Electronic Supplementary Material (ESI) for Dalton Transactions.

Electronic Supplemental Information:

Resilience of the Aurivillius structure upon La and Cr doping in $Bi_5Ti_3FeO_{15}$ multiferroic.

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BTFO	*x*	*y*	*z*	Occupancy	U_{iso}
Bi1 4*a*	0.2511	0.2474	0	1	0.0153
Bi2 8*b*	0.2452	0.2449	0.1047	1	0.0095
Bi3 8*b*	0.2294	0.2709	0.1044	1	0.0106
Ti1 8*b*	0.2951	0.2505	0.4507	0.75	0.0072
Fe1 8*b*	0.2951	0.2505	0.4507	0.25	0.0072
Ti2 8*b*	0.2814	0.2501	0.3471	0.75	0.0064
Fe2 8*b*	0.2814	0.2501	0.3471	0.25	0.0064
O1 4*a*	0.3208	0.1754	0.5	1	0.0012
O2 8*b*	0.6056	0.5439	0.0533	1	0.0195
O3 8*b*	0.3338	0.3072	0.4048	1	0.0076
O4 8*b*	0.5316	0.4940	0.1385	1	0.0153
O5 8*b*	0.2974	0.2047	0.3075	1	0.0171
O6 8*b*	0.5206	0.5004	0.2538	1	0.0082
O7 8*b*	0.0342	-0.0343	0.0392	1	0.0299
O8 8*b*	0.0989	0.0203	0.1456	1	0.0087

Table S1. The Rietveld-refined atomic parameters of BTFO in the space group $A2_1am$. Occupancies were fixed to nominal stoichiometry.

BLTFO	*x*	*y*	*z*	Occupancy	U_{iso}
Bi1 4*a*	0.2732	0.2521	0	1	0.0156
Bi2 8*b*	0.2831	0.2403	0.1048	1	0.0081
Bi3 8*b*	0.2539	0.2709	0.2196	1	0.0106
Ti1 8*b*	0.2773	0.2571	0.4511	0.75	0.0063
Fe1 8*b*	0.2692	0.2693	0.4490	0.25	0.0063
Ti2 8*b*	0.2337	0.2552	0.3444	0.75	0.0063
Fe2 8*b*	0.2297	0.2639	0.3435	0.25	0.0063
O1 4*a*	0.3033	0.2227	0.5	1	0.0012
O2 8*b*	0.5407	0.6016	0.0498	1	0.008
O3 8*b*	0.3121	0.2887	0.4107	1	0.0146
O4 8*b*	0.5198	0.4356	0.1349	1	0.0018
O5 8*b*	0.3425	0.2194	0.3113	1	0.0322
O6 8*b*	0.4909	0.4765	0.2561	1	0.0093
O7 8*b*	0.0474	0.0202	0.0403	1	0.0188
O8 8*b*	0.0426	-0.0902	0.1448	1	0.0248
La1 4*a*	0.2732	0.2521	0	1	0.0156
La2 8*b*	0.2831	0.2403	0.1048	1	0.0081
La3 8*b*	0.2539	0.2709	0.2196	1	0.0106

Table S2. The Rietveld-refined atomic parameters of BLTFO in the space group $A2_1am$. Occupancies were fixed to nominal stoichiometry.

BTFCO	*x*	*y*	*z*	Occupancy	U_{iso}
Bi1 4*a*	0.2470	0.2656	0	1	0.0139
Bi2 8*b*	0.2420	0.2367	0.1039	1	0.0092
Bi3 8*b*	0.2285	0.2459	0.2188	1	0.012
Ti1 8*b*	0.2893	0.2458	0.4502	0.75	0.012
Fe1 8*b*	0.2893	0.2458	0.4502	0.125	0.012
Ti2 8*b*	0.2920	0.2283	0.3468	0.75	0.012
Fe2 8*b*	0.2920	0.2283	0.3468	0.25	0.012
O1 4*a*	0.3236	0.1951	0.5	1	0.0012
O2 8*b*	0.5817	0.5529	0.0502	1	0.012
O3 8*b*	0.3584	0.3047	0.4055	1	0.0278
O4 8*b*	0.5429	0.5053	0.1349	1	0.0407
O5 8*b*	0.3034	0.2194	0.3055	1	0.0273
O6 8*b*	0.5528	0.4818	0.2551	1	0.0120
O7 8*b*	-0.0239	-0.0613	0.0393	1	0.0111
O8 8*b*	0.0849	-0.0182	0.1494	1	0.0420
Cr1 8*b*	0.2893	0.2458	0.4502	0.125	0.010
Cr2 8*b*	0.2920	0.2283	0.3468	0.125	0.010

Table S3. The Rietveld-refined atomic parameters of BTFCO in the space group $A2_1am$. Occupancies were fixed to nominal stoichiometry.

	BTFO	BTFCO	BLTFO
Bi1-Bi1	3.853(7)	3.83(3)	3.833(3)
Bi1-Bi2	4.3142(8)	4.2721(17)	4.3273(8)
Bi1-O1	2.31(3), 2.38(3)	2.292(15), 2.379(12)	2.48(4), 2.46(4)
Bi1-O2	2.45(3)	2.438(8)	2.52(3)
Bi1-O7	2.48(3)	2.473(10)	2.43(3)
Ti1/Fe1-O1	2.030(7)	2.01926(8)	2.068(8)
Ti1/Fe1-O2	1.99(3)	1.86126(12)	1.90(3)
Ti1/Fe1-O3	2.035(14)	2.02279(9)	1.892(13)
Ti1/Fe1-O7	2.28(4)	2.27987(3)	2.24(4)
∠ Ti1-O7-Ti1	153.8(13)	153.8833(11)	154.2(12)
∠ Ti1-O3-Ti2	156.1(13)	155.9009(12)	154.4(12)
∠ Ti2-O8-Ti2	169.1(13)	169.2103(8)	157.7(13)

Table S4. Selected bond parameters of BTFO, BTFCO and BLTFO obtained from the Rietveld refinement of synchrotron X-ray diffraction data. The distances are in the units of Å and the angles are in degrees.