

Electronic Supplementary Information (ESI†)

Magnetic properties of Sn-and Mn-incorporated Co_2TiO_4 from single-step calcination

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Table S1 Comparison of EDS and XPS results of CTO and CMTO

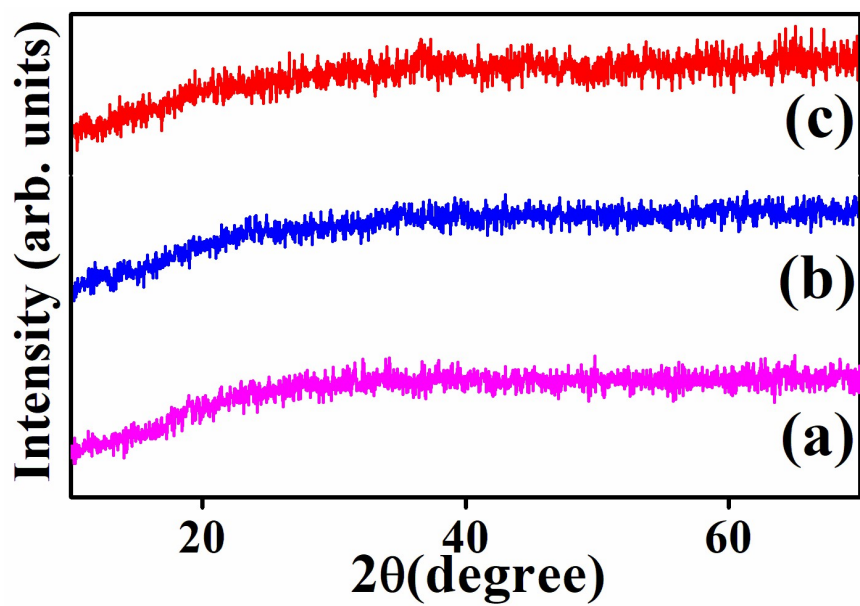


Fig. S1 Comparative PXRD patterns of coprecipitated precursors of (a) CTO, (b) CSTO, and (c) CMTO, respectively.

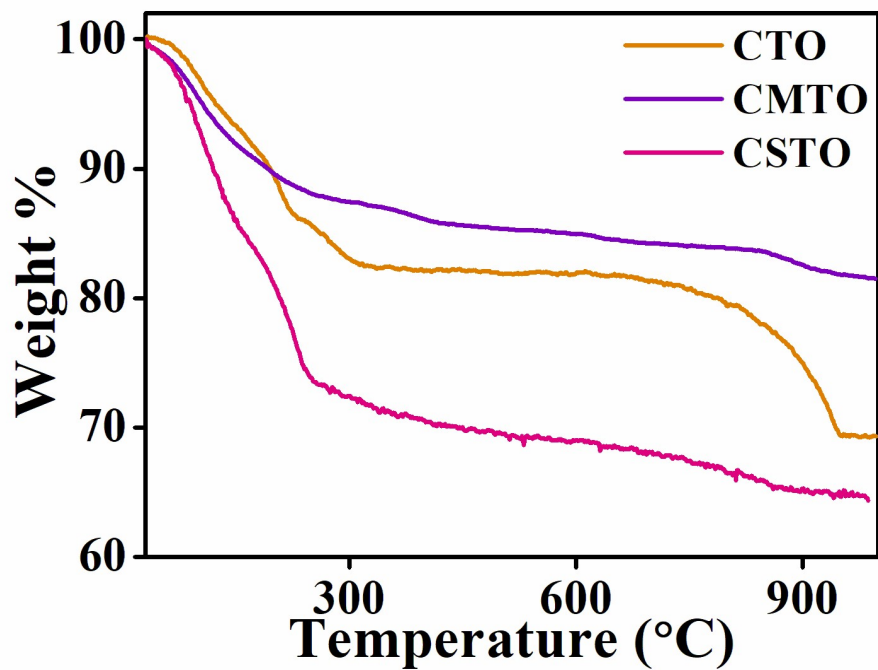


Fig. S2 Comparative TG traces of coprecipitated precursors of CTO, CSTO, and CMTO

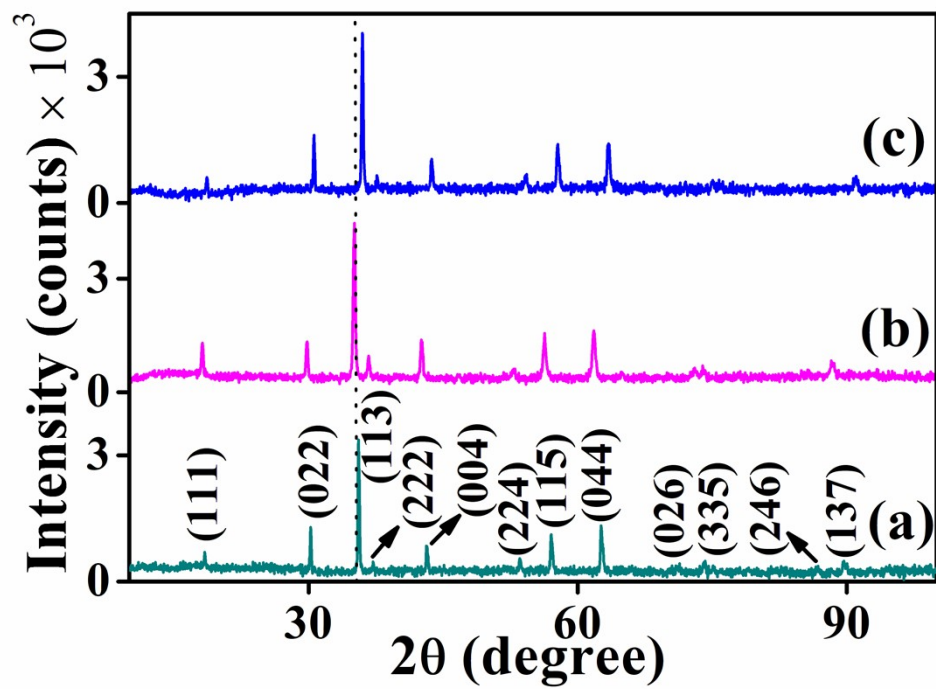


Fig. S3 Comparative PXRD pattern of (a) CTO, (b) CSTO, and (c) CMTO, respectively.

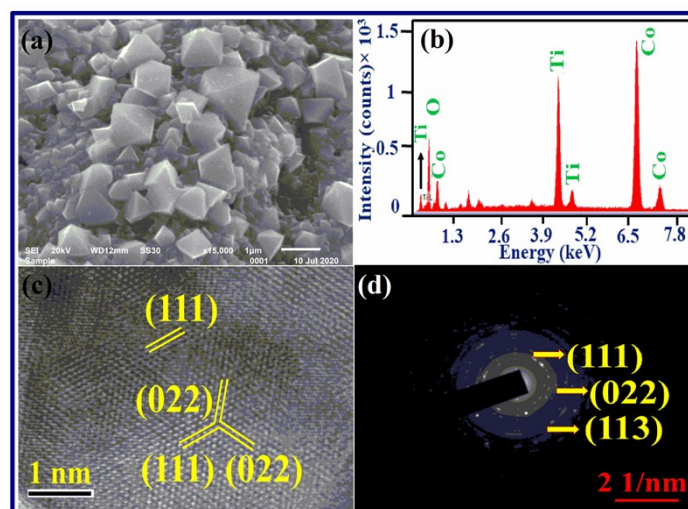


Fig. S4(a) SEM image, (b) EDS spectrum, (c) HRTEM image, and (d) SAED pattern of CTO, respectively.

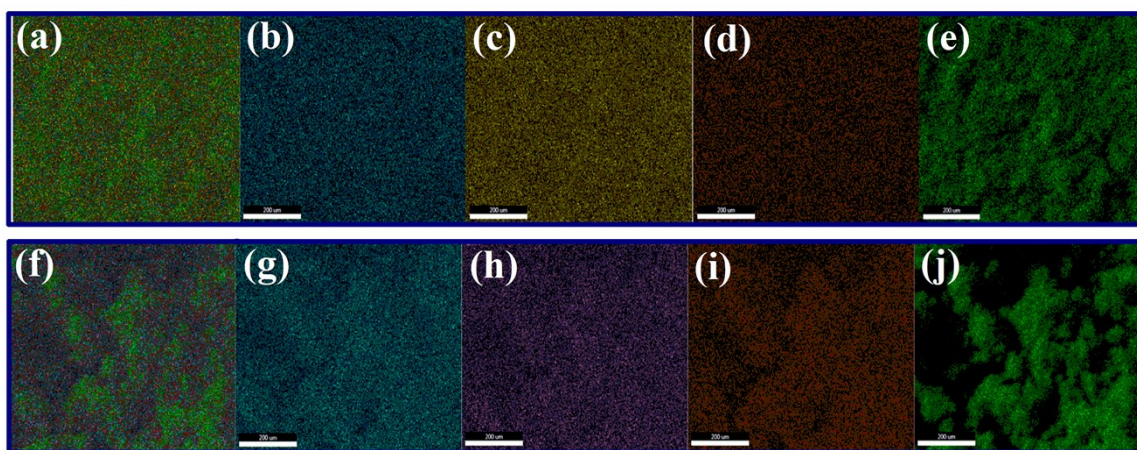


Fig. S5 SEM-EDS elemental mapping results of (a-e) Overlay, cobalt, tin, titanium, and oxygen of CSTO and (f-j) Overlay, cobalt, manganese, titanium, and oxygen of CMTO, respectively.

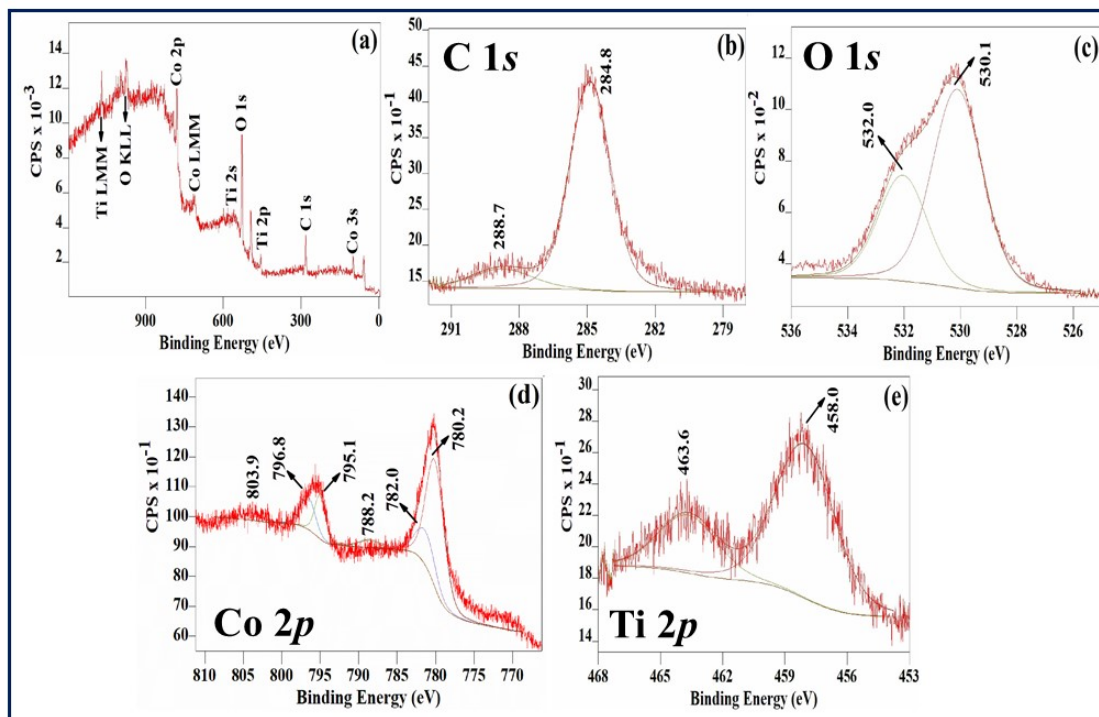


Fig. S6(a) Survey XPS spectrum, and core-level spectra of (b) C *1s*, (c) O *1s*, (d) Co *2p*, and (e) Ti *2p* of CTO.

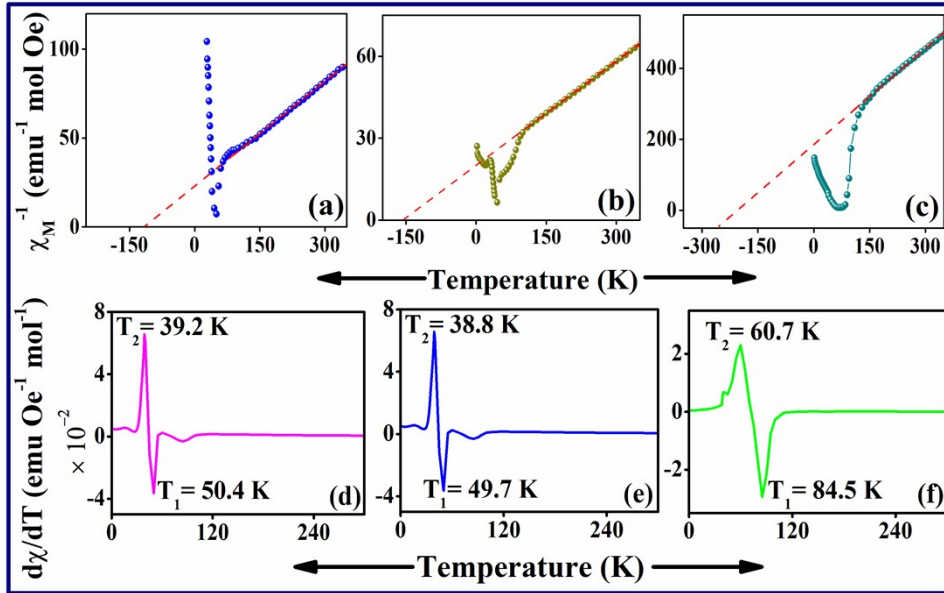


Fig. S7 χ_M^{-1} vs. T plot of (a) CTO, (b) CSTO, and (c) CMTO at an applied field of 1000 Oe. Derivative FC data ($d\chi/dT$ vs. temperature) of (d) CTO, (e) CSTO and (f) CMTO respectively.

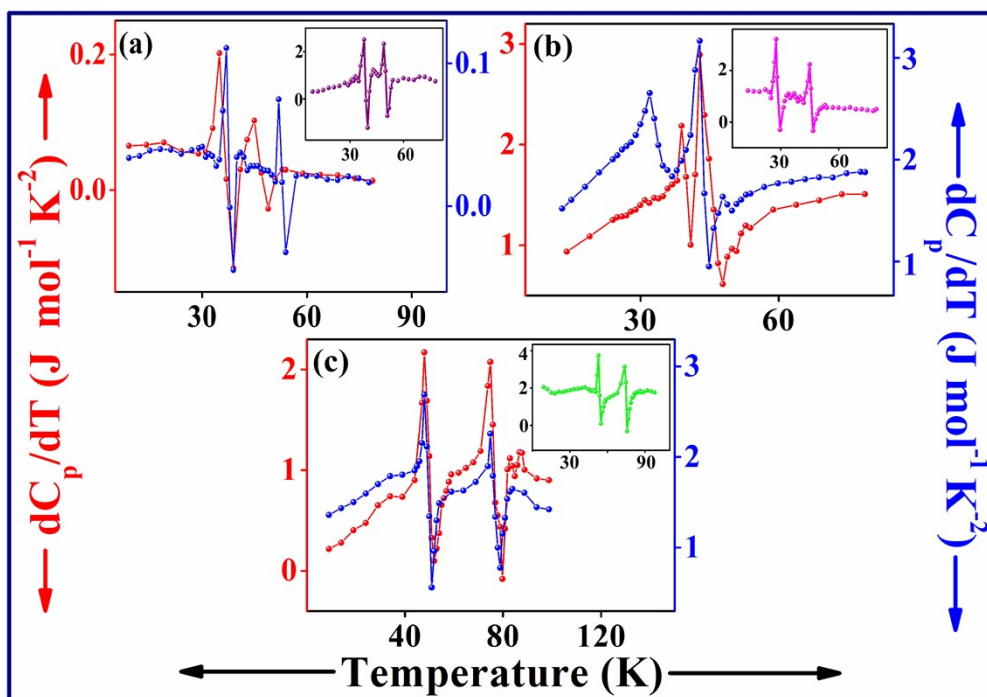


Fig. S8 First derivative plots of heat capacity vs. temperature measured under zero-field (data in red), 500 Oe (data in blue), and 1000 Oe (shown in insets) for (a) CTO, (b) CSTO, and (c) CMTO, respectively.

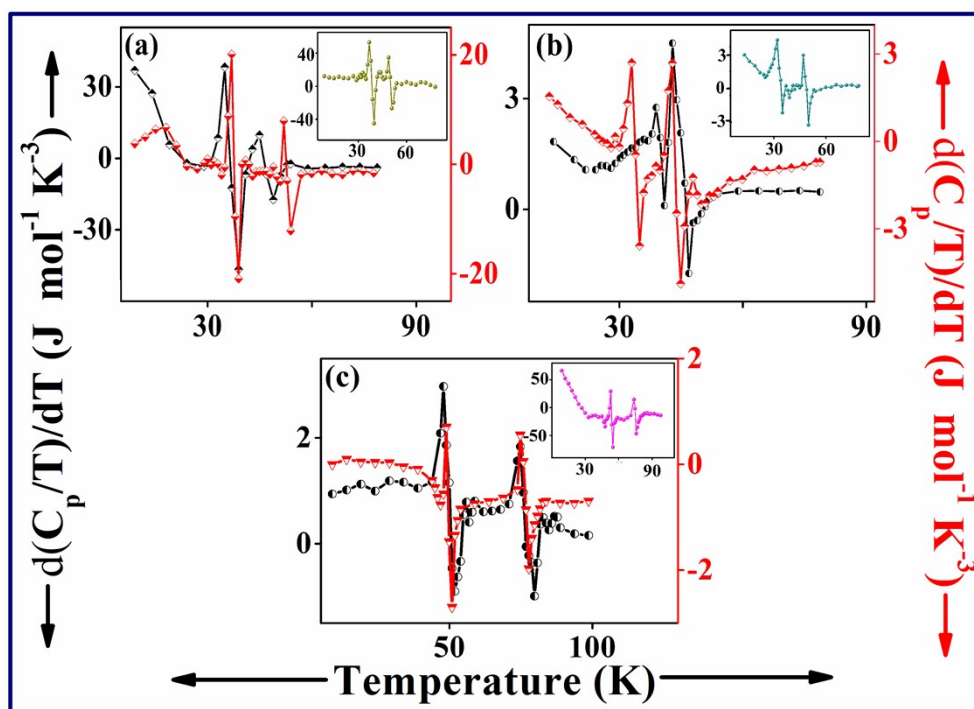


Fig. S9 First derivative plots of C_p/T vs. temperature measured under zero-field (data in black), 500 Oe (data in red), and 1000 Oe (shown in insets) for (a) CTO, (b) CSTO, and (c) CMTO, respectively.

Table S1 Comparison of atomic percentages of CTO and CMTO from EDS and XPS analysis.

Sample	EDS (atomic %)	XPS (atomic %)
CTO	Co- 28.6	Co- 28.4
	Ti- 14.3	Ti- 14.4
	O- 56.8	O- 57.1
CMTO	Co- 29.5	Co- 28.2
	Mn- 7.1	Mn- 6.9
	Ti- 7.2	Ti- 7.1
	O- 56.1	O- 57.6