Electronic Supplementary Material (ESI) for Nanoscale Advances.

Hybrid Ag-$LiNbO_3$ Nanocomposite Thin Films with Tailorable Optical Properties

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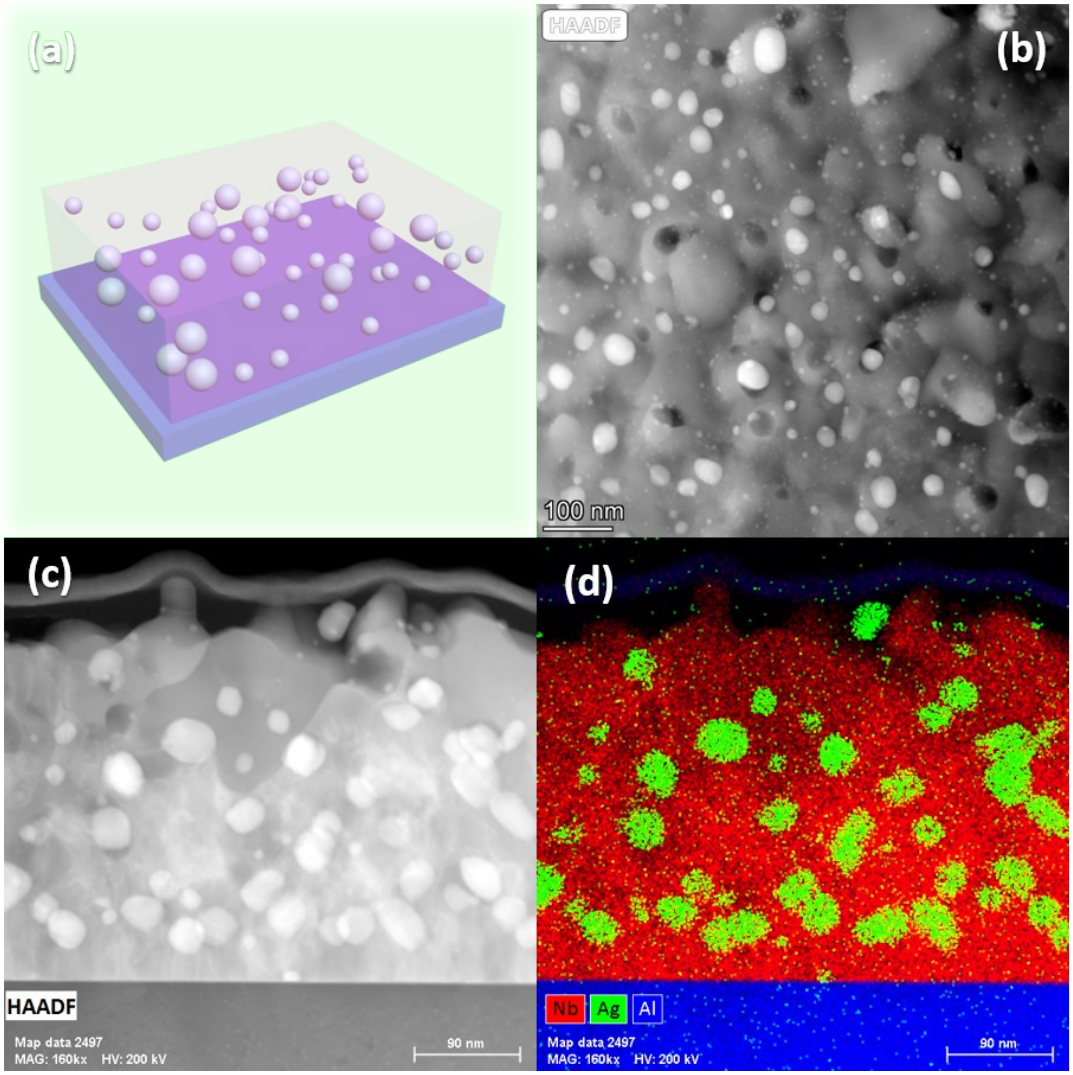

Figure S1. Microstructure characterizations of the high-density Ag-LNO nanocomposite thin film. (a) schematic illustration; (b) low-mag plan-view STEM image; (c) low-mag cross-sectional STEM image and (d) its corresponding EDS mapping.

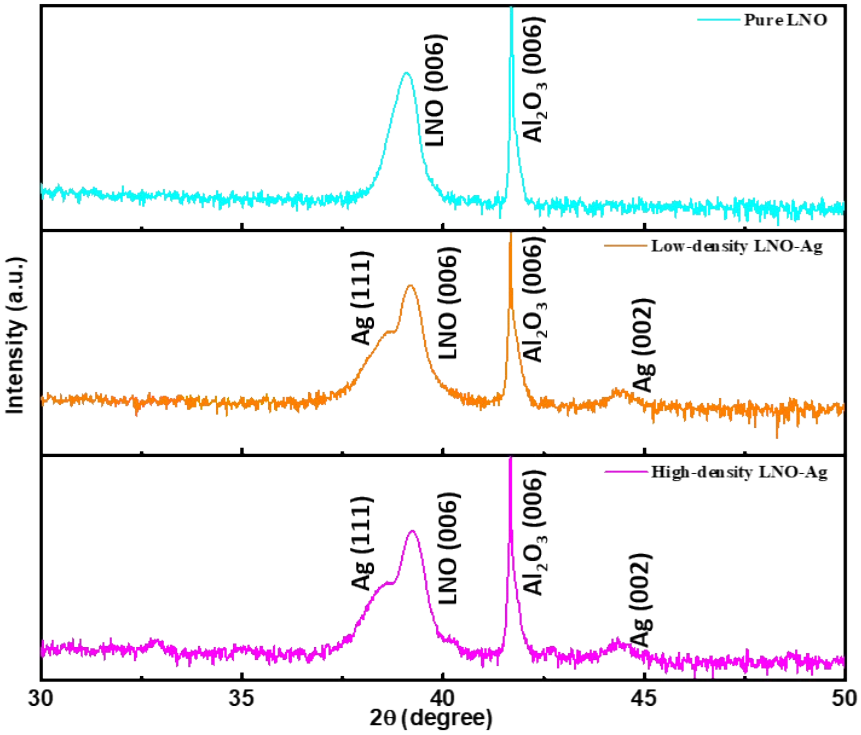

Figure S2. Standard θ-2θ XRD scans of the pure LNO, low-density and high-density Ag-LNO thin films.

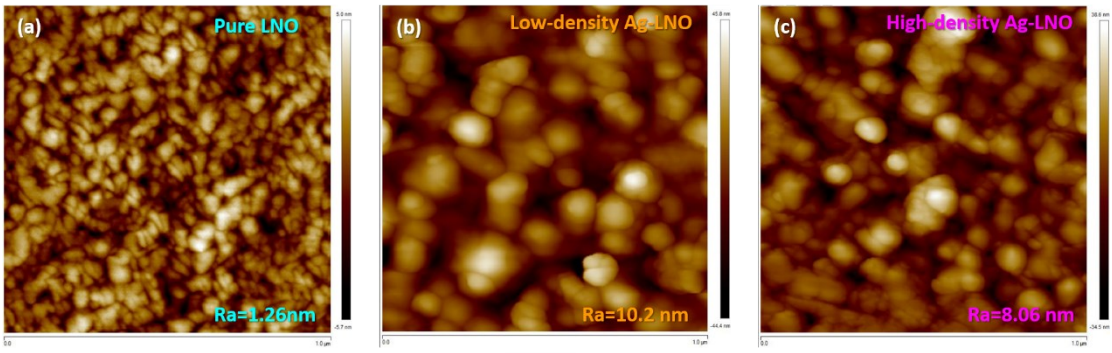

Figure S3. AFM characterizations of (a) the pure LNO, (b) low-density and (c) high-density Ag-LNO thin films.

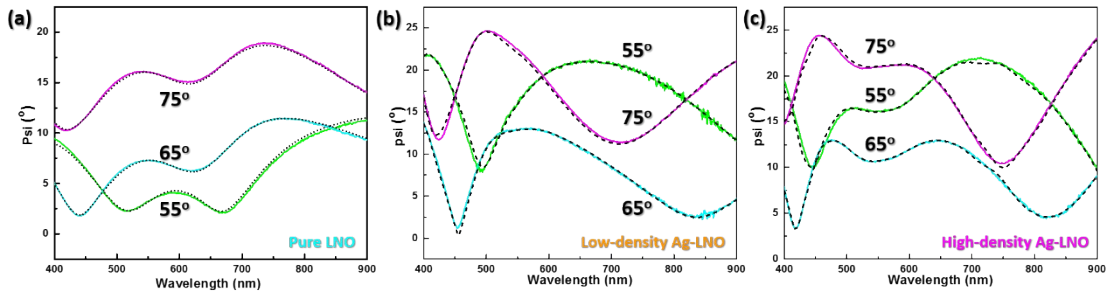

Figure S4. Experimental (solid points) and fitted (solid lines) components at different angles (55°, 65°, 75°) of the ellipsometric parameter Psi (φ) vs. wavelength for (a) pure LNO, (b) low-density and (c) high-density Ag-LNO films.

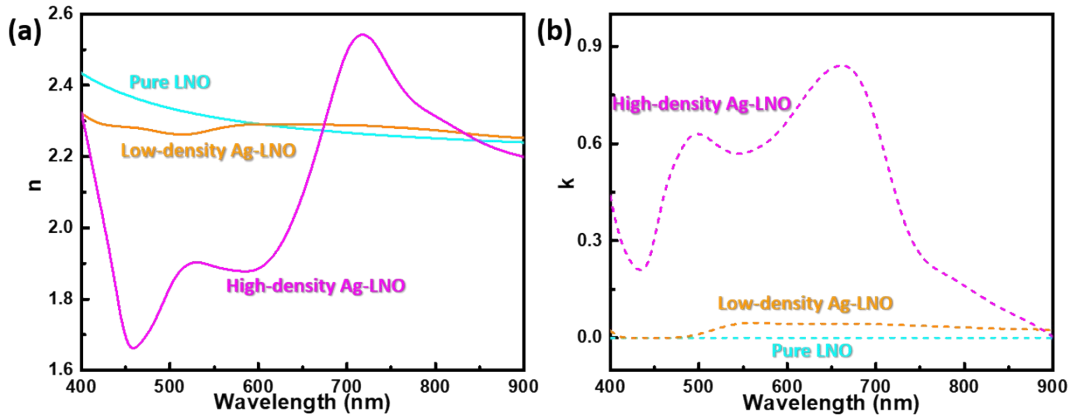

Figure S5. The (a) refractive index *n* and (b) extinction coefficient *k* of the pure LNO, low-density and high-density Ag-LNO nanocomposite thin films.

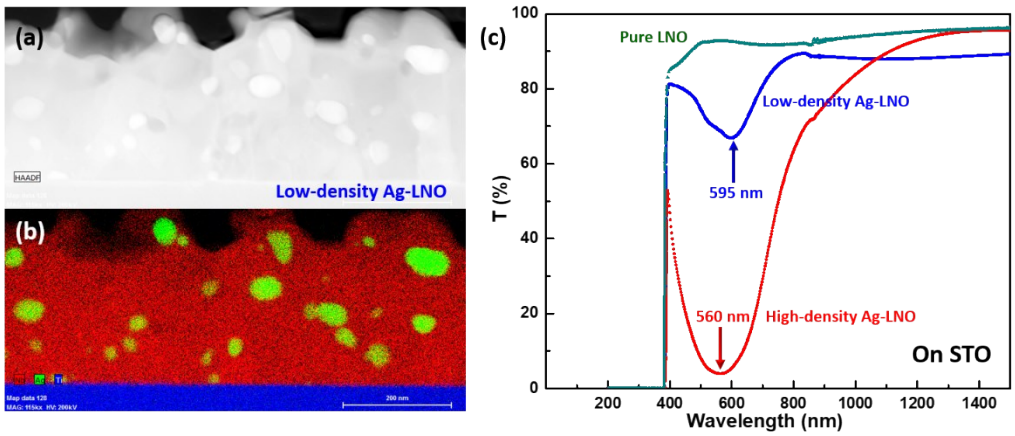

Figure S6. (a) Low-mag STEM image of low-density Ag-LNO grown on STO substrate with (b) corresponding EDS mapping; (c) transmittance spectral of the pure LNO, low-density and high-density Ag-LNO films.