

# Supporting Information

## **Enhancement of Electrical Performance of Atomic Layer Deposited SnO Films via Substrate Surface Engineering**

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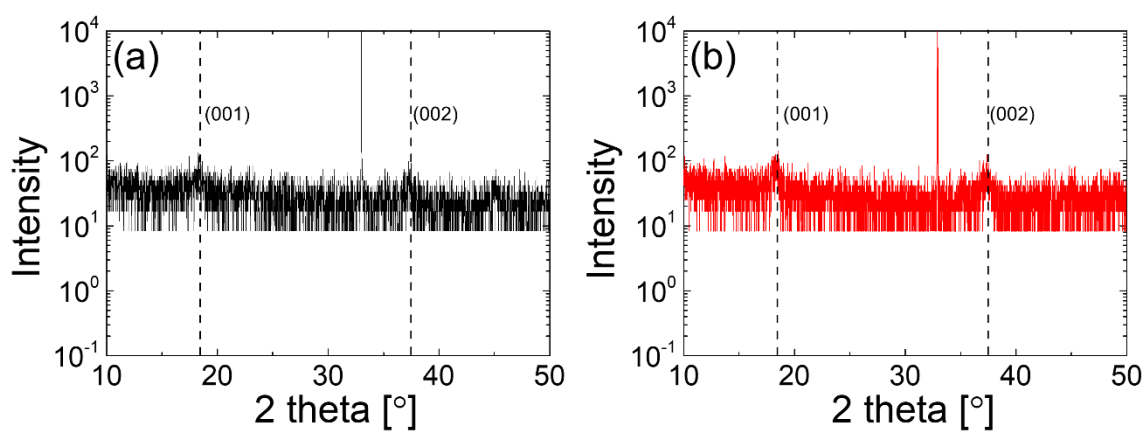
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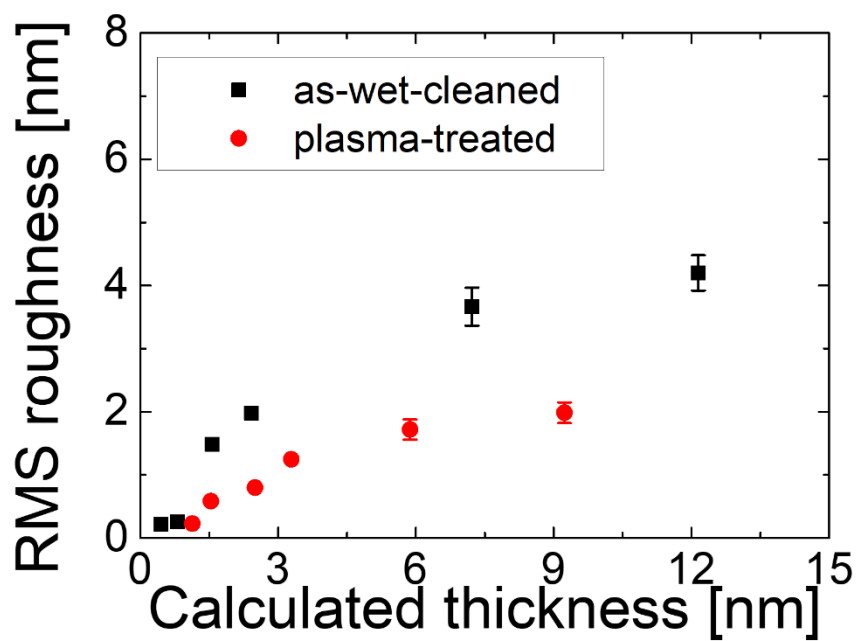
<sup>c</sup>Division of Advanced Materials, Korea Research Institute of Chemical Technology, Daejeon, 34114, South Korea

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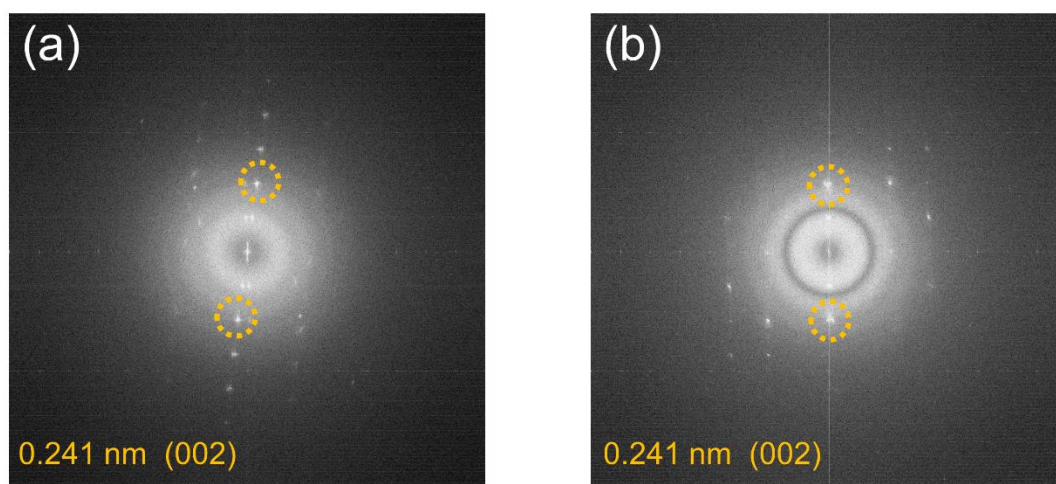
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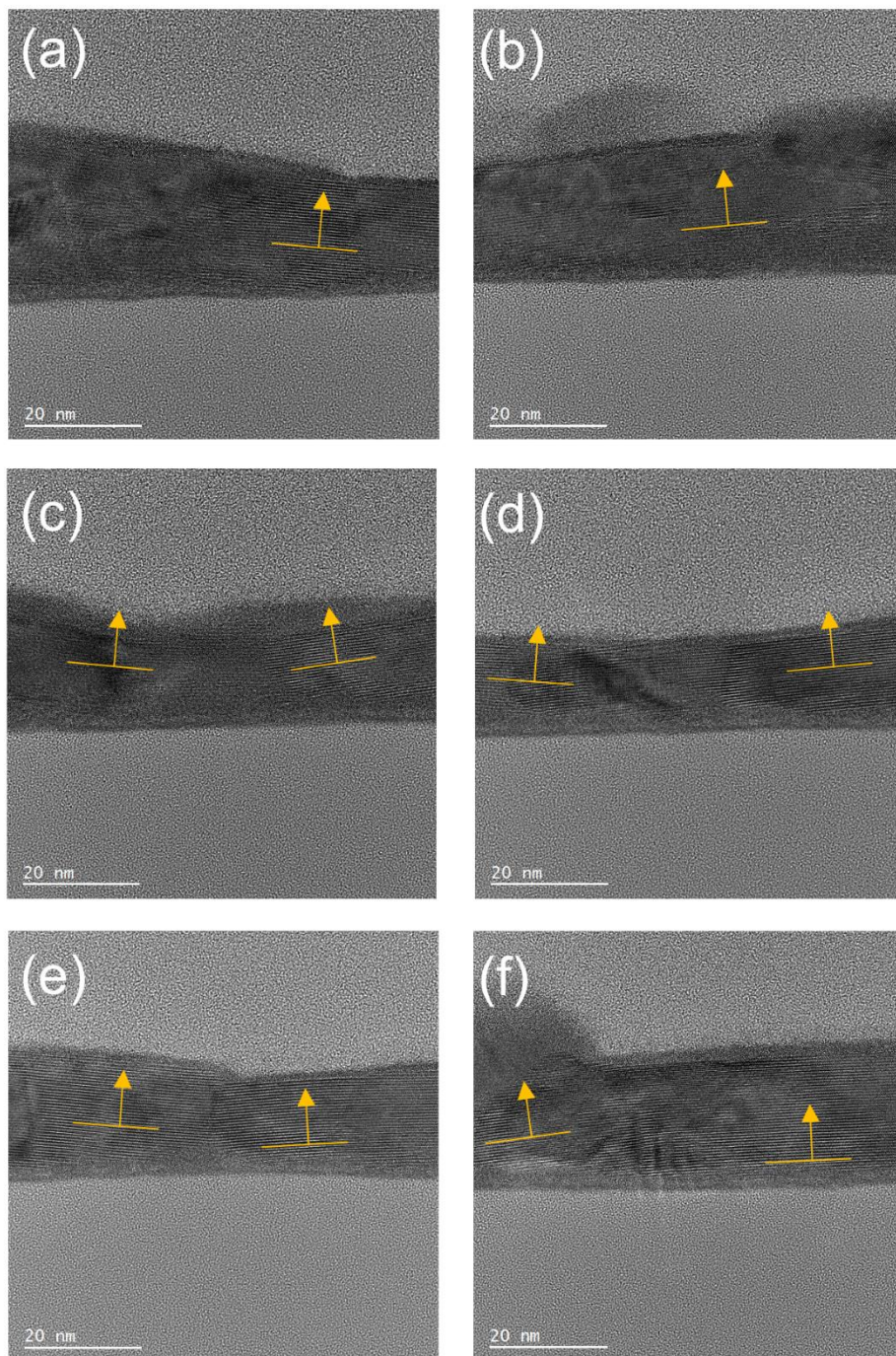
**Figure S1.** XRD patterns of the SnO films deposited on (a) the as-cleaned SiO<sub>2</sub> and (b) the plasma-treated SiO<sub>2</sub>.



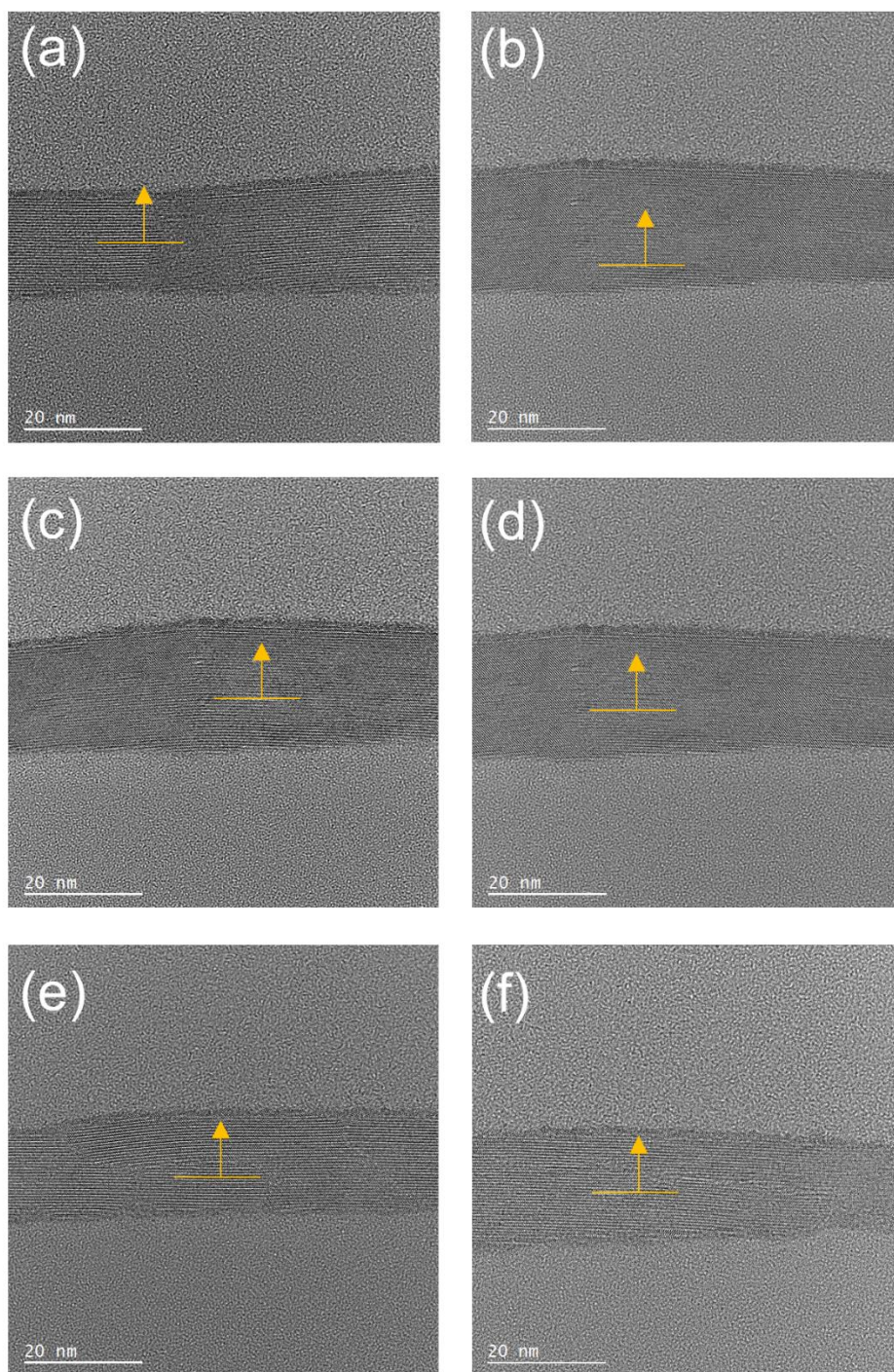
**Figure S2.** Variation in the RMS roughness of the SnO films grown on the as-wet-cleaned and plasma-treated SiO<sub>2</sub> substrates as a function of the film thickness.



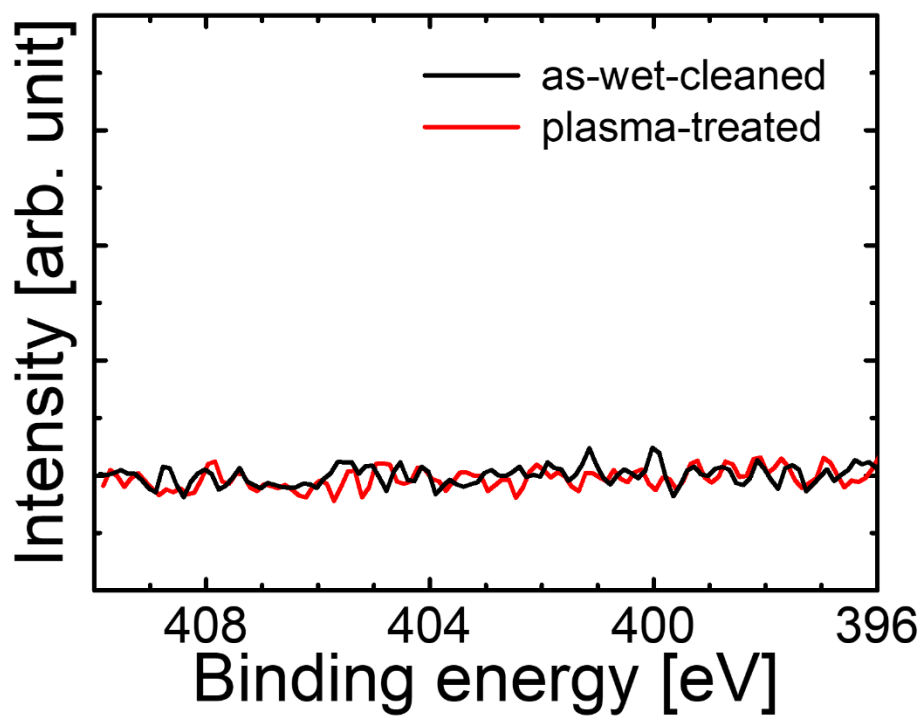
**Figure S3.** The fast Fourier transform images corresponding to the HRTEM images in (a) Fig. 4(a) and (b) Fig. 4(b).



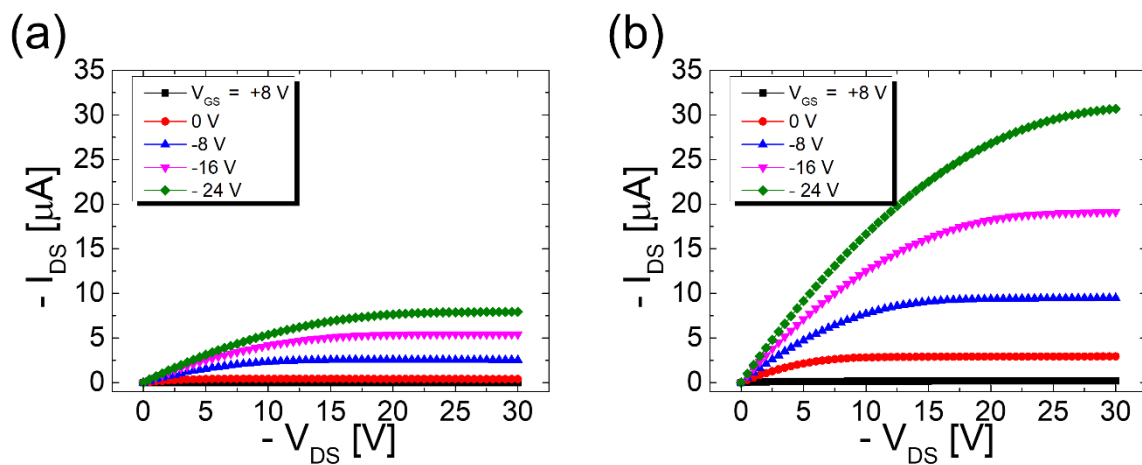
**Figure S4.** (a)-(f) HRTEM images obtained from multiple regions in the SnO film grown on the as-cleaned SiO<sub>2</sub>.



**Figure S5.** (a)-(f) HRTEM images obtained from multiple regions in the SnO film grown on the plasma-treated SiO<sub>2</sub>.



**Figure S6.** XPS spectra of N 1s core level of the as-wet-cleaned, and plasma-treated SiO<sub>2</sub>.



**Figure S7.** Output curves of the bottom gate-structured TFTs fabricated with the SnO grown on (a) the as-wet-cleaned  $\text{SiO}_2$  and (b) plasma-treated  $\text{SiO}_2$ .