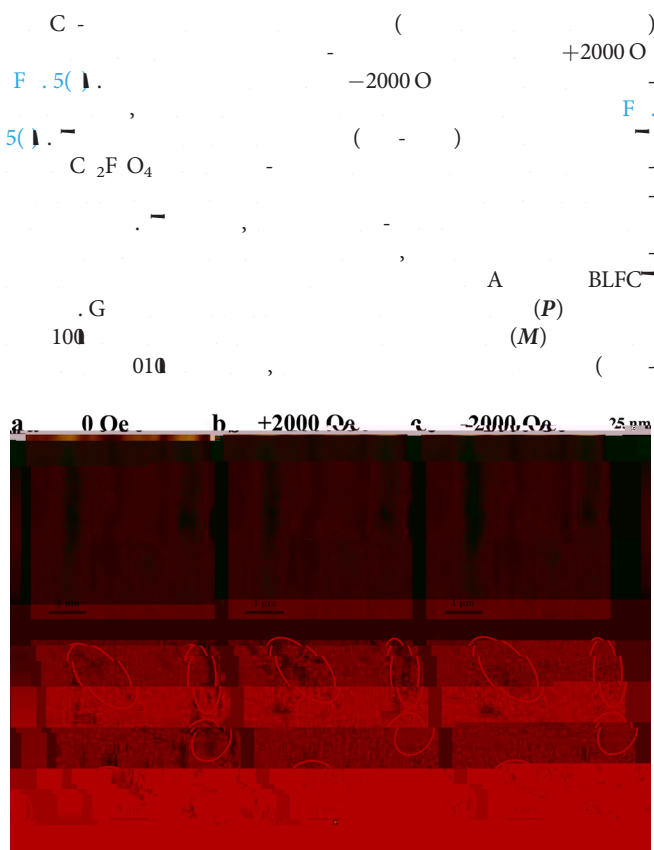


FIG. 5. TEM images of Co_2FeO_4 at 0 T, +2000 Oe, and -2000 Oe. The inset shows the 0 T image with a scale bar of 25 nm.

$T = P \times M$
 BLFC^-
 I^- , A^- BLFC^-
 F^-
 $\text{C}^{3+} \text{O} \text{C}^{3+}$, $\text{F}^{3+} \text{O} \text{C}^{3+}$ $\text{F}^{3+} \text{O} \text{F}^{3+}$
 A^- , C^-/F^-
 EM^- (ED) BLFC^-
 D^- , D^- , D^- , D^- , D^-
 D^- I^- I^- N^- , AL^-
 D^- , O^- , K^-
 A^- E^- D^- F^-
 G^- A^- A^- N^- $\text{K}2015-0602006$, N^- FC^- G^-
 N^- 11474138 11834005). A^-
 E^- M^- EM^- EM^-
 IND54^- N^- EM^- E^-

DATA AVAILABILITY

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