Supporting information for

Spinel/Perovskite Cobaltite Nanocomposites Synthesized by Combinatorial Pulsed Laser Deposition

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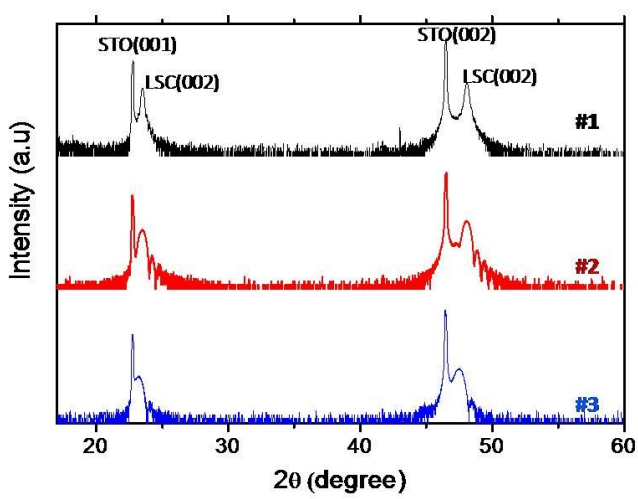

Figure S1. Comparison of the HRXRD 2θ-ω scans of LSC/CFO grown at 680 °C, with the fraction of CFO increasing from sample #1 to sample #3.

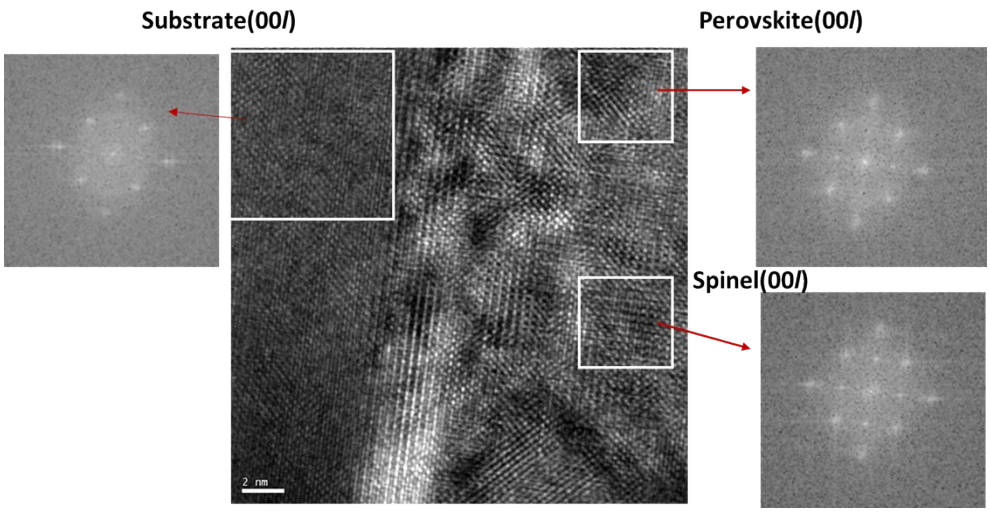

Figure S2. HRTEM image and corresponding Fast Fourier transform (FFT) pattern of LSC/CFO grown with 2 Hz laser frequency (n_1=50; n_2=200, N=300).

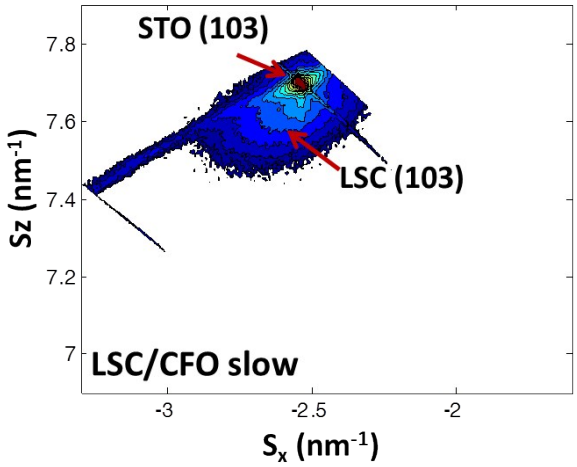

Figure S3. X-ray diffraction reciprocal space map of LSC/CFO on STO (100) grown at 600°C using 2 Hz laser rate

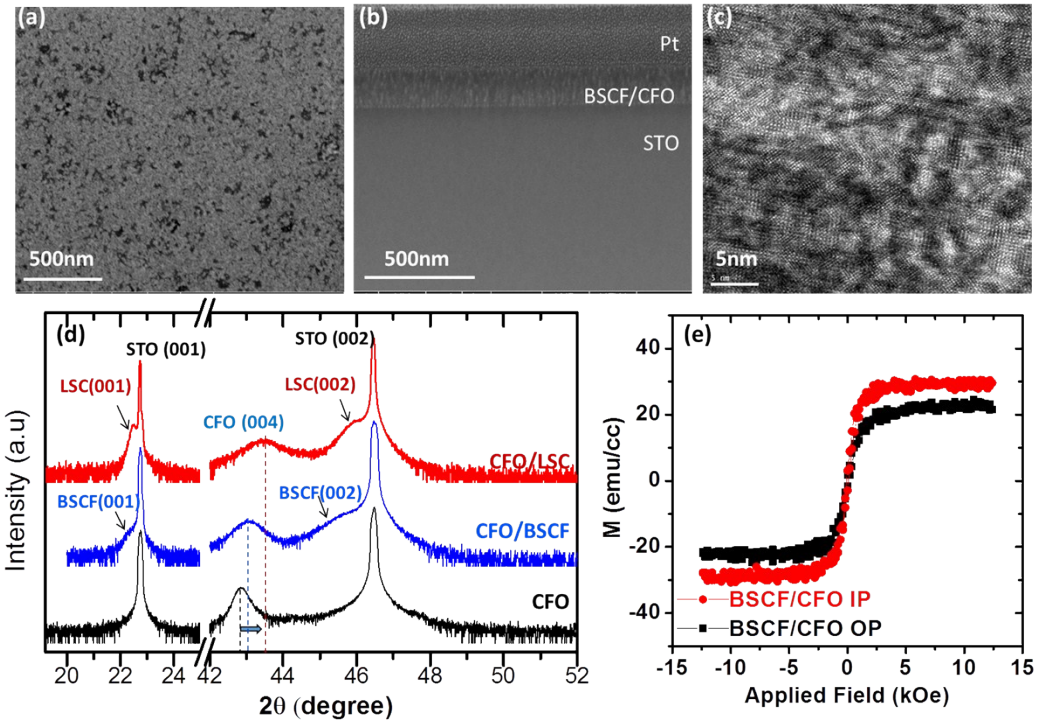

Figure S4: (a) Top surface and (b) cross sectional SEM image of BSCF/CFO nanocomposite structure grown at 600°C, 10 Hz, n_1=50; n_2=200, N=300; (c) HRTEM image of BSCF/CFO; (d) 2θ-ω scan of LSC/CFO, BSCF/CFO nano-composite and CFO single phase films; (e) In plane (IP) and out of plane (OP) magnetization loops of BSCF/CFO nanocomposite

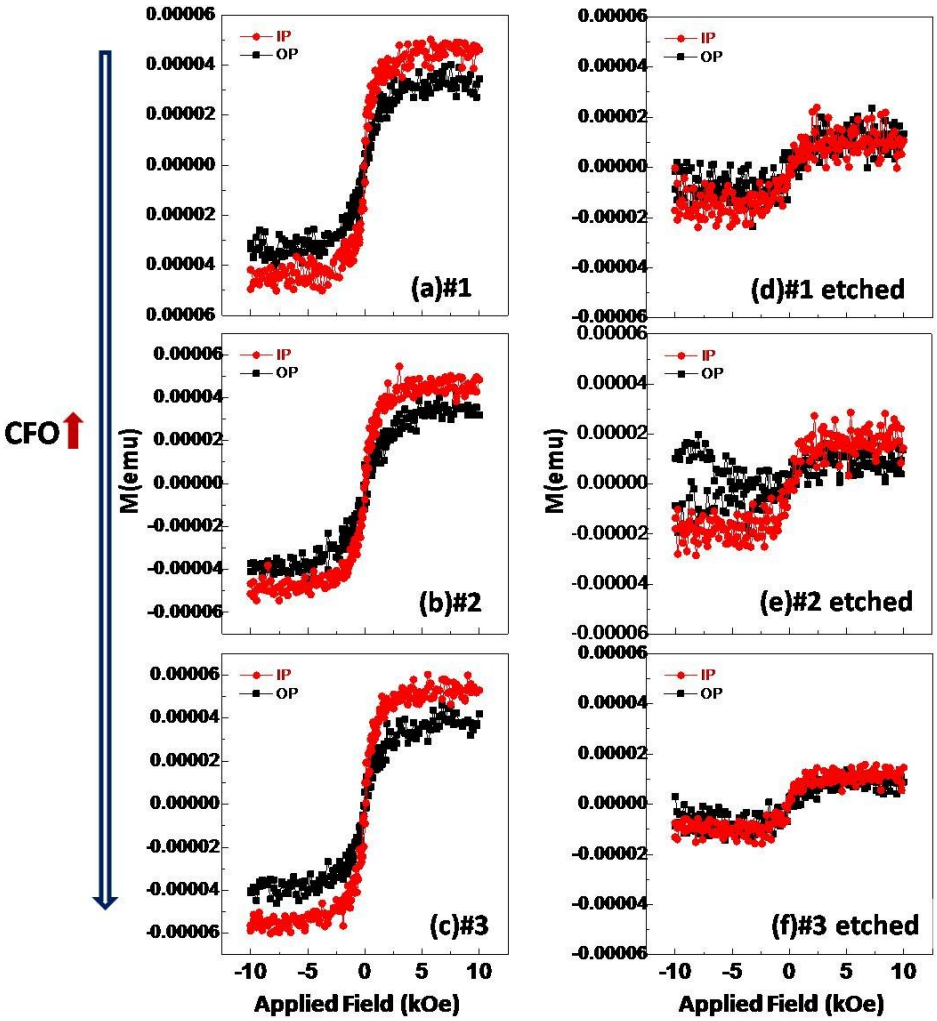

Figure S5: In plane (IP) and out of plane (OP) hysteresis loops of LSC/CFO nanocomposite grown at 680 ˚C, with the fraction of CFO increasing from sample #1 to sample #3 of Figure 2. (a-c) before and (d-f) after HCl etching.

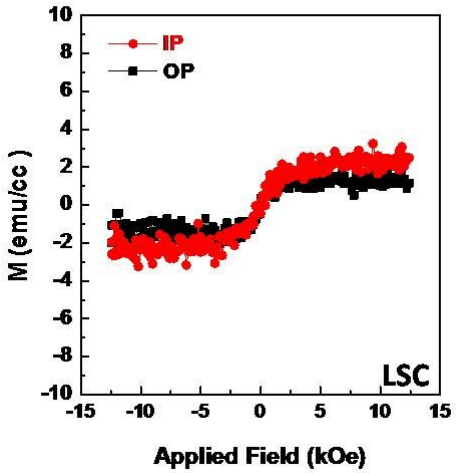

Figure S6: In plane (IP) and out of plane (OP) hysteresis loops of an LSC single phase film.